TACTILE TEACHINGLEARNING

STRATEGIES-MANNUAL FOR TEACHERS

Lesson Plan Manual

E-7 Lesson Plans (work- sheets) Activities for Students

GENERAL SCIENCE FOR GRADE 5

Khyber Pakhtunkhwa Text Book Board Peshawar

BACKGROUND

In view of the rapid changes in the educational field, a more realistic and need based manual was the need of the day. Realizing the importance of such a teacher training manual and making it based on the real needs of primary school teachers based on Tactile learning strategies, the manual development committee decided to develop it on scientific principles. Therefore, a comprehensive field research study was launched including tactile based learning strategies based test and activities designed based on self-concept development scale for measuring their self-concept development among students etc. based on standards of the new curricula for their psychological testing. Responses of students were made base for their self-concept development in general science. The identified needs were laying five process standards and content standards. The five content standards are based on

- Systems, order, and organization.
- Evidence, models, and explanation.
- Change, constancy, and measurement.
- Evolution and equilibrium.
- Form and function.

The five process standards are, Concept development based on tactile learning strategies, reasoning and proof, Communication, Connection, and Representation. These identified needs are addressed in compliance with the guidelines of the manual development committee which are:

1) Selection of need based contents purely based on tactile learning strategies
2) Research based format for training manual
3) Learner centered approach
4) Adoption of relevant teacher training models

In order to incorporate the recommendations in spirits and words, research-based framework "Dimensions of Learning" was deemed as fit. It aims at the practical involvement of learners in the teaching learning processes based on tactile learning strategies and thereby ensures it as interactive one with its following five dimensions:

i. Positive attitude and perception about learning based on tactile learning strategies.
ii. Thinking involved in acquiring and integrating knowledge.
iii. Thinking involved in extending and refining knowledge.
iv. Thinking involved in using knowledge meaningfully, and tactile concept development.
v. productive habits of minds.

It helps in reshaping classrooms into learning communities where learners take increased responsibility for

their own learning with the knowledge of how to assess their own growth. The ultimate goal is to make the learners independent learners with ability to continue learn throughout their lives. (A brief introduction of the framework is given at appendix A).

E-7 MODEL (Elicit, Engage, Explain, Explore, Elaborate, Evaluate, Extend), being deeply rooted in the Dimensions of Learning, has been adopted as the basic format of training manual (additional information on E-7 model attached at appendix B based on Tactile Learning Strategies). This model is in line with the popular five process standards recommended by experts for effective teaching learning of general science. These five standards are, conceptual learning based on tactile learning strategies, reasoning and proof, Communication, Connection, and Representation. Conceptual learning is a very important reasoning process of excel process. While all other process standards are covered in the explain stage. Each session has a similar format consisting of eight parts, i.e. topic, objectives, strategy, material, introduction, presentation (activities based on explore, extend, excel, and explain), conclusion and reflection.

Introduction aims at motivating the trainees through engagement such as questions and other techniques. Here their previous proficiency is linked with the present one to facilitate the teaching point clear.

The presentation stage covers explore, extend, excel and explain and thereby ensure the comprehension and meaningful application of the content/topic.

Although an implicit element of evaluation runs right from the beginning to the end in the E-7 model, yet reflection serves this purpose more explicitly by making trainees think in term of their previous classroom practices and the approaches adopted in this manual and evolve their own future strategies.

In a sense, this manual is an innovative indigenous attempt based on core tactile teaching learning strategies, that includes material as well as activities/trainees‟ level and is workable with all categories of teachers. It shows a complete departure from rest of the traditional manuals which ignores this hard fact and focus on the child rather than building up the capacity of teachers by making they professionally sound.

A remarkable feature of this manual is the holistic approach that ensures a balance in between content and pedagogy and thereby takes the education a whole process rather than dividing it into its segments.

At present four teachers training models i.e, Craft Model, Reflective Model and Applied Science, Conceptions and Models of Teacher Education are convinced of as the best and re in practice

(Additional information on Teacher Training Model attached at Appendix-C). As the applied science model and conceptions and models of teacher education are more suitable for pre-service training, the other two find reflection in this manual

The manual consists of two main components:
1- Trainers Guide/ based on Tactile Teaching Learning Strategies.

2- Work Sheets (Activities for Students.

Appendix -A

Dimension of Learning

The world we have created is the product of our thinking: it cannot be changed without changing our thinking: (Albert Einstein)

Dimension of Learning (DOL) is about thinking and student learning based on tactile learning strategies. It is a planning frame work integrates the best teaching approaches, tactile learning strategies and practices in to one package. It can be integrated with an out comes approach and can accommodate our current curriculum approach. The frame work was developed by Dr. Robert Marzano and others and is an extension of research based frame work on cognition and learning first developed by Marzano et al, in US in 1998 and used recently in 2020- 2021.DOL (Dimension of Learning) is practical frame work that teacher can use to improve the quality of teaching and learning (McREL site at http://www.mcrel,org/)

Dimension of learning is a comprehensive model that uses researchers and theorist know about learning and to define the learning process based on tactile learning strategies. Its premise is that five types of thinking-called the five dimensions of learning are essential to successful learning dimensions frame work helps the teacher to maintain a focus on learning, study the learning process, plan curriculum, instructions and assessment and task in to accounts the five critical aspects of learning.

Implicit in Dimension of Learning model or framework are five basic assumptions:

1- Instruction must reflect the best of what we know about how learning occurs

2- Learning involves a complex system of interactive processes that include various types of thinking represented by the five dimensions

3- Curriculum program should include the explicit teaching of attitudes, perceptions and mental habits that facilitate learning

4- A comprehensive approach to instruction includes both teachers directed ad student directed instruction.

5- Assessment should focus on student's use of knowledge and complex reasoning processes rather than on their own recall of information

The five dimensions of learning's are;

1- Attitude and Perceptions

Attitude and perceptions influence students‟ abilities to learn. A key element of effective instruction is helping students establish positive attitude and perceptions

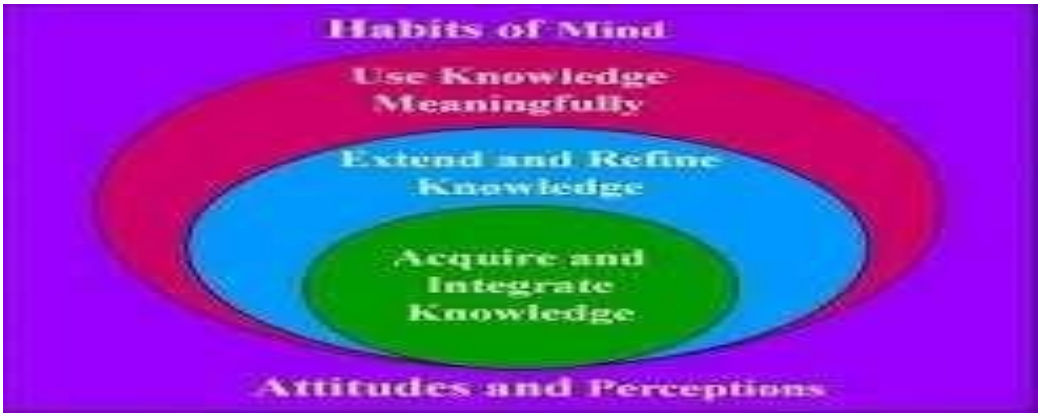

Fig 1: The five Dimensions of learning model

2- Acquire and integrate knowledge

Helping student acquire and facilitate new knowledge is another important aspect of learning. When students are learning now information, they must guide in relating the knew knowledge to what they already know, organizing that information and then make them part of long-term memory. when students are acquiring new skills and processes learners learn a model, or set a step. Then shape the skill or processes to make it efficient and effective for them. They must finally internalize or practice the skill or process so that they can perform it easily.

3- Extend and Refine knowledge

Learner develop in depth understanding through the process of extending ad refining their knowledge, by making new distinctions, learning up misconceptions and reaching conclusions. They analyzed what they have learned by applying reasoning processes, they will help them extend and refine the information. Some of the common reasoning processes used by learners to extend and refine their knowledge;

- Comparing
- Classifying

- Abstracting
- Inductive reasoning
- Deductive reasoning
- Construction support
- Concept clearance
- Analyzing error
- Analyzing perspective
- Analyzing Tactile Learning Strategies

4-Use knowledge meaningfully

The most effective learning occurs when we use knowledge to perform meaningful tasks. Making sure that students have the opportunity to use knowledge meaningfully is one-of those important part of planning a unit of instruction. In the DOL model there are six reasoning processes around which tasks can be constructed to encourage the meaningful use of knowledge

- Decision Making
- Concept -Development
- Invention
- Experiential Inquiry
- Investigations
- System Analysis
- Tactile strategies analysis

6-Habits of Mind

The most effective learners have developed powerful habits of mind that enable them to think critically, think creativity and regulate their behavior. These mental habits are:

Critical Thinking

Be accurate and seek accuracy

Be clear and seek clarity

Maintain an open mind

Restrain impulsively

Take a position when a situation warrants it

Creative Thinking

Persevere

Push the limits of your knowledge and abilities

Generate, trust, and maintain your own standards of evaluation

Generate new ways of viewing situation that are outside the boundaries of standard conventions.

Self-regulated thinking:

Monitor your own thinking

Plan appropriately

Identify and use necessary resources

Respond appropriately to feedback

Evaluate the effectiveness of your actions

Marzano, Robert J., Pickering, Debra J., eta al. (1997). Dimensions of Learning Teachers Manual, 2nd ed. Aurora, Colorado: McREL, pp.1-2,4-6.

Appendix-B

E-7 Model

Teachers Guide for Implementation

Our unit design is translated to the E-7 model that include seven phases;

- **Elicit**
- **Engage**
- **Explore**
- **Explain**
- **Elaborate**
- **Evaluate**
- **Extend**

The learning cycle approach to concept buildings has continued to evolve. On the basis of latest insights form research on how people learn, Eisenkraft (2003) has proposed an extremely effective 7-E learning cycle approach. National science education standard (NRC, 1996) also recommended the 7-E model. 7-E Model is a learning model, depending on the nature of the activity related to student‟s interest, needs and preferences. This model explained that students can use basic science process to develop conceptual understanding of topic

1. Elicit

Elicit students‟ prior and alternative conceptions. When picture charts given to them for their concept buildings. Students used brain storming, creative and mental activities for concept buildings. Graphic organizers/Jig saw activities/ column completion can be used to help the learner in extending and refining knowledge and helpful for alternate and prior concepts

Piques students‟ curiosity and generates interest

Determines students‟ current understanding (prior knowledge) of a concept, or idea.

Invites students to express what they think

Invites students to raise their own questions

For the student, the setting the stage scenario is an engagement part that serves to establish the setting and role, goals or challenge, product/performance and purpose, and criteria for success for the unit. Also, it serves to activate prior knowledge, motivate the student, and give them a reason to learn the new material. The engagement is the foundation of the unit and is an application of Dimension # 4 from the Dimensions of Learning paradigm. What the students do

is to.

Become interested in and curious about, the concept/topic

Express current understanding of a concept or idea based on

tactile learning

Raise questions such as, what‟ do I know about this?

What do I want to know about this? How could I find out?

2. Engage

Motivate the students by arousing their interest. As students has their past knowledge only based on tactile learning strategies. This knowledge does not show the concept as they have, therefore, the Excite part started by asking essential questions in addition to reading an article or showing some diagrammatic sketch/ showing some specimen for discussion. This part motivates the students and provides the opportunity for teachers to find out what the students already know or they think they know about the topic and concepts to be developed.

For the student, this stage situation setting is important and aims for meeting the challenges and good performance is essential and this is criteria for success of each unit. Also, it serves to activate previous knowledge, motivate the student, and give them a cause to learn the new material. The engagement is the basics for each unit and is an application of Dimension no 4 from the Dimension of Learning through engaging students for building concepts and retaining knowledge.

3. Explore

The purpose of the exploration is to give the student experiences with the concepts and skills based on tactile learning strategies to be learned (declarative arid procedural knowledge) through a constructive approach.

Vocabulary‟ is minimized during the exploration phase and is not introduces until the student has mental pictures of the objects or events to which he/she can attach the vocabulary. From Dimensions of Learning, the exploration represents Dimension # 2 Acquiring and Integrating knowledge. During explorations, introductory strategy or reciprocal teaching (is memorizing, questioning, clarifying, predicting) may be utilized for example during the Explore phase, students.

- Use their skills of observation, logic, and deduction to gain an understanding of the process by which neurons relay information.
- Acquire a common set of experiences with their classmates so they can compare results, and ideas; and observe, describe, record, compare, and experiences.

4. Explain

Following an exploration, the student needs an opportunity to connect their previous experiences and to begin to make conceptual sense/ tactile sense of the main ideas and attach vocabulary to concepts and skills that were being observed. This stage allows for the introduction, of formal language, scientific terms, and content information that, might make students‟ previous experiences easier to describe and explain Essential questions, open-ended Questions, higher order questions, and graphic organizers all assist the learner in" extending and refining Knowledge". In the Explain phase, teachers.

Encourages students to use their common experiences and data from the Engage and explore phases

- Revisit the essential questions to‟ help students express understanding and explanations
- Requests justification (evidence) for students‟ explanations based on tactile learning strategies
- Provides time for students to compare their ideas with those of others and perhaps to revise their thinking

Introduces terminology and alternative explanations after students express their ideas For example, Hubs from the national centers for coastal ocean science. Theme Human Health hazards science 1-12 grade level. Recommended the back ground information as essential questions, open –ended Questions, higher

order questions, and graphic organizers, jig saw activities/ graphic organizer, tick cross activity all assist the learner in "Extending and Refining Knowledge ". In the Explain phase, researcher. -Encourages students to use their common experiences and date from the Engage and explore phase-repeated the necessary questions to, help students express understanding and explanations. Requests justification (evidence) for students, explanations. Provides time for students to compare their ideas with those of others and perhaps to revise their thinking. -Introduces terminology and alternative explanations after students express their ideas for concept buildings.

5. Elaborate

The teachers provide opportunities for students to practice and transfer their learning. Applications of the new knowledge are made to new contexts and new situations. This phase may include concept-based learning activities extension, or posing a different question and exploring it. The scenario for this was described to the Excite phase where setting the stage section of the unit occurs. Thus, the student has now come full cycle from the Excitement to the employment. The Employment is the setting in which the student applies knowledge and skills meaningfully for concept buildings, answer questions, and produce products or performances as outlined in the Excitement phase in the Employ phase, teachers. Concept buildings, answer questions, and produce products or performances as outlined in the excitement phase.

6. Evaluate

The teacher uses both formative and summative evaluation and the test items address all aspects of the entire learning experience. such as Huber & Lockledge, (1997) promoting inquiry through puzzle-based grouping. using jigsaw puzzles to make meaningful assignments to groups (Chessian & Moore (2004).i,e, researcher was given to students for completion of using jigsaw puzzles game individually by using cards to know about the vertebrates as explained blow : researcher used the rubric that assessed process skills and conceptual understanding about vertebrates

7. Extend

The teacher provides for the extended transfer of learning of newly learned concepts and understandings to new contexts based on tactile learning strategies and situations for building new concepts in general science.

Appendix -C

Models of Teacher Learning

Various models of teacher learning have been suggested, the three main ones, as described in Wallace (1993), are as follows:

1. The Crafts Model

The trainee learns from the example of a „master teacher", whom he/she observes and imitates. Professional action is seen as a craft, rather like shoemaking or carpentry, to be learned most effectively through an apprenticeship system and accumulated experience based on tactile learning strategies. This is a traditional method, still used as a substitute for postgraduate teaching courses in some countries (Rabik-

Hassan Academia,2017).

2. The Applied Science Model

The trainee studies theoretical courses in applied linguistics and other allied subjects, which are then, through the construction of an appropriate methodology, applied to classroom practice. Many university-college-based teacher-training courses are based, explicitly or implicitly, on this idea of teacher learning based on tactile learning strategies.

3. The Reflective Model

The trainee teaches or observes lessons or recalls past experience; then reflects, alone or in discussion with others, in order to work out theories about teaching and tactile learning strategies; then tries these out again in practice. Such a cycle aims for continuous improvement and the development of personal theories of action (Schon, 1983). This model is used by teacher development groups and in some recently designed training courses.

Source: (A Course in Language Teaching. Practice and Theory. Cambridge University Press, 1996. By Penny UR

4-Conceptions and Models of Teacher Education

The more advance model was used for teacher training as well as for concept clearance for students based on tactile learning strategies. It was further used for students, regarding curriculum design and was also totally based on concept clearance. Activities designed in such a manner for classroom level based on conception of teacher education, the models used for teacher education, pedagogy of teacher education is basic goal of this model and basic purpose of teacher education and tactile learning strategies. (Christie &Mc Kinney,2017. Mogliacci& Robinson,2019)

TRAINING TIPS

Although the trainers are assumed to be very expert in their field, yet the following few training tips will be of great assistance and will serve as helpful reminder to even the most experienced trainers:

- It is always the social atmosphere of the workshop that determines its success or failure. A physically sound and psychologically conducive environment acts as safeguard to ensure the attainment of its objectives.
- Deploy all the available resources for such a physical classroom environment/seating arrangement that facilitates the participants to the optimum level on one hand and on the other hand, allows you move freely from one group to the other for help or support.
- A conducive psychological environment is entirely the responsibility of the trainers.as cotrainer, your work should seem the work of a team rather than individuals and you should reflect the same respect and attitude towards each other as you expect from others.
- Your friendly, supportive and positive attitude towards the participants will help you a lot to create a positive atmosphere where the people will willingly sit and cooperatively learn.
- In view of your role and responsibilities as trainer, go through each session very thoroughly prior to entering class and ensure that you are fully familiar with its contents and the mode of its conduct.
- Ensure that you have already prepared all the materials and all the A.V. aids to be used during the session for its smooth and effective conduct.

- Make frequent eye contact by looking by at all the participants, not staring them.
- Use the writing board properly by making your points obvious with as few words as possible and ensure that your writing and aids are visible for all participants.
- Always speak simply, slowly and clearly but loud enough for all participants to hear.
- Make sure that all the activities of each and every session are being carried out in accordance with their instructions and within the specified time.
- Always give clear instructions as to what you want the groups to do.
- Group works aims at drawing on the skills of the participants and serves as powerful motive for shy or hesitant participants feel more comfortable and be ready to contribute in a small group.
- Change the groups freely but politely when you think that the old associations are causing hurdle and ask the to take all their belongings with them to the new group.

- Move freely around the groups when they are at work and ensure that all the participants are involved in the work.
- Sit as part of a group or stand beside a group you wish to talk to or provide support. Never stand in front of a group, lean over or sit behind a desk or else the participants will lose interest.
- To ensure equal participation, invite a new member from each group every time, not one and the same person repeatedly.
- Be interested in what the group representative say/ present because these are the comments of the groups that own them.
- Accept all the presentations without interruption or passing judgement and encourage the participants for discussion as the main purpose of group work is variety of ideas and to allow for the input of the participants in the content of the course.
- Ask for gently if you want further clarification or more explanation of any point. Try t call by name rather than pointing with fingers.
- Never down rate the participants and be always optimistic bout their abilities and experience.
- Avoid at the spot correction of grammatical and pronunciation mistakes because the main object is to develop confidence and fluency in language.
- Choose some other suitable time for such corrections when you can model the correct way of saying something for the whole group imperceptibly.
- Always allow some time for response to a question because participants first think in native language and then formulate response.
- Participants questions be re-directed to other participants till the matter is resolved and confusion removed or else the participants will be awaiting for your satisfactory response.
- Always conclude the session yourself by summarizing and clarifying the key points as session covered.

CONTENTS

Unit-1

Classifications of Living Things

After studying this unit, the students will be able to:

- **Define classification**
- **Explain the need and importance of classification**
- **Differentiate between vertebrates and invertebrates according to their key characteristics**
- **Identify vertebrates and invertebrates in their surroundings**
- **Classify vertebrates in to mammals, reptiles, fish, birds and amphibians**
- **Classify invertebrates on the basis of their characteristics**
- **Identify the key characteristics of worms and insects**
- **Compare flowering and non-flowering plants**
- **Classify flowering plants according to their characteristics and give example of each group**
- **Compare the structure of monocot and dicot seed**
- **Compare the structure of monocot and dicot leaf in terms of its shape and venation**
- **Differentiate the structure of monocot and dicot flower in terms of number floral leaves**

Unit-2

Microorganisms

After studying this unit, the students will be able to:

- **Define microorganisms**
- **Identify the main groups of microorganisms and give examples for each**
- **Describe the advantages and dis advantages of microorganisms in daily life**
- **Define infection**
- **Identify ways by which microorganisms can enter in the human body**
- **Suggest ways to avoid infections**

Unit -3

Seed: Structure and Germination

After studying this unit, the students will be able to:

- **Compare the structure of and function of French and maize seed**
- **Lis the function of cotyledons**
- **Identify the conditions necessary for germination**
- **Predict what would happen to seed, if conditions not necessary for germination are not fulfilled**

Unit -4

Environmental Pollution

After studying this unit, the students will be able to:

- **Define pollution and describe different kinds of pollution**
- **Explain the main causes of water, air and land pollution**
- **Explain the effects of water, air and land pollution on environment**
- **Suggest the ways how to reduce the effects of water, air and land pollution on environment**
- **Plan and conduct a campaign to bring awareness to the problem of environmental pollution in their surroundings**
- **Differentiate between biodegradable and non-biodegradable materials**
- **Explain the impact of non-biodegradable materials on the environment**
- **Suggest ways to reduce impact of non-biodegradable materials**

Unit-5

Matter and Changes in its States

After studying this unit, the students will be able to:

- **Describes the properties of three states of matter on the basis of arrangement of particles**
- **Demonstrate the arrangement of particles in three states of matter through models**
- **Investigate the effect of heat on particles, motion during change in states**
- **Demonstrate and explain the processes that are involved in the change of statuses**
- **Describe the role of evaporation and condensation in the water cycle**
- **Identify and describe forms of moisture in the environment**

  (i,e dew,snow,fog,frost,rain)

Unit-6

Forces and Machines

After studying this unit, the students will be able to:

- **Describe friction and its causes**
- **Explain the advantages and dis advantages of friction**
- **Suggest methods to reduce friction**
- **Identify what cyclists, swimmers and parachutists do to reduce friction**
- **Explain the gravitational forces using different examples**
- **Distinguish between mass and weight**
- **Differentiate between balanced and unbalanced forces**
- **Describe the effects of balanced and un balanced forces on the motion of an object**
- **Describe the terms inertia**
- **Demonstrate how wedges and inclined plane are used to move the objects**
- **Compare the three kinds of levers using examples**
- **Describe how lever makers work easier by giving examples of its uses from daily life**

Unit Description
(Topic wise)

Chapter No-1 **Ist Week**

Time; 35-40minutes

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Classification of living things	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Need and importance of classification	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Differentiate between vertebrates and invertebrates according to their key characteristics and their surroundings	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Classification of vertebrates in to mammals, reptiles, fish and birds and amphibians	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Classification of invertebrates on the basis of characteristics	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Identification of key characteristics of worms and insects'	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	

Unit Description
(Topic wise)

Chapter No-1 **2nd Week**

Time; 35-40minutes

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Comparison of flowering and non-flowering plants	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Classification of flowering and non-flowering plants on the basis of characteristics and each group with example	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Comparison of monocot and dicot seed	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Comparison the structure of monocot and dicot leaf in terms of its shape and venation	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Differentiation of monocot and dicot flower	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Differentiation of monocot and di cot flower in terms of number of floral leaves	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	

Unit Description
(Topic wise)

Chapter No-2 **3rd Week**
Time; 35-40minutes

Microorganisms

S.NO	Unit-Division	Week in days	Methodology	Remarks
1	Introduction of microorganisms	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Identification of main groups of microorganisms and their examples	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Advantages and disadvantages of microorganisms	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Introduction of infection	Thursday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
5	Introduction and ways how microorganisms enter in a body	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Ways of avoidance of infection and key points discussion	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	

Unit Description
(Topic wise)

Chapter No-3 **4th Week**

Time; 35-40minutes

Seed: Structure and Germination

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Seed structure and function of seeds	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Types of seed	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Structure of maize seed and structure of bean seed	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Seed germination	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Conditions for seed germination	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Key characteristics of seed and seed germination	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional Lecture method	

Unit Description
(Topic wise)

Chapter No-4 **5th Week**

Time; 35-40minutes

Environmental Pollution

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Pollution and its kinds	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Main causes of pollution of water, air and land pollution	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	The effect of water, air and land pollution on environment	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Plan and conduct a campaign to bring awareness to problem of environmental pollution and remedial steps for water. land and, environmental pollution	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Differentiate between Biodegradable and Non-biodegradable materials and how it reduces?	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Non-biodegradable materials impact on the environment and key characteristics discussion	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional Lecture method	

Unit Description
(Topic wise)

Chapter No-5 **6th Week**

Time; 35-40minutes

Matter and changes its state

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Introduction of three states of matter	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Arrangement of particles in three states of matter through models	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	The effect of heat on arrangement of particles for example solid, liquid and gas particles	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Process involved in change of states of matter	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Water cycle and evaporation and condensation of water cycle	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Moister and different forms of moisture and key points discussion	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional Lecture method	

Unit Description
(Topic wise)

Chapter No-6 **7th Week**

Time; 35-40minutes

Forces and Machines

S.NO	**Unit-Division**	**Week division in days**	**Methodology**	**Remarks**
1	Friction and force of friction	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Causes of friction	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Advantages and Disadvantages of friction	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	Methods of reducing the friction	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Force of friction impact on Gravitational forces Mass and Weight	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Balanced and Un balanced forces and their effect on motion of objects	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional Lecture method	

Unit Description
(Topic wise)

Chapter No-6 **8th Week**

Time; 35-40minutes

Forces and Machines

S.NO	Unit-Division	Week division in days	Methodology	Remarks
1	Law of Inertia	Monday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
2	Simple machines And their detail	Tuesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
3	Lever and its kinds	Wednesday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
4	First form of lever and its example	Thursday	Experimental group taught with concept-based method 2-Control group taught with traditional lecture method	
5	Second and third form of lever and its examples	Friday	1- Experimental group taught with concept-based method 2- Control group taught with traditional lecture method	
6	Key points discussion about forces and machines	Saturday	1- Experimental group taught with concept-based method 2- Control group taught with traditional Lecture method	

Khyber Pakhtookhwa Text Book Board Peshawar

General Science

Lesson Plan Manual

Teacher's Mannual
Grade : 5th, Chapter No. 1

Lesson Planing
7-E Learning Model

Science Lesson Plan-1

Activity Title:	Classification of living things
Grade/Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Differentiate and classify the living things.
Objectives	Students will be able; 1. To define and identify the groups of plants and animals and other living organisms. 2. Align the pictures of organisms of living things according to systematic classification.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to name the things present in the surroundings (Teacher will enlist the things on the black board/white board)
- Teacher will point towards each thing ask them where this thing will be placed in the table (under living things or non-living things) for example fan, table, chair, desk, bags, plants, boys, girls, charts, bulb, white board, sparrow, lunch box, flash cards, marker

Name of things present in surroundings

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Engage

Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q. Following are few things listed below. Place them in respective column. Whether they are living things or non-living things.

- Fish, Tree, flower, air, cloud, horse, moon, star, goat, man, cat, sun, fire, season, tomato, aunt camel, algae, grasshopper.

LIVING THINGS	**NON-LIVING THINGS**

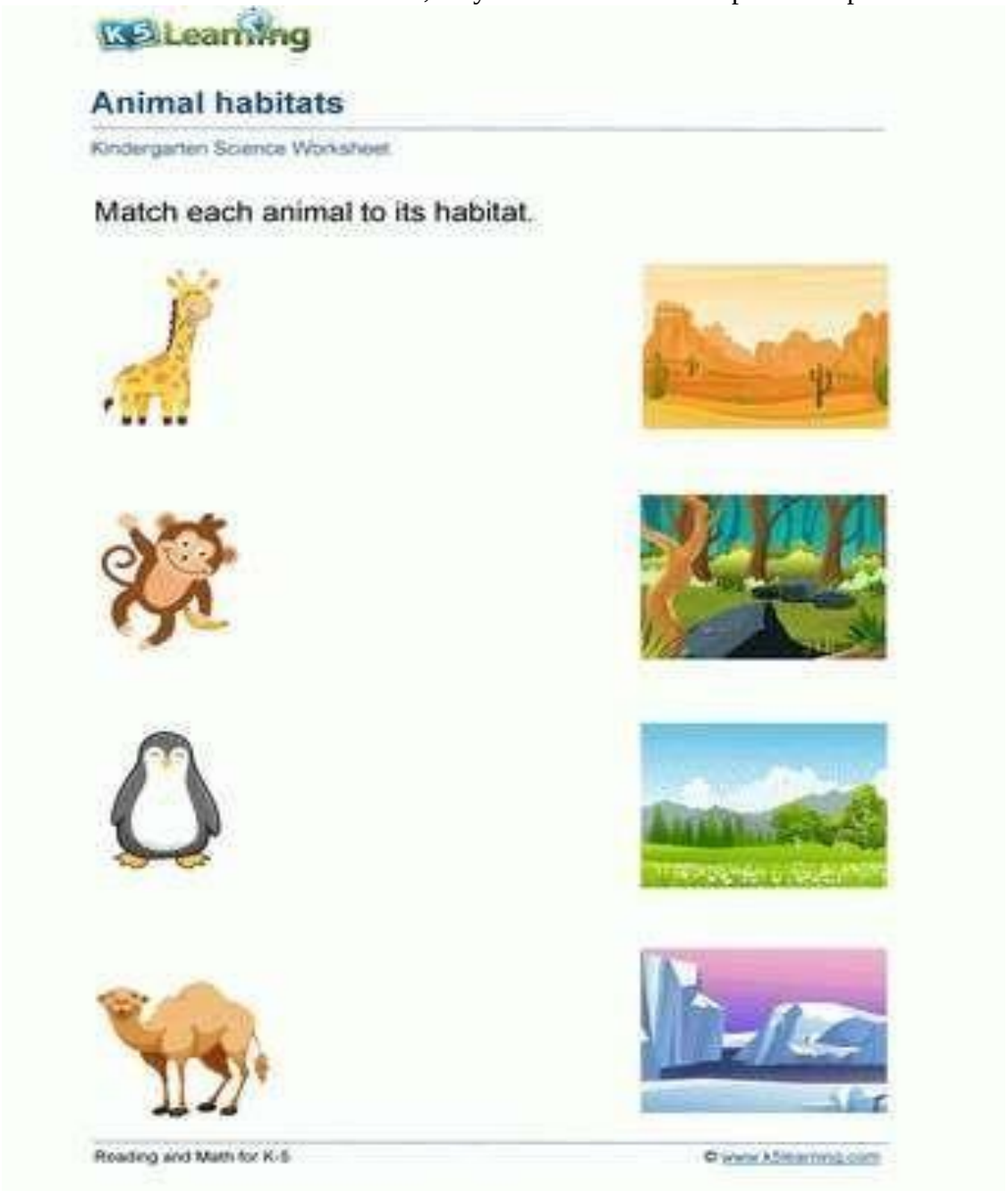
Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of living organisms living in different habitat.**

- Teacher will ask the students:" see the pictures of animals and birds living in different habitat and ask them write the places, where these birds/animals live?
- Students will identify the other places of habitat of animals/birds by seeing the pictures
- Teacher will ask the students the following question;
- Match the animals or plants with its habitat?
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.



Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using **graphic organizer**, while
- working in 05 groups. Group leader will explore their idea in front of class

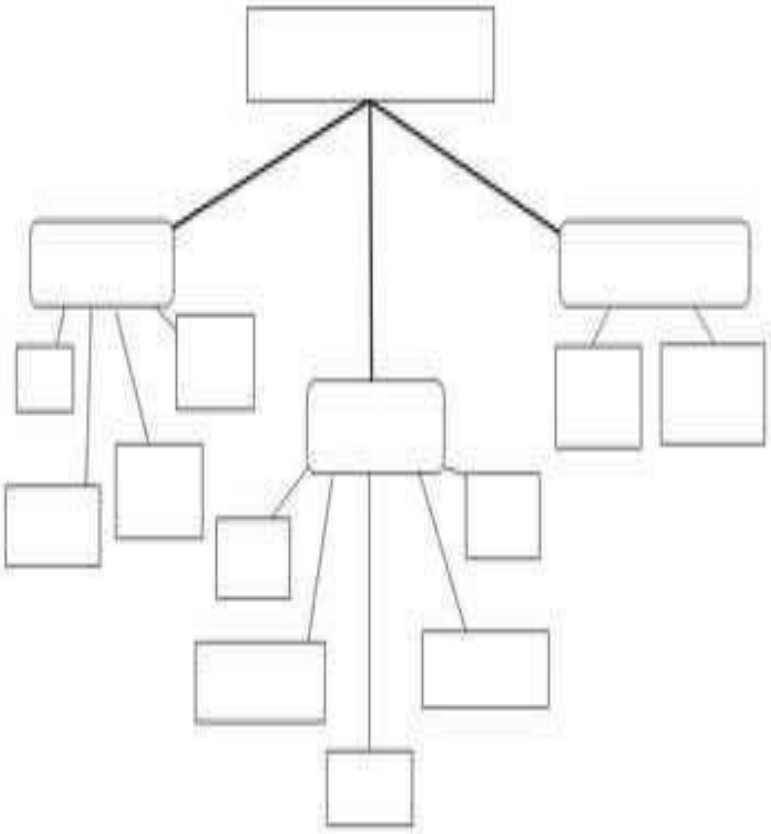
Activities

- **Students will be asked, see the pictures of plants and classify them according to their size.**
- **Students will discuss with each other, while seeing pictures about tall, short plants, herbs, shrubs etc.**
- **Teacher will guide them while working in groups.**
- **Students will arrange plants in graphic organizers**

Further, teacher will guide the students by giving them example, teacher will ask classify the similar things present in yours bags on the basis of similaritie s, students will separate the things in bags and classify them.

- Students will be asked, see the pictures of plants and classify them according to their size.
- Students will discuss with each other, while seeing pictures about tall, short plants, herbs, shrubs etc.
- Teacher will guide them while working in groups.
- Students will arrange plants in graphic organizers
- Teacher will ask them, placing the things in to groups and sub groups on the basis of similarities is called classification.
- Further, teacher will guide the students by giving them example for example, teacher will ask classify the similar things

Graphic organizer for plants



present in yours bags on the basis of similarities, students will separate the books and note books and writing articles such as pencils, pens and other articles such as raisers, sharpener etc.

- In graphic organizer students will arrange the plants groups and sub groups after discussion in groups. Students will arrange plants according to their size.

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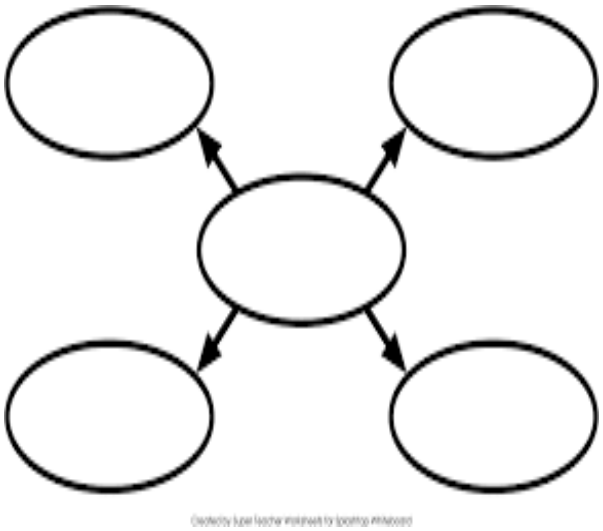


Graphic organizer for classification of bags articles.

Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of classification of living organisms for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of different animals and plants and ask the students; See the pictures of charts and write the classification of living organisms in table given below for example teacher will present the name of different animals, plants and other living organisms in front of students. The names are given below; pea, goat, potato disease, water algae, fungal infection on bread, snake, mushroom, cocci bacteria, butterfly, sugarcane, rose plant, aunt, ring worm
- Students will observe the pictures present on charts and discuss with each other in groups and complete the column given below;

Bacteria	Algae	Fungi	Plants	Animals

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will write the names of different animals and plants for example, sparrow, crow ,fish, tree, flower, horse, goat, man, cat, buffaloes ,rose plants , algae, fungi, bacteria, Chlamydomonas .rabbit ,tiger, giraffe and will ask to students to classify the things on the basis of their movement in environment and complete task in given table below individually.

The birds who can fly.	**The animals who can creep.**	**The plants who can grows.**	**The plants who can be seen by microscope.**	**The animals who can run.**	**The animals who can swim.**

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities

based on tactile learning strategies. Students will remind the things and explained in tables provided them in groups.

- Teacher will write the names of different animals and plants for example, sparrow, crow ,fish, tree, flower, horse, goat, man, cat, buffaloes ,rose plants , algae, fungi, bacteria, Chlamydomonas and will ask to students to classify the things on the basis of their movement in home environment and complete task in given table below in groups.

- Q.NO 1. Explain the classification of living organisms on the basis of their home environment

The name of birds who can fly.	The name of animals who can creep.	The name of plants who can grows.	The plants who cannot be seen by naked eyes.	The name of animals who can run.	The name of animals who can swim in water.

Lesson Plan-2

Activity Title:	Need and importance of classification
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain need and importance of classification
Objectives	Students will be able; 1. To define the need and importance of classification. 2. To place the living things in respective groups according to need and importance of classification 3. To appreciate the characteristics of living things on the basis of similarity may be in their shape, size physical structure and colour

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the things present in the surroundings according to their characteristics in respective column for example shape, size,colour and structure(Teacher will enlist the things on the black board/white board)
- Teacher will point towards each thing ask them where this thing will be placed in the table according to their characteristics. for example, teacher will explain the names of living things which you see in your surroundings on the basis of their characteristics. frogs, rose, sparrow, tree, pigeon, snake, grass. Grasshopper, mosquito, flowers.

LIVING THINGS

PLANTS	ANIMALS

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Following are few things listed below. Place them in respective column on the basis of their characteristics, whether they are plants or animals.
  Fish, Tree, flower, horse, goat, man, cat, tomato, aunt camel, algae, grasshopper.

LIVINGS THINGS ON THE BASIS OF CHARACTERSTICS

PLANTS	**ANIMALS**

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of living organisms living in different places.**

- Teacher will ask the students:" see the pictures of animals and birds living in different places and ask them write the places, where these birds/animals live on the basis of their characteristics?
- Students will identify the places of animals/birds by seeing the pictures
- Teacher will ask the students,see the pictures of animals/birds and place them in their respective column for example big animals,creeping insects on land,birds who fly in air,animals live in water.
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

BIRDS/ANIMALS NAME	WHERE THEY LIVE?

Explain

Time Duration 05 minutes;

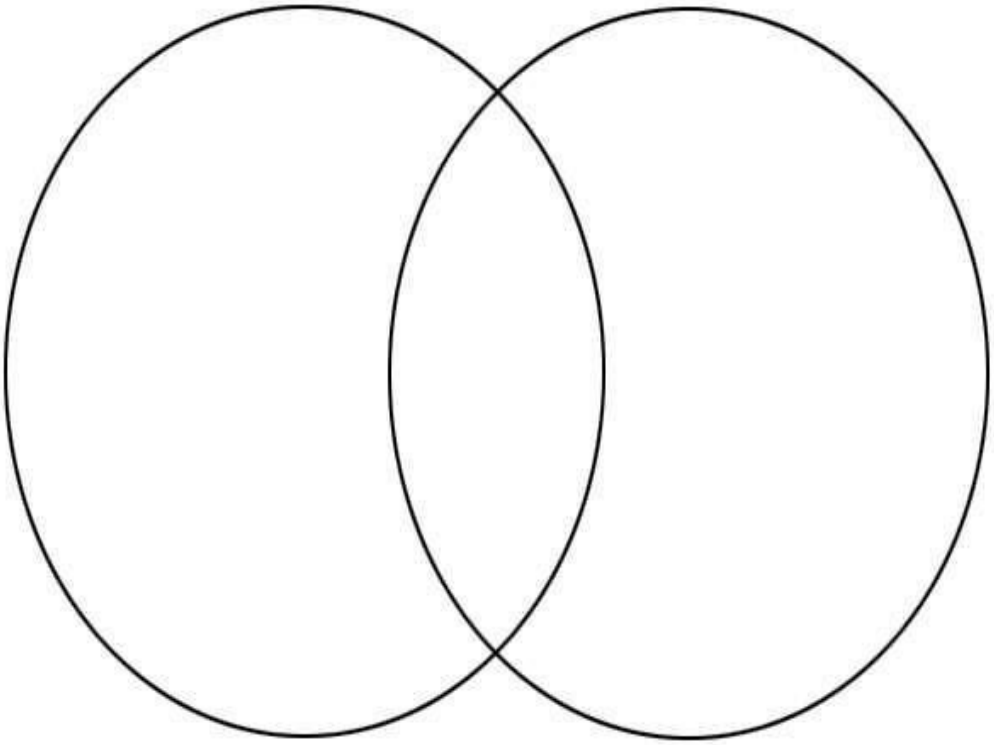
- In this phase students will complete their task by using **vann diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of plants and classify them according to their s characteristics.
- Students will discuss with each other, while seeing pictures about tall, short plants, herbs, shrub
- Teacher will guide them while working in groups.
- Students will arrange plants on the basis of similarities and differences in
- Vann Diagram

VENN DIAGRAM

- Names of plants similar characters in middle
- Names of Tall plant size with similar character on right side
- Names of Short plants with similar character on left side



Elaborate

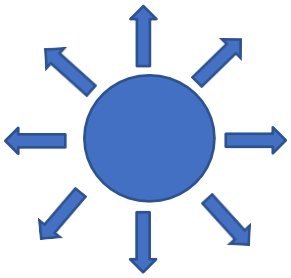
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of classification of living organisms on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary both for plants and animals to survive.
- Students will discuss with each other about the basic needs of plants and animals in groups for example for living organisms (plants and animals) food, water, air, normal temperature, sussn light required.
- Group leader will discuss with each other and will complete the web sketch after completion present work in front of students

Web Sketch completion for factors necessary of living organisms (plants and animals)



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Put a tick in front of right statement and cross for wrong statement.

• Animals are similar characteristics are placed in one group.	
• Reptiles have hairs on their bodies.	
• Bat is a mammal that can fly.	
• Fishes can swim in water.	
• Birds build nest.	

Extend

Time Duration ;05 minutes

Group work will be given to students to complete their task in new context for extending their ideas.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities in groups.
- Students will be reminding things/discuss and explained in tables provided work in groups.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table after discussion in groups and group leader will present this activity in front of class**.**

Q. Write down two main characteristics of classification of living things.

• Bacteria.	**1)** **2)**
• Fungi	**1)** **2)**
• Algae	**1)** **2)**
• Plants	**1)** **2)**
• Animals	**1)** **2)**

Lesson Plan 3

Activity Title:	Differentiate between vertebrates and invertebrates according to their classification, surroundings and characteristics
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Differentiate between vertebrates and invertebrates according to their classification, surroundings and characteristics.
Objectives	Students will be able; 1. To differentiate between vertebrates and invertebrates according to their key characteristics. 2. To identify vertebrates and invertebrates in their surroundings. 3. To classify the invertebrates on the basis of their characteristics

Planning Stages Within the 7-E Inquiry Model

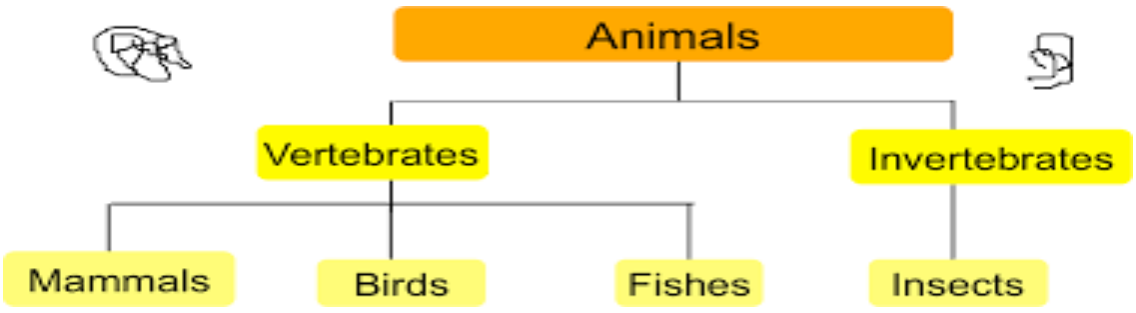
Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the things present in the surroundings according to their characteristics (Teacher will enlist the animals like vertebrates and invertebrates and their respective sub classes mammals, birds, fishes, and invertebrates sub class insect on the black board/white board)

Division of Animals



- Teacher will point towards each thing ask them where this thing will be placed in the table according to their classification. for example, teacher will ask to students enlist the names of vertebrates and invertebrates which you see in your surroundings on the basis of their characteristics. frogs, sparrow, lizard, pigeon, snake, grass. Grasshopper, mosquito.

LIST OF VERETEBRATES AND INVERTEBRATES ON THE BASIS OF THEIR SURROUNDINGS

List of Vertebrates	List of Invertebrates

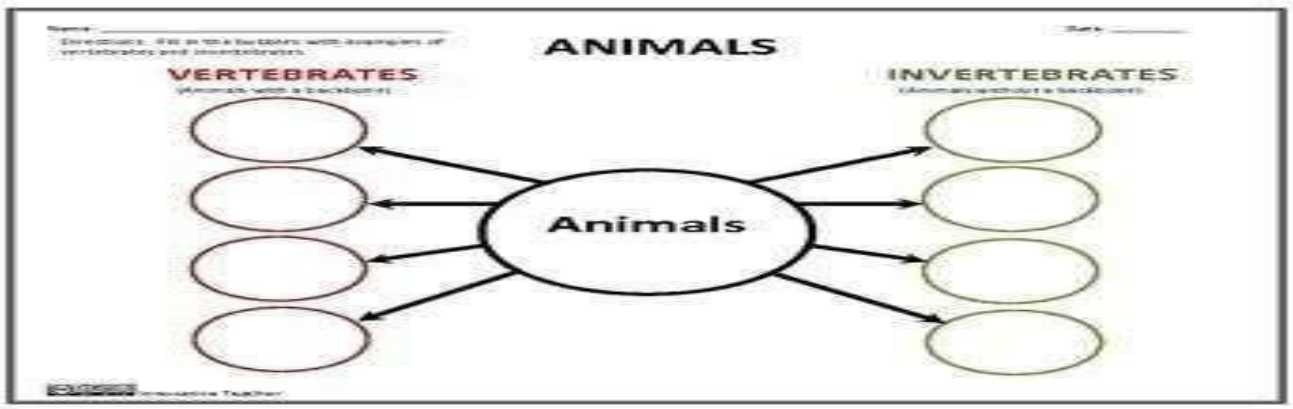
Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Following are few animals listed below. Place them in respective column on the basis of their classification (whether they have a backbone or not have a backbone).
- Fish, horse, goat, man, cat, lizard, aunt camel, frog, grasshopper.

List of animals on the basis of division (have/have not backbone)



Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students' **vertebrates and invertebrates living in different places.**

- Teacher will ask the students:" see the pictures of animals and birds living in different places and ask them write the places, where these birds/animals live on the basis of their classification and characteristics?
-
- Students will identify the other places of animals/birds by seeing the pictures
- Teacher will ask the students,see the pictures of animals/birds and place them in their respective column for example big animals,creeping insects on land,birds who fly in air,animals live in water.
- Students will be completed task in given table below
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

BIRDS/ANIMALS NAME	WHERE THEY LIVE?

Explain

Time Duration 05 minutes;

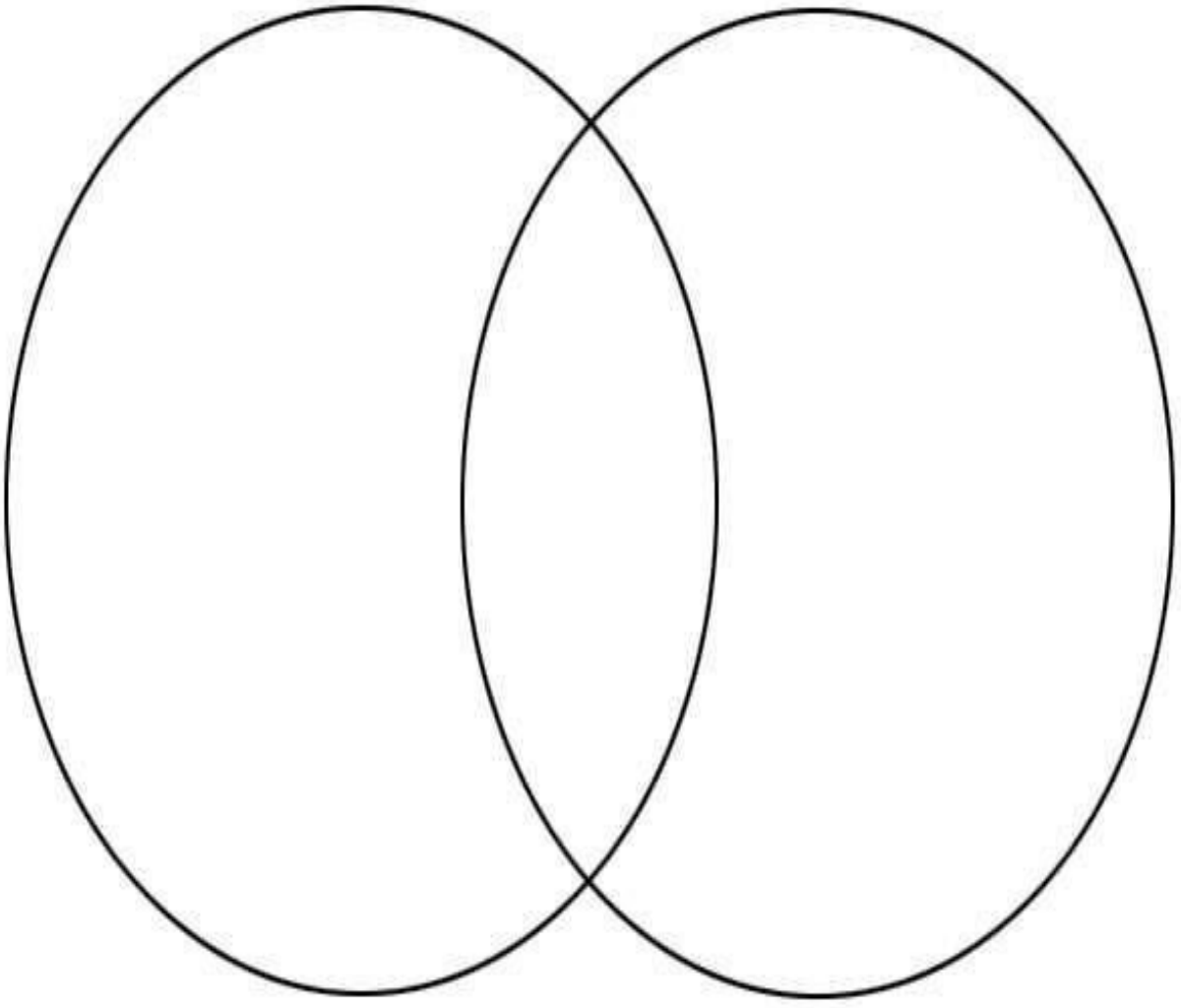
- In this phase students will complete their task by using **vann diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activity

- Students will be asked, see the pictures of animals and classify them according to
- their size on the basis of their classifications.
- Students will discuss with each other, while seeing pictures about all animals etc.
- Teacher will guide them while working in groups.
- Students will arrange animals on the basis of similarities and differences in
- Vann Diagrams

VENN DIAGRAM

- Names of animals similar in classification will be in middle
- Tall animals' size with similar character on right side
- Short animals on left side



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of classification of vertebrates and invertebrates for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of different animals and ask the students; See the pictures of charts and write the classification of vertebrates and invertebrates in table given below for example teacher will present the name of different animals, that are vertebrates and invertebrates in front of students. The names are given below; pea, goat, snake, lizard, grasshopper, fish, starfish, butterfly, aunt, ring worm, sparrow, eagle, Jellyfish, scorpion., earthworm, tape worm, hookworm
- Students will observe the pictures present on charts and discuss with each other in groups and complete the column given below;

INVERTEBRATES		**VERTEBRATES**				
INSECTS	**WORMS**	**FISHES**	**BIRDS**	**AMPHIBIANS**	**REPTILES**	**MAMMALS**

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will write the names of different animals for example, sparrow, crow ,fish, tree, flower, horse, goat, man, cat, buffaloes ,rho fish, star fish , scorpion,hookworm,tapeworm .rabbit ,tiger, giraffe and will ask to students to classify the things on the basis of their movement in environment and complete task in given table below individually.

The birds who can fly.	**The animals who can creep.**	**The animals who can walk.**	**The animals who live in earth.**	**The animals who can run.**	**The animals who can swim.**

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will write the names of different animals for example, **fish, lizard, earthworm, butterfly, human beings, starfish, parrot** and will ask to students to classify the animals on the basis of their properties/characteristics and complete task in given table below individually.
- Q.Complete the table by putting tick and cross in the relevant boxes.

S. N0	**PROPERTIES/CHARACTERSTICS**	**VERTEBRATES**	**INVERTEBRATES**
1	Presence of backbone		
2	Small shape		
S.NO	**EXAMPLES**		
	FISH		
	LIZARD		
	EARTHWORM		
	BUTTERFLY		
	HUMANBEINGS		
	STARFISH		
	PARROT		

Lesson Plan-4

Activity Title:	Classify vertebrates according to their sub- classification
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Classify vertebrates according to their sub- classification
Objectives	Students will be able; 1. To classify vertebrates into mammals ,reptiles,fish birds and amphibians.

7-E Inquiry Model

Elicit

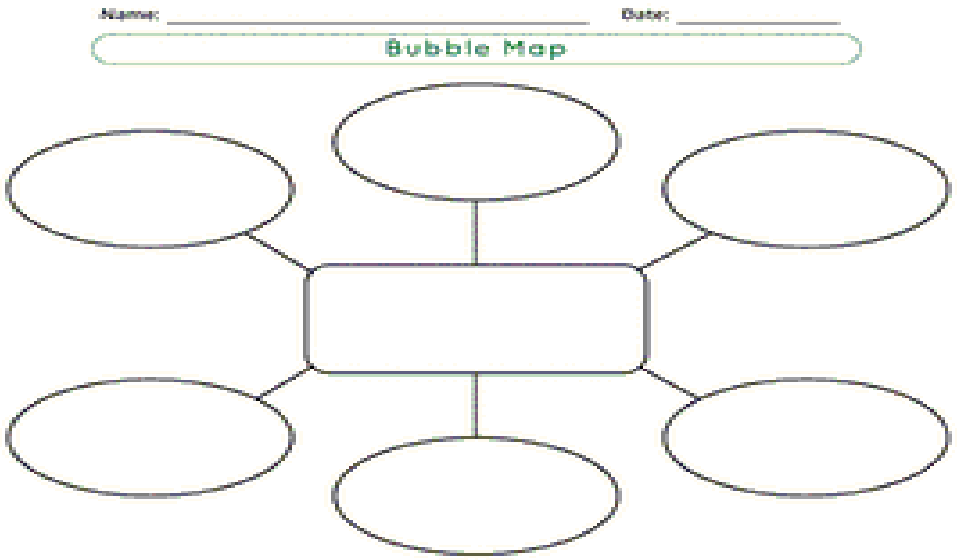
- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to write the name of any animals present in the surroundings according to their classification based on tactile learning strategies

- Students will arrange the animals names **in graphic organizer** on the basis of their shape, size, colour and structure for example. frogs, sparrow, lizard, pigeon, grasshopper, mosquito.

Graphic organizer for name of animals



Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q. Following are few animals listed below. Tick and cross them in respective column on the basis of their classification (whether they have a backbone)?.
  Fish, horse, goat, man, cat, lizard, aunt, camel, frog, grasshopper,mosquito,butter fly.

CLASSIFICATION OF VERTEBRATES

VERTEBRATES(Have a backbone)	TICK	CROSS

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **vertebrates living in different places.**

- Teacher will ask the students:" see the pictures of animals and birds living in different places and ask them write the places, where these birds/animals live on the basis of their classification and sub-classification?
- Teacher will explain the students, animals and birds lives in different places for example big animals lives on land,creeping insects also lives on land,birds who fly in air builds nest, some animals live in water.

- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

VERTEBRATES(BIRDS/ANIMALS NAME)	WHERE THEY LIVE?

Explain

Time Duration 05 minutes;

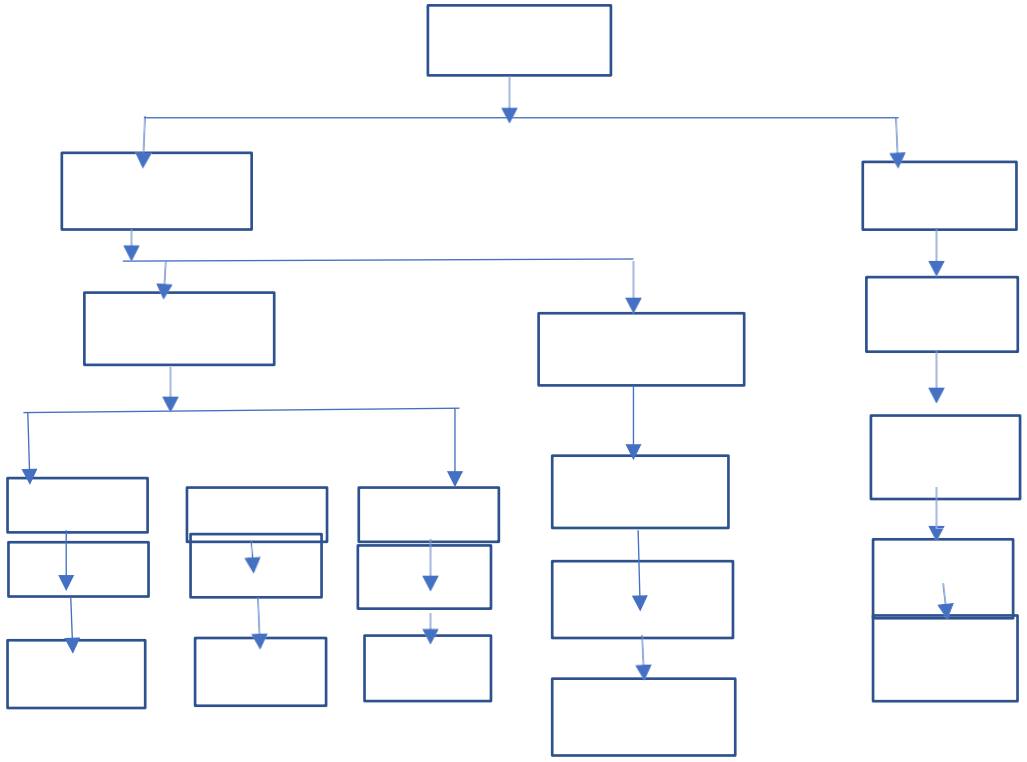
- In this phase students will complete their task by making key points, while working in 05 groups. Group leader will explore their idea in front of class

Activity

Students will be asked, see **the pictures of animals** and classify them according to their size on the basis of their classifications.

- Students will discuss with each other on the basis of their key characteristics, while
- seeing pictures about all animals .
- Teacher will guide them while working in groups.
- Students will arrange animals on the basis of similarities and differences in key points characteristics discussion. For example, vertebrates who have no legs, live in water, have a fins and gillslit,moreover,vertebrates having legs,liveon land and water both, their skin is slippery,similarly,some live on land,they have a Skin, can fly,have a wings, some animals creeping on land,have a slippery skin. Some animals have hair on their body,some walk and flyect.
- Students will write the name of sub -class on the basis of similarities of animals at the end
- Then in similar way, STUDENT will write at the end of key points the name
- of group of sub classification (fishes,amphibions,birds,reptiles,mammals)
- when students will told their group leader after discussion in groups Group leader will present their work in front of class

KEY POINTS OF EACH SUB-CLASSIFICATION



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of classification of vertebrates and sub-classification for further clearance of concepts based on tactile learning strategies.

Activity:

- Teacher will take **another picture chart** of different animals and ask the students; See the pictures of charts and write the classification of vertebrates in to their respective sub- classes in table given below for example teacher will present the name of different animals, that are vertebrates in their respective sub classes in front of students. The names are given below; goat, snake, lizard,grosshopper, fish,starfish, butterfly, aunt, ring worm,sparrow,eagle,Jellyfish,scorpion.,earthworm,tape worm ,hookworm
- Students will observe the pictures present on charts and discuss with each other in groups and complete the column given below in respective sub-classes;

CLASSIFICATION OF VERTEBRATES

S.NO	FISHES	AMPHIBIONS	REPTILES	BIRDS	MAMMALS

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will write the names of different sub-classes in first column for example, **fish,amphibions,reptiles,birds,mammals and characterstics** and will ask to students to classify the things on the basis of their characterstics and complete task in given table below individually.
- Teacher will ask question by following manner
  Q.Complete the table by putting a tickor cross in the relevant space

VERTEBRATES AND THEIR SUB-CLASSIFICATION

VERTEBRATES	FISH	AMPHIBIONS	REPTILES	BIRDS	MAMMALS
FEATHER					
BACKBONE					
FINS					
LAY EGGS					
HAIR ON BODY					
MOIST SKIN					
FEATHERS					
GILLS					
LUNGS					
SCALES					

LESSON -PLAN 5

Activity Title:	Classification and sub-classification of invertebrates on the basis of their characteristics
Grade /Level /Subject	Grade $5^{th,}$ General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the classification and sub-classification of invertebrates on the basis of their characteristics and based on tactile learning strategies
Objectives	Students will be able; 1. To classify invertebrates on the basis of their characteristics 2. To identify key characteristics of worms and insects

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the animals present in the surroundings according to their characteristics
- Teacher will further ask them where this animal will be placed in the table according to their characteristics. For example, teacher will ask enlist the names of animals consisted of worms and insects which you see in your surroundings on the basis of their characteristics. Grasshopper, mosquito, ant, housefly, spider, scorpion, butterfly, cockroach, tapeworm, earthworm, hookworm, snail, sponges, jellyfish
- Students will arrange the animals consisted of worms and insects on the basis of their shape, size, color and structure in respective columns.

NAME OF ANIMALS ON THE BASIS OF THEIR CHARACTERISTICS

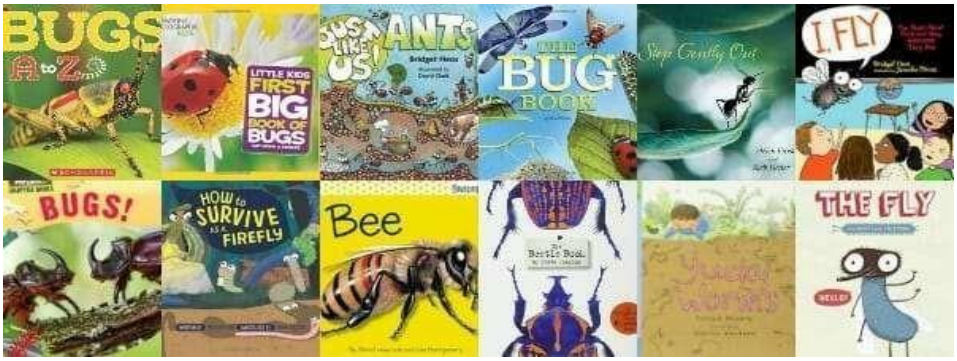
NAME OF ANIMALS	INSECTS	WORMS

Engage

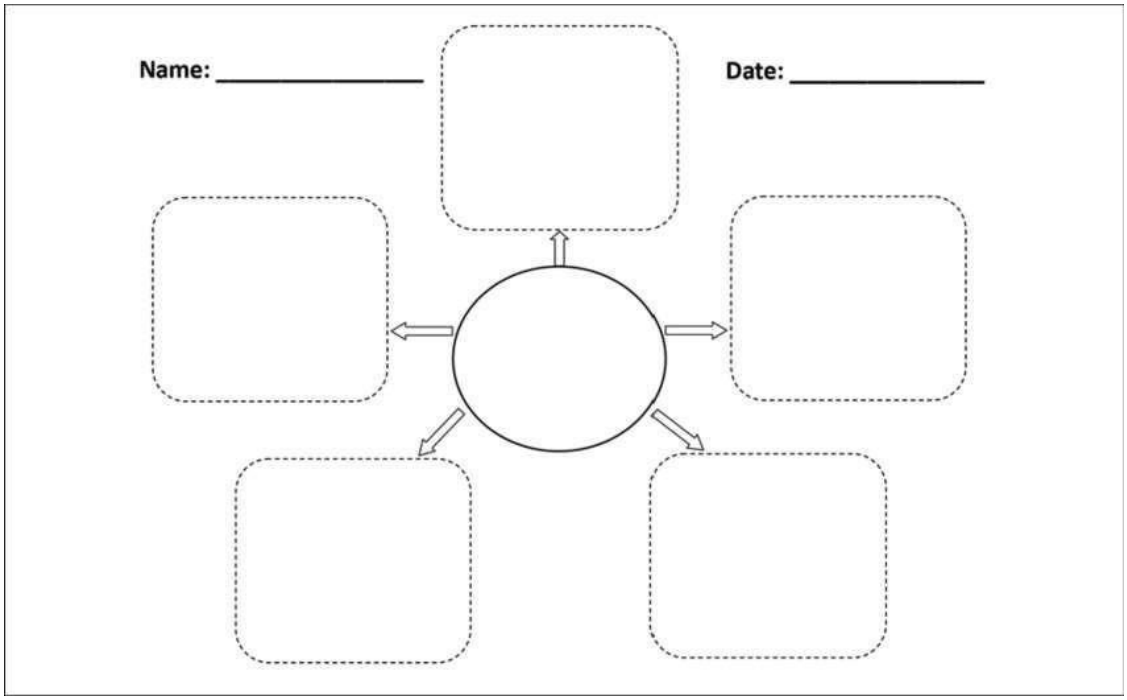
- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

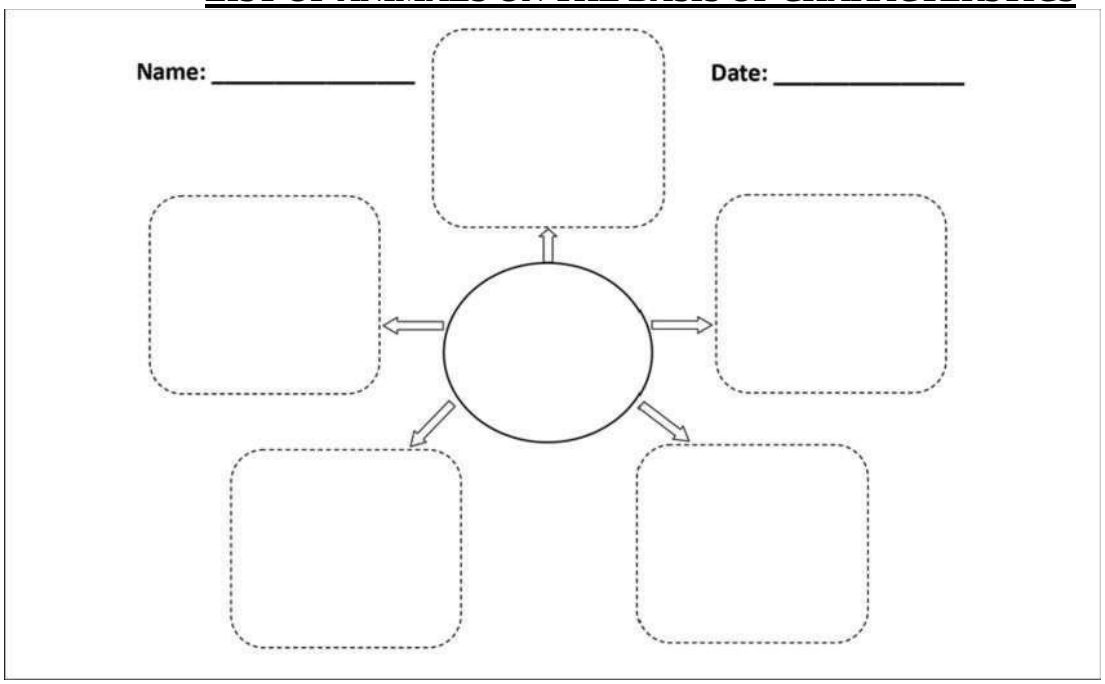
- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q. Following are few things listed below. Place them in respective column on the basis of their characteristics, whether they are invertebrates, insects or worms.
- **LIST OF INSECTS/WORMS**
  Spider, dragonfly, beetle, centipedes, jelly fish, star fish, grasshopper, scorpion, leech, snail.



LIST OF INSECTS ON THE BASIS OF THEIR CHARACTERSTICS



LIST OF ANIMALS ON THE BASIS OF CHARACTERSTICS



Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of invertebrates living in different places.**

- Teacher will ask the students:" see the pictures of animals and birds living in different places and ask them write the places, where these birds/animals live on the basis of their characteristics?
- Teacher will explain the students, invertebrates livings in different places for example big animals lives on land,creeping insects on land,birds who fly in air builds nest and lives in nest,animals live in water.Some animals lives in water,on land makes whole,some animals lives on trees,some lives in jungle
- Teacher will write the names of different animals and will ask the students where they live for example sea horse, lizards, snails. Tiger, shark, frog, toad, sparrow, parrot, eagle, kiwi, penguin, bat, cow, monkey.lion,ants bees,butterfly,bugs.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

INVERTEBRATES/WORMS/INSECTS NAME	WHERE THEY LIVE?

Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using **picture charts of invertebrates, worms and insects**, while working in 05 groups. Group leader will explore their idea in front of class

INSTRUCTIONS FOR ACTIVITY OF EXPLAIN STAGE **A**

- Students will be asked, see the pictures of invertebrates and classify them
- according to their size on the basis of their characteristics.
- Students will discuss with each other, while seeing pictures about invertebrates,
- insects, worms etc.
- Teacher will guide them while working in groups.
- Students will arrange insects, worms and other invertebrates on the basis of
- similarities and differences in one group and subgroup
- Students will write characteristics on the basis of similarities and differences in
- one group and in other group in similar way
- For example, similar groups of animals, worms, insects who have same size their
- name will come in one group
- Group leader will present a work after discussion in groups

PICTURE CHARTS OF INVERTEBRATES, WORMS AND INSECTS

Q. Identify the invertebrate and write its group name and property of invertebrates?

Name of Animal……. Name of Animal-------

Group Name …… Group Name……
Property…… Property……

Q.NO2) Identify the following insects and write their group name and one property?

Name of insect…… Name of insect……
Group Name…… Group Name……
Property…… Property…….

Q.NO3) Identify the following worms and write their group name and one Property?

Name of worm…… Name of worm…… …..

Group Name…….. Group Name……

Property……. Property……

Elaborate

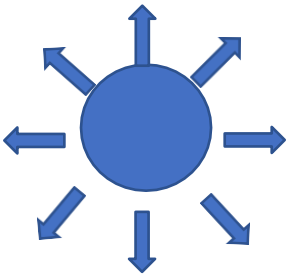
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of classification of invertebrates on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary both for invertebrates and insects, worms to survive.
- Students will discuss with each other about the basic needs of invertebrates, insects, worms in groups for example for invertebrates (worms and insects) food, water, air, normal temperature, sun light, soil required.
- Group leader will discuss with each other and will complete the web sketch after completion present work in front of students

Web Sketch completion for factors necessary of invertebrates (worms and insects)



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Put a tick in front of right statement and cross for wrong statement.

• Invertebrates are similar characteristics are placed in one group.	
• Earthworms make a soil fertile.	
• Invertebrates have a backbone in body.	
• Jelly fish can swim in water.	
• Insects can be differentiated in to three parts .	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. See the picture chart and complete the task of collection of invertebrates, worms and insects from environment/lawns so that no of insects, worms and other invertebrates should be increased in laboratory after collection.

COLLECTION OF INVERTEBRATES, INSECTS, WORMS FROM ENVIROMENT/LAWNS

INVERTEBRATES	**INSECTS**	**WORMS**

LESSON PLAN -6

Activity Title:	Classification and comparison of flowering and non-flowering plants according to their characteristics
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the classification and comparison of flowering and non-flowering plants according to their characteristics
Objectives	Students will be able; 1. To classify the flowering plants according to their characteristics and give example of each group. 2. To compare the flowering and non-flowering plants.

Planning Stages Within the 7-E Inquiry Model

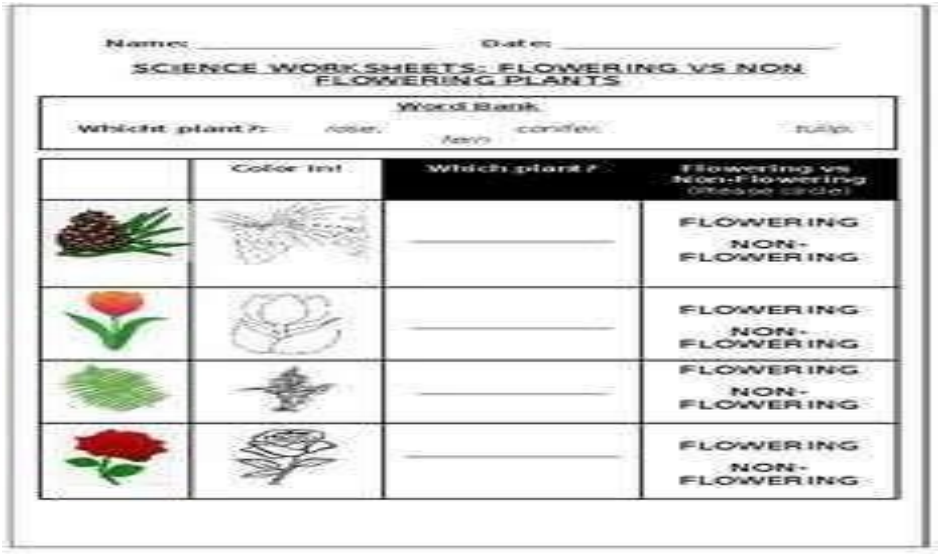
Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange plants present in the surroundings according to their characteristics (Teacher will enlist the PLANTS on the black board/white board

- **LIST OF PLANTS**
- sunflower, rose, moss, ferns, jasmine, pansy, wheat.
- Teacher will ask the students complete the work sheet given below


Name: _____ Date: _____

SCIENCE WORK SHEETS: FLOWERING VS NON FLOWERING PLANTS

Word Bank

Which plant ?: rose, fern, conifer, tulip

	Color in!	Which plant ?	Flowering vs Non-Flowering (Please circle!)
		_____	FLOWERING NON-FLOWERING
		_____	FLOWERING NON-FLOWERING
		_____	FLOWERING NON-FLOWERING
		_____	FLOWERING NON-FLOWERING

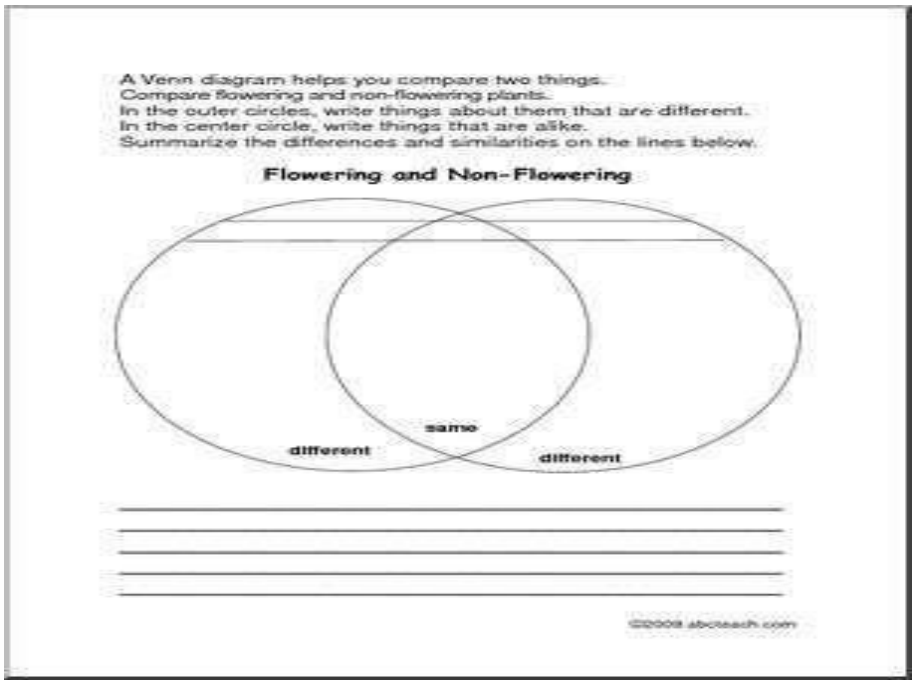
Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Following are few plants listed below. Place them in respective column on the basis of their characteristics, whether they are flowering or non-flowering.
- Wheat, maize, brassica, banana, grasses, white rose, pink rose.

PLANTS ON THE BASIS OF CHARACTERSTICS



Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For example, teacher will ask the students complete the work sheet given below

For this activity teacher will present a **chart** in front of students flowering and non-flowering plants **growing in different places.**

- Teacher will ask the students:" see the pictures of flowering and non-flowering plants growing in different places and ask them write their name and places, where these flowering and non-flowering plants grows on the basis of their characteristics?
- Teacher will explain the students further that flowering and non-flowering plants growth characterstics for example big treesgrows in soil,flowering plants grows in lawns ,non-flowering plants grows in fields.for example,algae,fungi,rose,pea,cabbiage,carrot,redish,peach,mango,oranges,
- lemons,citrus,maize,wheat,grasses etc

- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

FLOWERING/NON-FLOWERING PLANTS NAME	**WHERE THEY GROW?**

Explain

Time Duration 05 minutes;

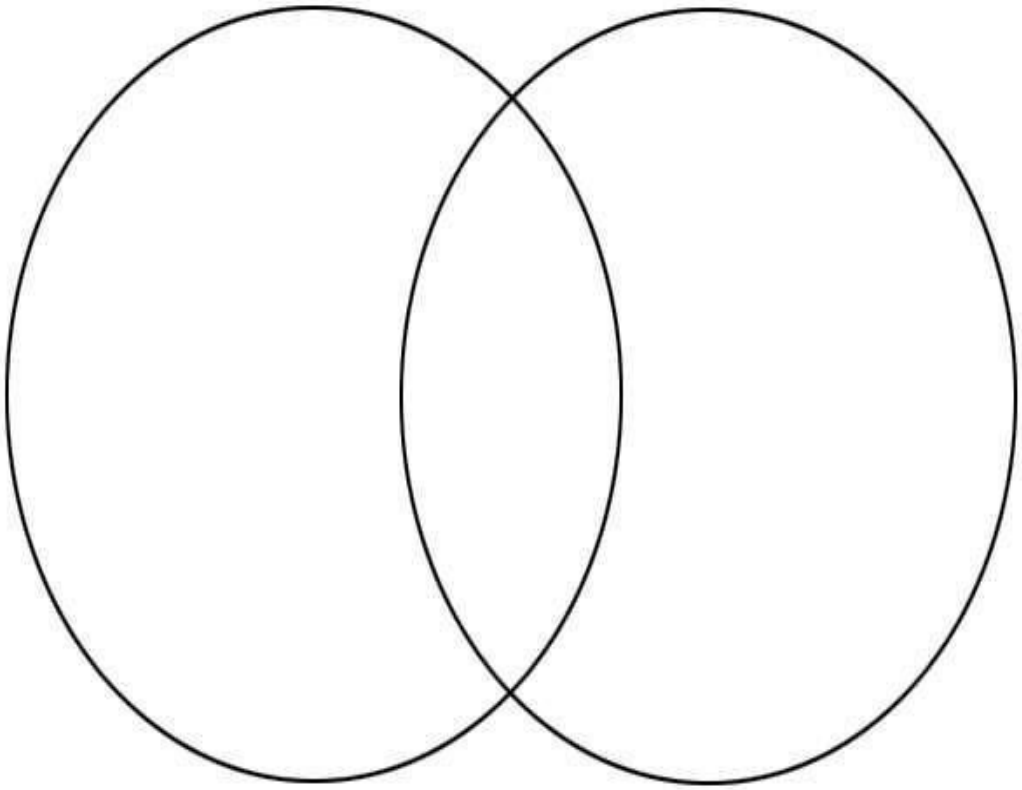
- In this phase students will complete their task by using **venn diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of plants and classify them
- according to their size on the basis of their characteristics.
- Students will discuss with each other, while seeing pictures about tall, short plants, flowering etc.
- Teacher will guide them while working in groups.
- Students will write characteristics on the basis of similarities of plants in middle
- of Vann diagram and characteristics differ will be written on right and left side

VENN DIAGRAM

- Names of plants similar in characters are in middle
- Names of Tall plant size with similar character on right side
- Names of Short plants with similar character on left side



Elaborate

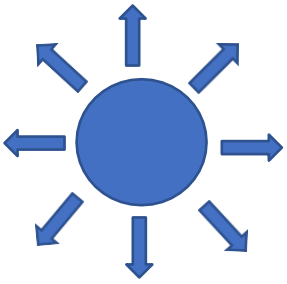
Time Duration; 05 minutes

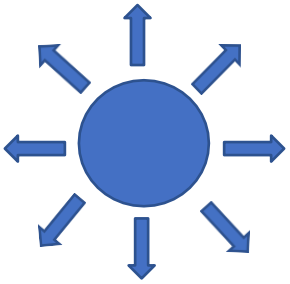
- Teacher will make 05 groups of students and ask to complete the **web sketch** of classification of flowering and non-flowering plants on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students **complete the web sketch** by writing their characteristics necessary both for flowering and non- flowering plants to survive.
- Students will discuss with each other about the basic characteristics of flowering and non-flowering plants in groups for example flowering and non-flowering plants have different characteristics, Flowering plants have flower, seed, leaves while non -flowering plants have no flowers, fruits or well differentiated leaves.
- Group leader will discuss with each other and will complete the web sketch and present work in front of students

Web Sketch completion for writing characteristics (Flowering and non-flowering plants)





Evaluate

Q. Put a tick in front of right statement and cross for wrong statement.

• Flowering plants makes flowers	
• Flowering plants cannot make their food.	
• In flowering plants seed are enclosed in fruit.	
• Non-flowering plants have sexual reproduction	
• Non-flowering plants have well differentiated root, stem, leaves.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context for concept clearance.

INSTRUCTIONS FOR EXTEND PHASE;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Write the basics characteristics of flowering and non-flowering plants on the basis of similarities and differences?

FLOWERING PLANTS BASIC CHARACTERSTICS	**NON-FLOWERING PLANTS BASIC CHARACTERSTICS**

Lesson Plan-7

Activity Title:	Classification of flowering plants according to their characteristics
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the classification and of flowering plants according to their characteristics.
Objectives	Students will be able; 1. To classify the flowering plants according to their characteristics and give example of each group. 2. To compare the monocotyledonous plants and di-cotyledonous plants

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked the following questions?
- What do you mean by classification?
- _____
- Could we do the classification of living things?
- _____
- Could we do the classification of plants?
- _____
- Teacher will point towards each plant and ask them whether they are flowering plants/non-flowering plants. Tick and cross in front of each plant in the table given below.
- for example, sunflower, rose, moss, ferns, jasmine, pansy, wheat. oat, grass.

CLASSIFICATION OF PLANTS

Name of plants They have flowers They have not flowers

- Sun flower
- Rose
- Moss
- Grass
- Oat

- Ferns
- Jasmine
- Pansy

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures charts and discuss with each other and answer the following question after discussion.
- Following are few plants listed below. Place them in respective column on the basis of their characteristics, whether they are monocotyledonous or dicotyledonous plants.
  Maize, oat, rice, wheat, mango, lemon, bean

FLOWERING PLANTS ON THE BASIS OF CHARACTERSTICS

MONOCOTYLEDONOUS PLANTS	DICOTYLEDONOUS PLANTS

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students about flowering plants and its sub groups (monocotyledonous plants and di-cotyledonous plants)

- Teacher will ask the students: "see the pictures of flowering plants and its sub -groups monocotyledonous and dicotyledonous plants living in different places and ask them write the places, where these monocotyledonous and dicotyledonous plants grow on the basis of their characteristics?
- Teacher will make 25 PAIRS; the Students will identify the other places of growth of flowering plants by seeing the pictures will discuss and complete it in pairs

FLOWERING PLANTS NAME	WHERE THEY GROW?

Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using **vann diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activity

Students will be asked, see the pictures of plants and classify them according to their size on the basis of their characteristics.

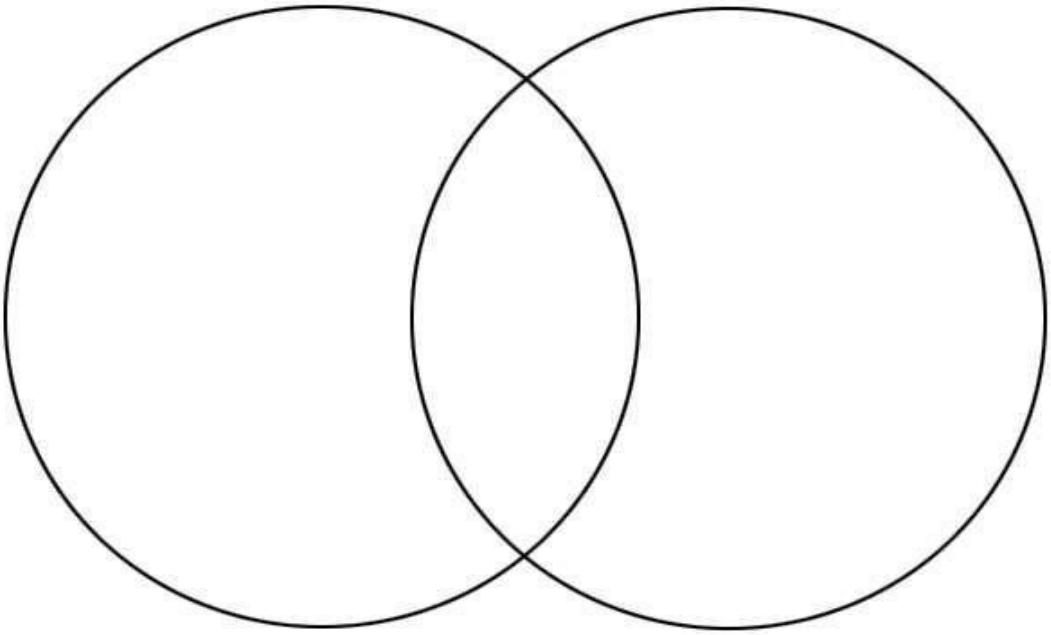
Students will discuss with each other, while seeing pictures about, monocotyledonous plants and dicotyledonous plants etc.

Teacher will guide them while working in groups.

Students will arrange plants on the basis of similarities and differences in Vann Diagram

VENN DIAGRAM

- Names of monocotyledonous plants with similar character on right side
- Names of dicotyledonous plants with similar character on left side



Elaborate

Time Duration; 05 minutes

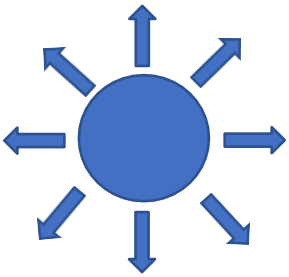
- Teacher will make 05 groups of students and ask to complete the **web sketch** of classification of flowering plants on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary both for flowering plants (monocotyledonous plants and di cotyledon ous) to survive in environment.

- Students will discuss with each other about the basic needs of monocotyledonous and dicotyledonous plants in groups for example for flowering plant's needs (monocotyledonous plants and dicotyledonous plants) food, water, air, normal temperature, sun light required.
- Group leader will discuss with each other and will complete the web sketch after completion and present work in front of students

Web Sketch completion for factors necessary for flowering plants (monocotyledonous plants and Dicotyledonous plants)



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Put a tick in front of right statement and cross for wrong statement.

• Monocotyledonous plants have one vein in leaf	
• Dicotyledonous plants have many veined leaves.	
• Monocotyledonous plants are cereal crops.	
• Monocotyledonous plants have two cotyledons in their seed.	
• Dicotyledonous plants have flowers in plants.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context for student's concept clearance.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**
- Teacher will take the students in school lawn and asked them please see the different plants

Q.NO 1; write down the difference between monocotyledonous plants and dicotyledonous plants on the basis of their different characteristics.

DIFFERENCE BETWEEN MOCOTYLEDONOUS AND DICOTYLEDONOUS PLANTS

MONOCOTYLEDONOUS PLANTS	**DICOTYLEDONOUS PLANTS**

Lesson Plan-8

Activity Title:	Comparisons of monocot and dicot seed
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the comparison between monocot and dicot seeds.
Objectives	Students will be able; 1-To compare the structure of monocot and dicot seed.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Teacher will ask the students that have you ever seen the seeds in fruits for example apple, mango or maize seeds
- Students will give the response Yes/No

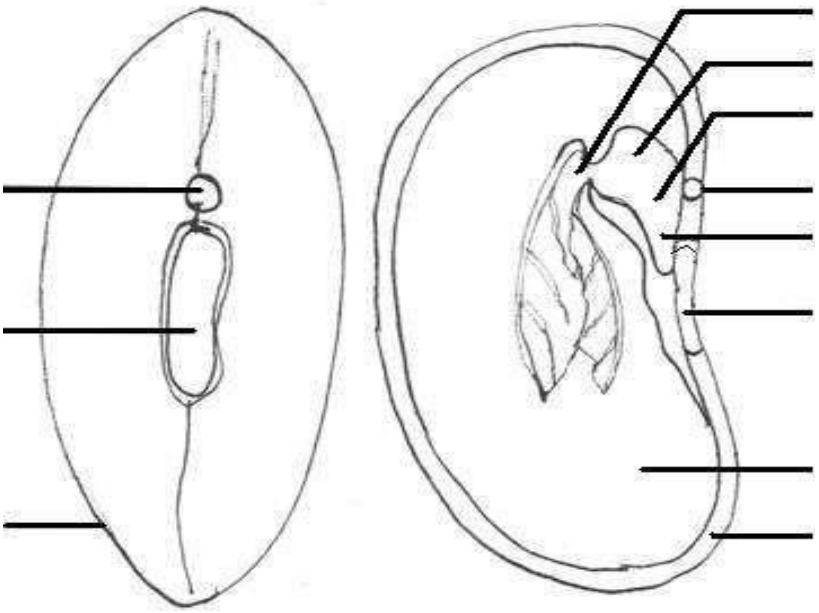
Activity

- Teacher will point towards each seed ask them label these seeds given below and write the name of each seed

Seeds name and labelling of each seed

1 - Seed name _____

2 - Seed name _____



Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will engage the students giving them seeds of different plants in petri dishes.
- Students will observe the different seeds in petri dishes and discuss with each other about their shape, size, colour and whether they are monocot or dicot seeds and will ask the following question
- Q.1. Following are few seeds listed below. Place them in respective column on the basis of their characteristics, whether they have one cotyledon or they have two cotyledons.
  Orange, citrus, peach, maize, oat. red beans seeds.

CLASSIFICATION OF SEEDS

SEEDS HAVE ONE COTYLEDON	SEEDS HAVE TWO COTYLEDONS

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of different seeds growing in different places.**

- Teacher will ask the students:" see the pictures of seeds growing in different places and ask them write the places, where these seeds grows on the basis of their characteristics?

- Teacher will explain in front of students,the plants having one cotyledons they are called monocot seeds and the seeds having two cotyledons they are dicot seeds .For example monocot seeds are maize,rice, wheat, oat and examples of dicot seeds are mango,lemon,gram,peanut,beans and peas.They grows on differenrt places i,e some grows in mud,some grows in warm enviroment,some grows in water,some grows in lands similarly,some grows in deserts,other seeds grows in sand etc.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

SEEDS NAME	WHERE THEY GROWS?

Explain

Time Duration 05 minutes;

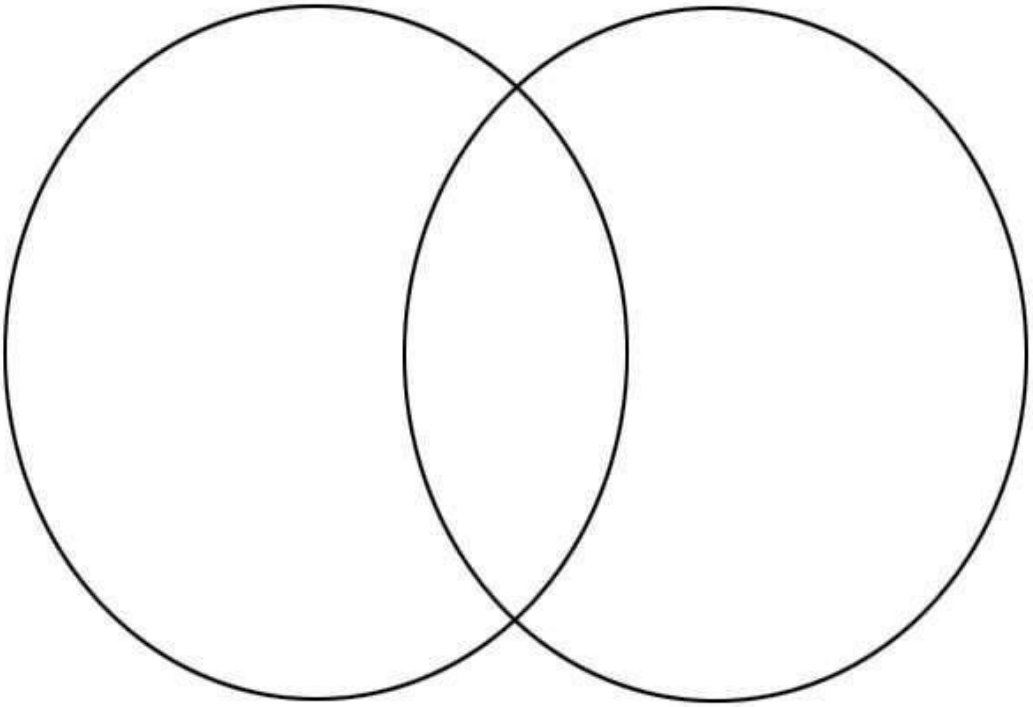
- In this phase students will complete their task by using **venn diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activity

- Students will be asked, see the pictures of seeds and classify them according to
- their size on the basis of their characteristics.
- Students will discuss with each other, while seeing pictures about conical.
- round, and wrinkle seeds etc.
- Teacher will guide them while working in groups.
- Students will arrange seeds on the basis of similarities and differences in Vann Diagram

VENN DIAGRAM

- Names of seed grows in similar environment will come in middle
- Names of conical long size seeds with similar character on right side
- Names of wrinkle and round seeds with similar character on left side



Elaborate

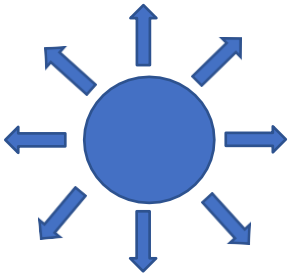
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of monocot and dicot seeds on the basis of their characteristics for further clearance of concept

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary to survive.
- Students will discuss with each other about the basic needs of seeds growth in groups for example food, water, air, normal temperature, sun light required for their growth.
- Group leader will discuss with each other and will complete the web sketch after completion present work in front of students

Web Sketch completion for factors necessary for seeds growth



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Put a tick in front of right statement and cross for wrong statement.

Seeds are similar characteristics are placed in one group.	
• Monocot seeds has one cotyledon.	
• Dicot seeds have more than two cotyledons.	
• All seeds have seed coat.	
• All seeds are kidney shape.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Write the major difference between monocot seeds and dicot seeds in four points after discussion in groups?

MONOCOT SEEDS	DICOT SEEDS

Lesson Plan-9

Activity Title:	Comparison of monocot and dicot leaves in terms of its shape and venation.
Grade /Level /Subject	Grade 5th, General Science

Time	35-40 minutes
Topic/nature of the Investigation	Explain the comparison of monocot and dicot leaves in terms of its shape and venation
Objectives	Students will be able; 1. To compare the structure of a monocot and a dicot leaf in terms of its shape and venation

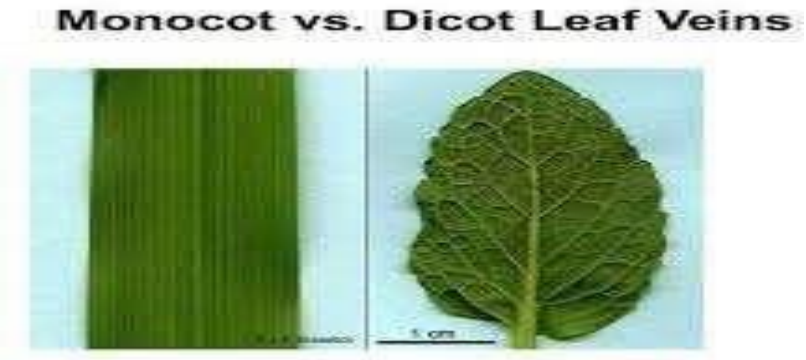
Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the leaves present in the surroundings according to their characteristics. Teacher will enlist the leaves (monocot and dicot) names on the black board/whiteboard.



- Students will arrange the leaves on the basis of their shape, size, colour and structure in respective diagram for example, some plants have net like veins while some have single veins for example grass, brassica campestris leaves.

- Teacher will ask the students that discuss with each other in groups and identify the structure of leaves they are given i,e ,rose ,sunflower ,maize .mango, grass.
- Students will identify the structure of different leaves and identify the leaves in given table

IDENTIFICATION OF LEAVES ON THE BASIS OF THEIR STRUCTURE

Identification of leaves leaves shape leaves vein arrangement

- Rose
- Sunflower
- Maize
- Mango
- Grass

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Following are few monocotyledonous and dicotyledonous leaves listed below. Place them in respective column on the basis of their characteristics, whether they are monocotyledonous or dicotyledonous leaves.
  Maize, oat, rice, wheat, mango, lemon, bean.

MONOCOT AND DICOT LEAVES ON THE BASIS OF CHARACTERSTICS

MONOCOTYLEDONOUS LEAVES	DICOTYLEDONOUS LEAVES

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students about monocot and dicot leaves.

- Teacher will ask the students:" see the pictures of monocot leaves and dicot leaves growing in different places and ask them write the places, where these monocotyledonous and dicotyledonous leaves grows on the basis of their characteristics?
  .
- Teacher will make 25 PAIRS; the Students will identify the places of growth of monocot and dicot leaves by seeing the pictures will discuss and complete it in pairs

FLOWERING PLANTS NAME	WHERE THEY GROW?

Explain

Time Duration 05 minutes;

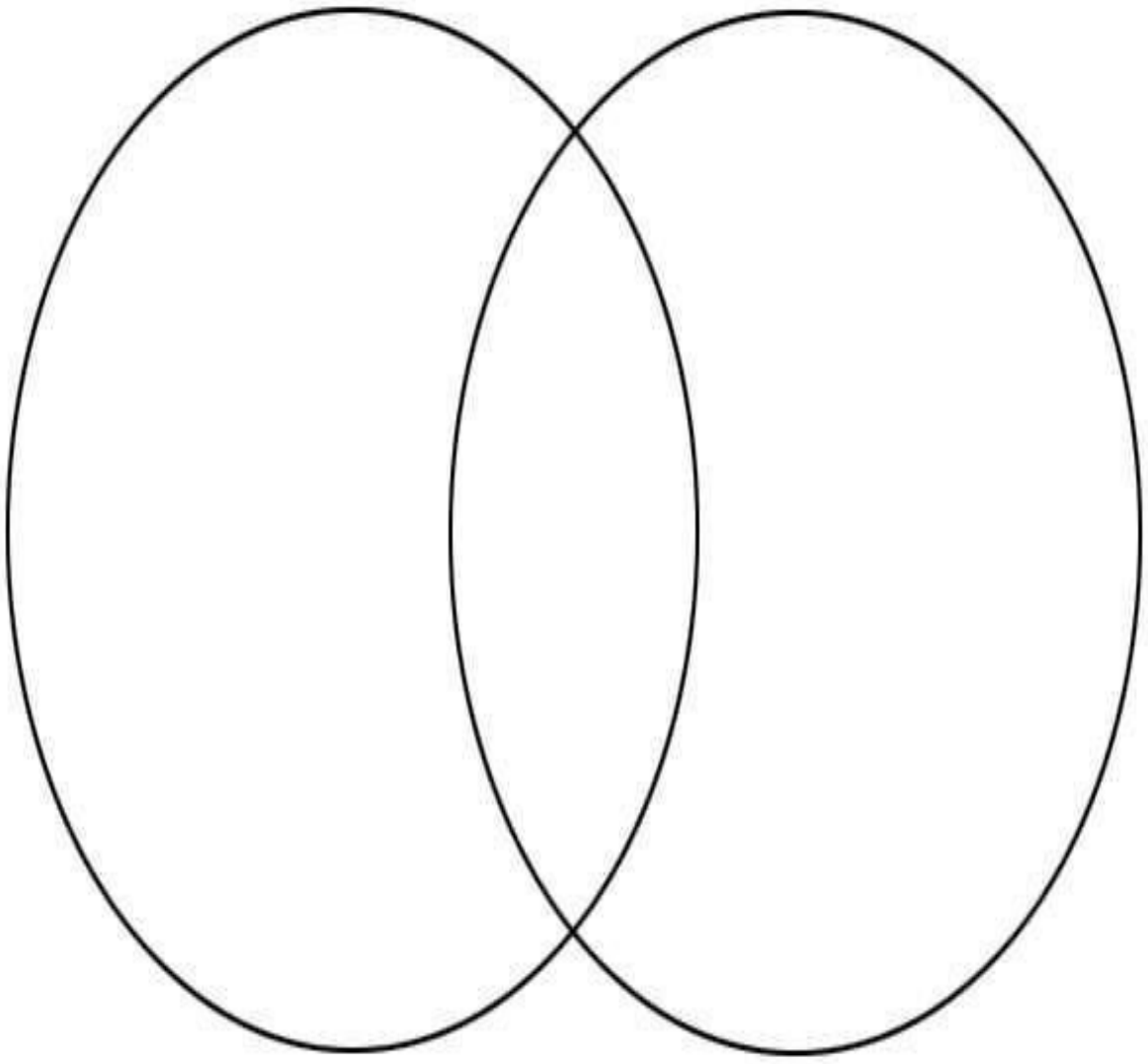
- In this phase students will complete their task by using **venn diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of plants leaves and classify them
- according to their size on the basis of their characteristics.
- Students will discuss with each other, while seeing pictures about,
- monocotyledonous and dicotyledonous leaves etc.
- Teacher will guide them while working in groups.
- Students will arrange plants on the basis of similarities and differences in
- Vann Diagram

VENN DIAGRAM

- Common characteristics of leaves will be written in middle
- Names of monocotyledonous leaves with similar character on right side
- Names of dicotyledonous leaves with similar character on left side



Elaborate

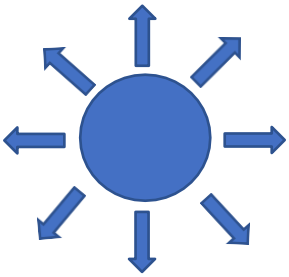
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of monocot and dicot leaves on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary both for monocotyledonous leaves and di cotyledon ous leaves to survive.
- Students will discuss with each other about the basic needs of monocotyledonous and dicotyledonous leaves in groups for example, food, water, air, normal temperature, sun light required.
- Group leader will discuss with each other and will complete the web sketch and after completion group leader will present work in front of students

Web Sketch completion for factors necessary for flowering plants (monocotyledonous plants and Dicotyledonous plants)



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart

Q. Put a tick in front of right statement and cross for wrong statement.

• Monocotyledonous plants have one vein in leaf	
• Dicotyledonous plants have many veined leaves.	
• Monocotyledonous plants are cereal crops.	
• Monocotyledonous plants have two cotyledons in their seed.	
• Dicotyledonous plants have flowers in plants.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context for student's concept clearance.
INSTRUCTIONS;

.

- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**
- Teacher will take the students in school lawn and asked them please see the different plants

Q.NO 1; write down the difference between monocotyledonous plants and dicotyledonous plants on the basis of their different characteristics.

DIFFERENCE BETWEEN MOCOTYLEDONOUS AND DICOTYLEDONOUS PLANTS

MONOCOTYLEDONOUS PLANTS	DICOTYLEDONOUS PLANTS

Lesson Plan-10

Activity Title:	Difference between monocot and dicot flower in terms of number of floral leaves.
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Difference between monocot and dicot flower in terms of number of floral leaves.
Objectives	Students will be able; 1. To differentiate the structure of a monocot and dicot flower in term of number of floral leaves

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the plants present in the surroundings according to their characteristics of floral leaves and flowers.

- FLOWERING PLANTS WITHFLORAL LEAVES (DI-COT)
- 
- FLOWERING PLANTS WITH FLORAL LEAVES(MONOCOT)
- Students will arrange the flowering /nonflowering plants on the basis of their shape, size, colour and structure in respective columns for example, sunflower, rose, moss, ferns, jasmine, pansy, pea, orange, brassica campestris.

CLASSIFICATION OF FLOWERING AND NON-FLOWERING PLANTS

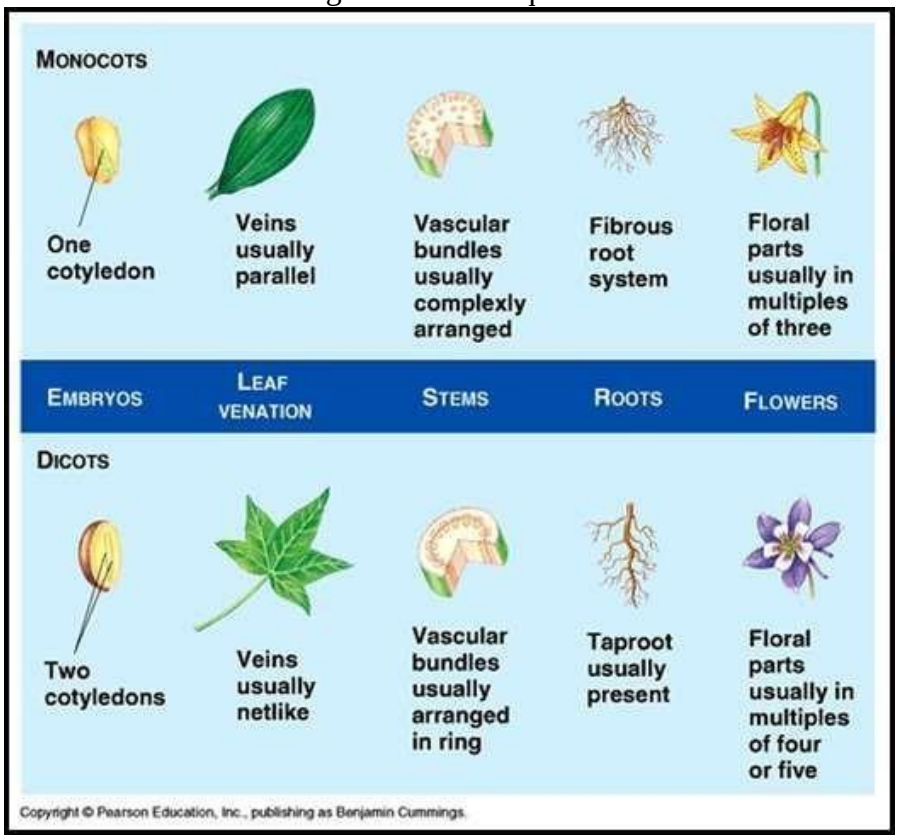
FLOWERING PLANTS	**NON-FLOWERING PLANTS**

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.



- Following are few flowering and non-flowering plants listed below. Place them in respective column on the basis of their characteristics, whether they are monocotyledonous or dicotyledonous flowers.
  Rose ,pansy, jasmine sun flower, mango, lemon.

CLASSIFICATION OF FLOWERS ON THE BASIS OF CHARACTERSTICS

MONOCOT FLOWERS	DICOT FLOWERS

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students about monocot and dicot flowers and in terms of number of floral leaves and whorls in flowers.

- Teacher will ask the students:" see the pictures of monocot flowers and dicot flowers growing in different places and floral leaves of mono cot and dicot plants and ask them write the places, where these flowers grows on the basis of their characteristics?
- Teacher will further explore that the flowering plants whether they are monocot or dicot their differenciation occurs due to their whorls in flowers and in floral leaves,In monocot flowers no well differentiated whorls of petals/sepals are seen and in monocot leaf veins are parallel,narrow and pointed while in dicot flowers well differentiated sepals and petals are seen and could be counted in terms of number of floral formula,further more in dicot leaf,veins startfrom centre,thick midrib and make a net work in leaf
- Teacher will make 25 PAIRS; the Students will identify the places of growth of monocot and dicot flowers of floral leaves by seeing the pictures will discuss and complete it in pairs

FLOWERING PLANTS NAME	WHERE THEY GROW?

Explain

Time Duration 05 minutes;

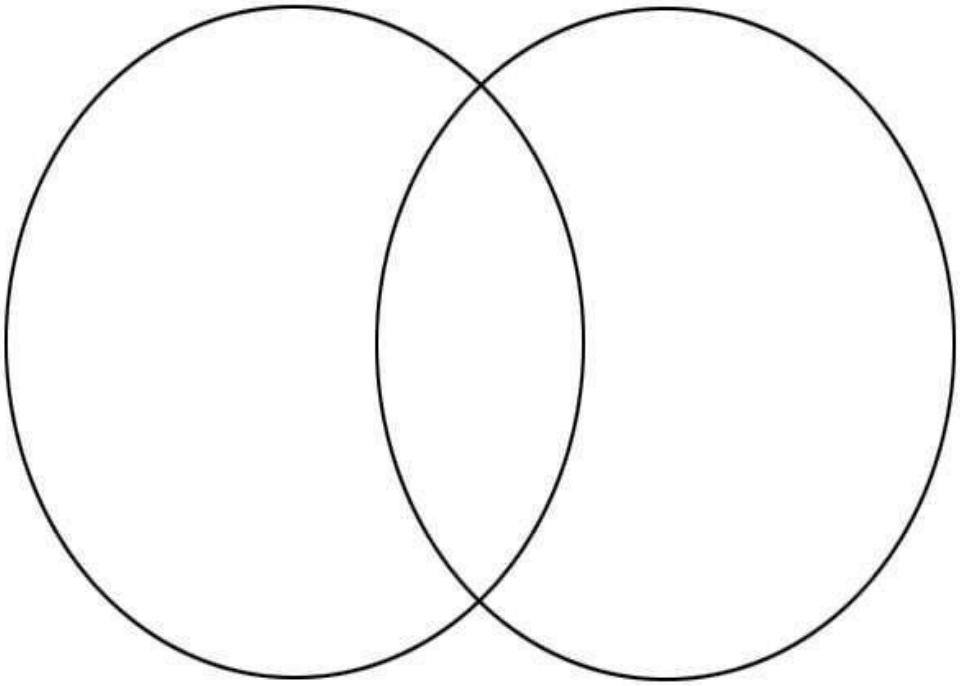
- In this phase students will complete their task by using **vann diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activity

- Students will be asked, see the pictures of floral leaves in flowers and classify them
- according to their characteristics.
- Students will discuss with each other, while seeing pictures about,
- monocotyledonous and dicotyledonous floral leaves of flowers
- Teacher will give rose floral leaves and grass floral leaves in each pair in original
- form and ask the students to see their floral leaves differences,students will be
- observed and write the palces where they grows?How they look like.?
- Teacher will further explin in front of students that herbs and shrubs are quiet
- Different form diccot floral leaves,Herbs and shrubs are mono cot and their floral leaves could not be well differentiated.
- Teacher will guide them while working in groups.
- Students will arrange plants on the basis of similarities and differences in
- Vann Diagram

VENN DIAGRAM

- Common characteristics of floral leaves will be written in middle
- Names of monocotyledonous floral leaves flowers with similar character on right side
- Names of dicotyledonous floral leaves flowers with similar character on left side



Elaborate

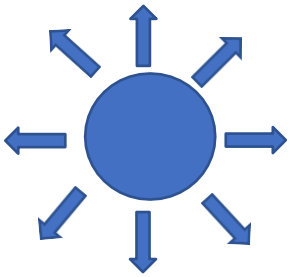
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of monocot and dicot floral leaves on the basis of their characteristics for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary both for monocotyledonous floral leaves and di cotyledon ous floral leaves to survive.
- Students will discuss with each other about the basic needs of monocotyledonous and dicotyledonous floral leaves in groups for example, food, water, air, normal temperature, sun light required.
- Group leader will discuss with each other and will complete the web sketch and after completion group leader will present work in front of students

Web Sketch completion for factors necessary for floral leaves flowering plants (monocotyledonous plants and Dicotyledonous plants)



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. Put a tick in front of right statement and cross for wrong statement.

• Monocotyledonous floral leave plants have one midrib in leaf	
• Dicotyledonous floral leave has many midribs in leaves.	
• Monocotyledonous floral leaves plants are cereal crops.	
• Monocotyledonous plants leaf veins are not parallel.	
• The flower of monocot has three floral parts or multiple of these numbers.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context for student's concept clearance.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**
- Teacher will take the students in school lawn and asked them please see the different plants

Q. write down the difference between monocotyledonous plants and dicotyledonous plants on the basis of their different characteristics.

DIFFERENCE BETWEEN MOCOTYLEDONOUS AND DICOTYLEDONOUS PLANTS

MONOCOTYLEDONOUS PLANTS	DICOTYLEDONOUS PLANTS

Lesson Plan-11

Activity Title:	Identification of key characterstics of worms and insects
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Identify the key characteristics of worms and insects
Objectives	1-To identify key characteristics of worms and insects

Planning Stages Within the 7-E Inquiry Model

Elicit

Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

In this stage teacher will asked the students about two main groups of animals i.e vertebrates and invertebrates

- Teacher will then ask the students about subgroups of invertebrates i.e worms and insects.
- Q.1.Which kind of insects and worms do you see in yours surroundings?
  Ans: _____
- Q.2. Write the names of different insects?
  Ans: _____
- Q.3. Write the names of different worms?
  Ans: _____
- Q4. write the names of insects and worms individually in the following coloumn.

Ans: 1:_____

2:_____

3:_____

4:_____

5:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will make 5 groups of students .
- Teacher will show chart of insects and worms e.g.earthworm , cockroach,ant,housefly,butterfly,leech,tapeworm,hookworm,spider
- Teacher will ask students disscuss chart in groups.

- **Q.1. Identify few worms from chart?**

  Ans: _____

  _____

  _____

- **Q.2. Identify few insects from chart?**

  Ans: _____

  _____

- _____

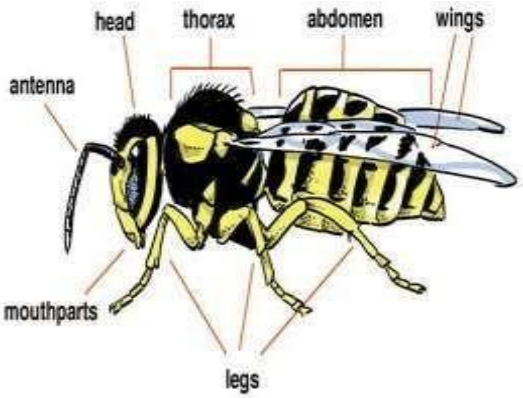
Explore

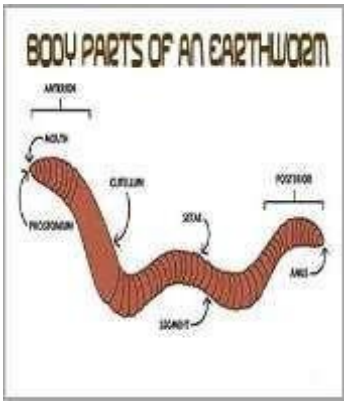
Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart**

- Teacher will ask the students see the above pictures and observe the body parts of insects and worms..
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs





Q1: Wirte the names of body parts of insect ?

Answer:_____

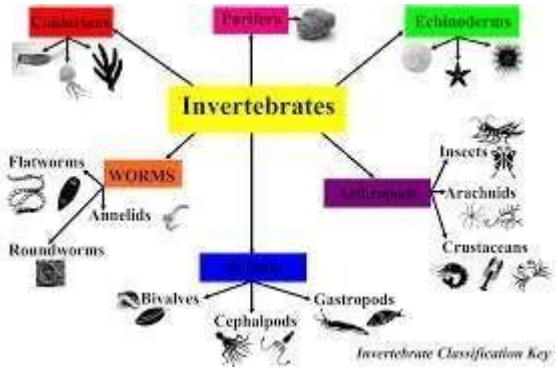
Q2: Wirte the names of body parts of worm ?

Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain two main types of animals i.e vertebrates and invertebrates.
- Teacher will then exaplain two subgruops of invertebrates e.g insects and worms.
- Teacher will tell difference between worms and insects.
- Teacher will discuss structure of insects and worms.



Q.1. Define insects?

Answer:_____

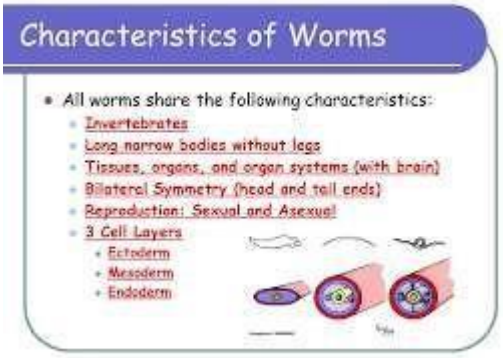
Q.2. Define worms?

Answer:_____

Elaborate

Time Duration; 05 minutes

- Teacher will show chart of characteristics of insects and worms
- Teacher will tell useful and harmfull effects of worms and insects.
- Teacher will make 05 groups of students and ask to complete the column by writing characteristics of worms and insects separetly.



Q1:Write characteristics of insects and worms in given coloumn.

CHARACTERISTICS OF INSECTS	CHARACTERESTICS OF WORMS

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by again observing the picture charts individually.
- Students will remind the difference between worms and insects.

Q.1 WHAT IS MAIN DIFFERENCES BETWEEN WORMS AND INSECTS.

Insects	**worms**
1:_____	**1:**_____
2:_____	**2:**_____
3:_____	**3:**_____

Extend
Time Duration ;05 minutes Individual work will be given to students to complete their task individually in new context for further concept development. INSTRUCTIONS; • Students will be asked to complete their task by using given table activities. • Students will do their work individually. • Teacher will assess the students that how much they have learnt during the lesson. • **Q1: Write three names of insects and worms?** **Insects** **worms** **1:**_____ **1:**_____ **2:**_____ **2:**_____ **3:**_____ **3:**_____

Lesson Plan-12

Activity Title:	Identification of vertebrates and invertebrates
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Vertebrates and invertebrates in the surrounding
Objectives	1-To identify vertebrates and invertebrates in the surrounding

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

In this stage teacher will ask the students about two main groups of animals i.e vertebrates and invertebrates.

- Teacher will then ask the students about subgroups of animals.
- Q1: Which kind of animals do you see around you?
  Answer:_____
- Q2: Into how many groups animals are classified on the basis or absence of presence of backbone?
  Answer:_____
- Q3: What is the difference between the skeleton of a fish and a butterfly?
  Answer:_____
- Teacher will also ask the students write the names of the animals with backbone and the animals without backbone.

Animals with backbone	**Animals without backbone**

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will make 5 groups of students .
- Teacher will show picture chart to the students and ask the students to complete the given task.

Q1: Identify vertebrates and invertebrates from the above pictures and write in the box?

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a picture chart of different animals to the students and ask them to identify different types of animals in the picture chart.

- Teacher will ask the students, see the pictures and observe that into how many catagories animals are classified.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Activity:

Choose **five animals** from the list below. Write the animal's name, whether it is a vertebrate or invertebrate, and two important traits in the spreadsheet. An example has been provided for you.

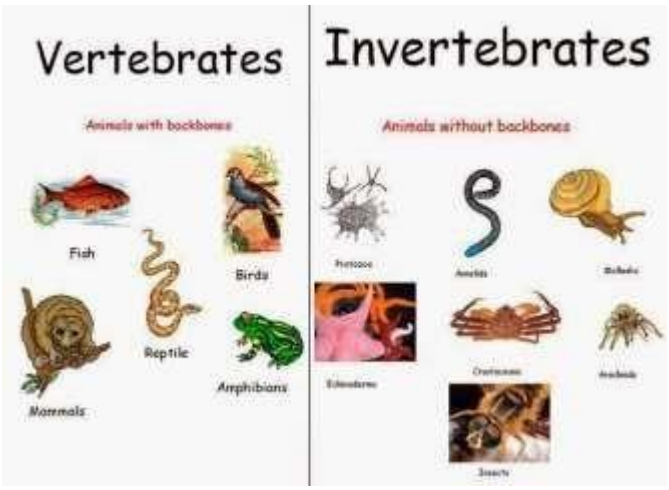
Scorpion Fox Octopus Snail ~~Rabbit~~ Wolf Deer
T-Rex Spider Fish Jellyfish Turtle Beetle Hawk

Animal	Vertebrate / Invertebrate	Two important traits
Rabbit	Vertebrate	1. A rabbit has long ears. 2. A rabbit is a mammal.

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain that animals are classified into two main categories on the basis of presence or absence of vertebral comlumn.
- Teacher will define that vertebrates have a skeletal structure with a spinal column or backbone.
- Teacher will then give some examples of vertebrates e.g humans, birds, and snakes etc.
- Teacher will then define invertebrates that invertebrates have no backbone.
- Teacher will give some examples of invertebrates that ant,housefly,butterfly,snail etc are some examples of invertebrates.



Q1: Write down three examples of vertebrates and invertrebates?

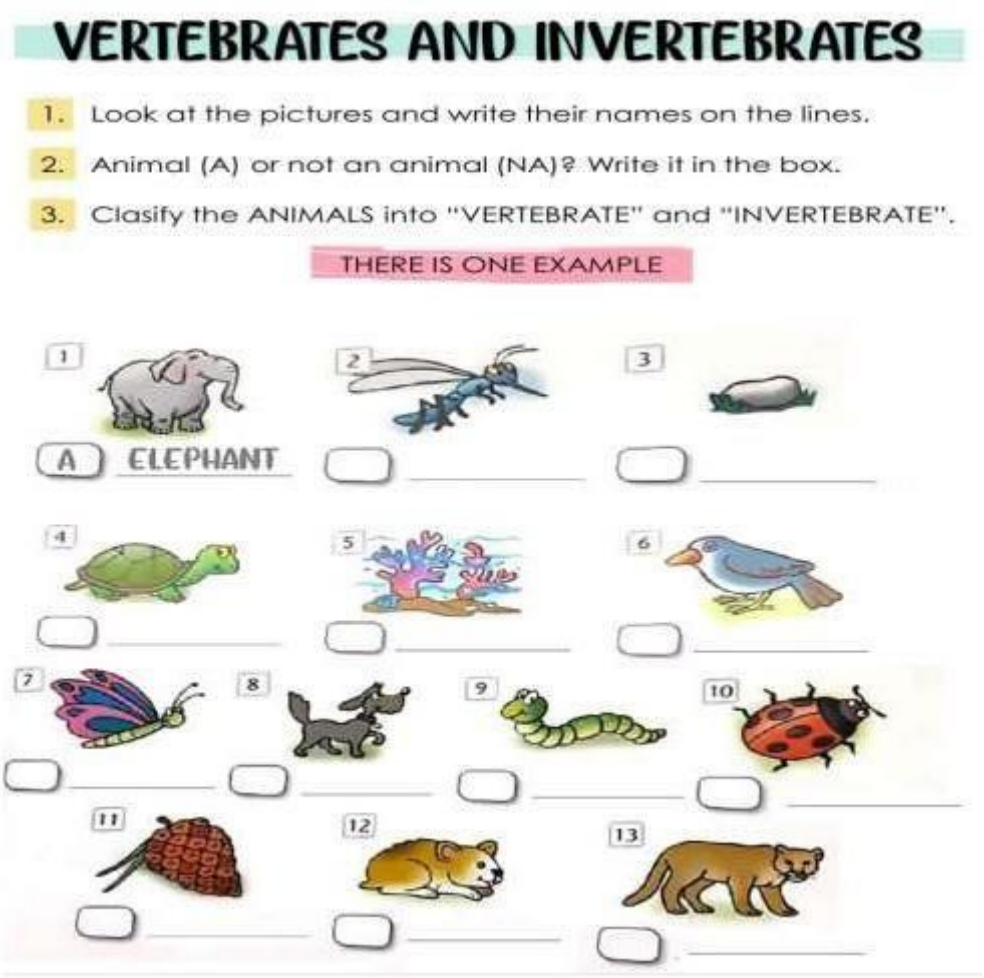
Vertebrates	Invertebrates
1: _____	1:_____
2: _____	2:_____
3: _____	3:_____

Elaborate

Time Duration; 05 minutes

- Teacher will show picture chart of animals and identify vertebrates and invertebrates from the chart.
- Teacher will make 5 groups of the students,teacher will guide the students while working in the group.
- Teacher will ask the students to separate vertebrates and invertebrates from the picture given below.
- Group leader will present the work infront of whole class.

Activity:



Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by again observing the picture charts individually.
- Teacher will ask the students to complete the table given below.

Q1: Write the examples of five vertebrates and invertebrates from your surroundings?

Vertebrates	Invertebrates

Extend

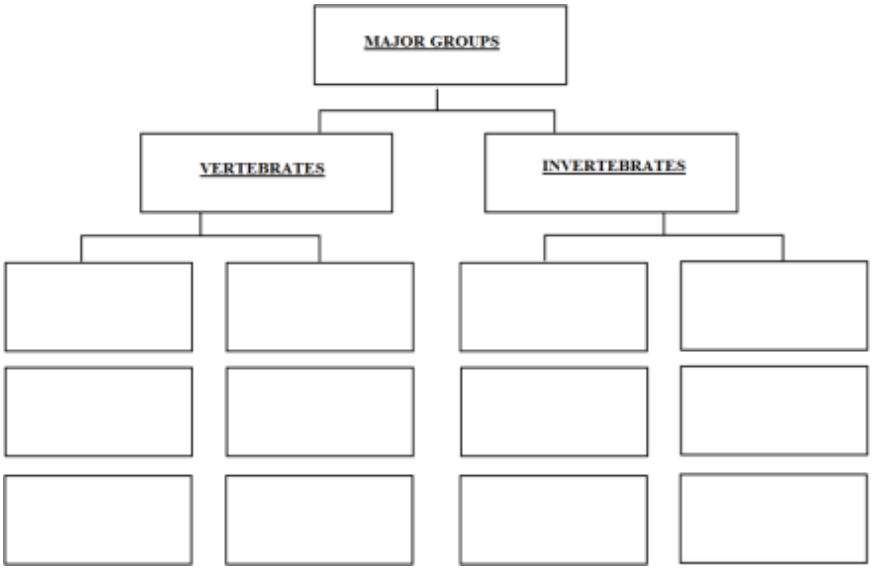
Time Duration ;05 minutes

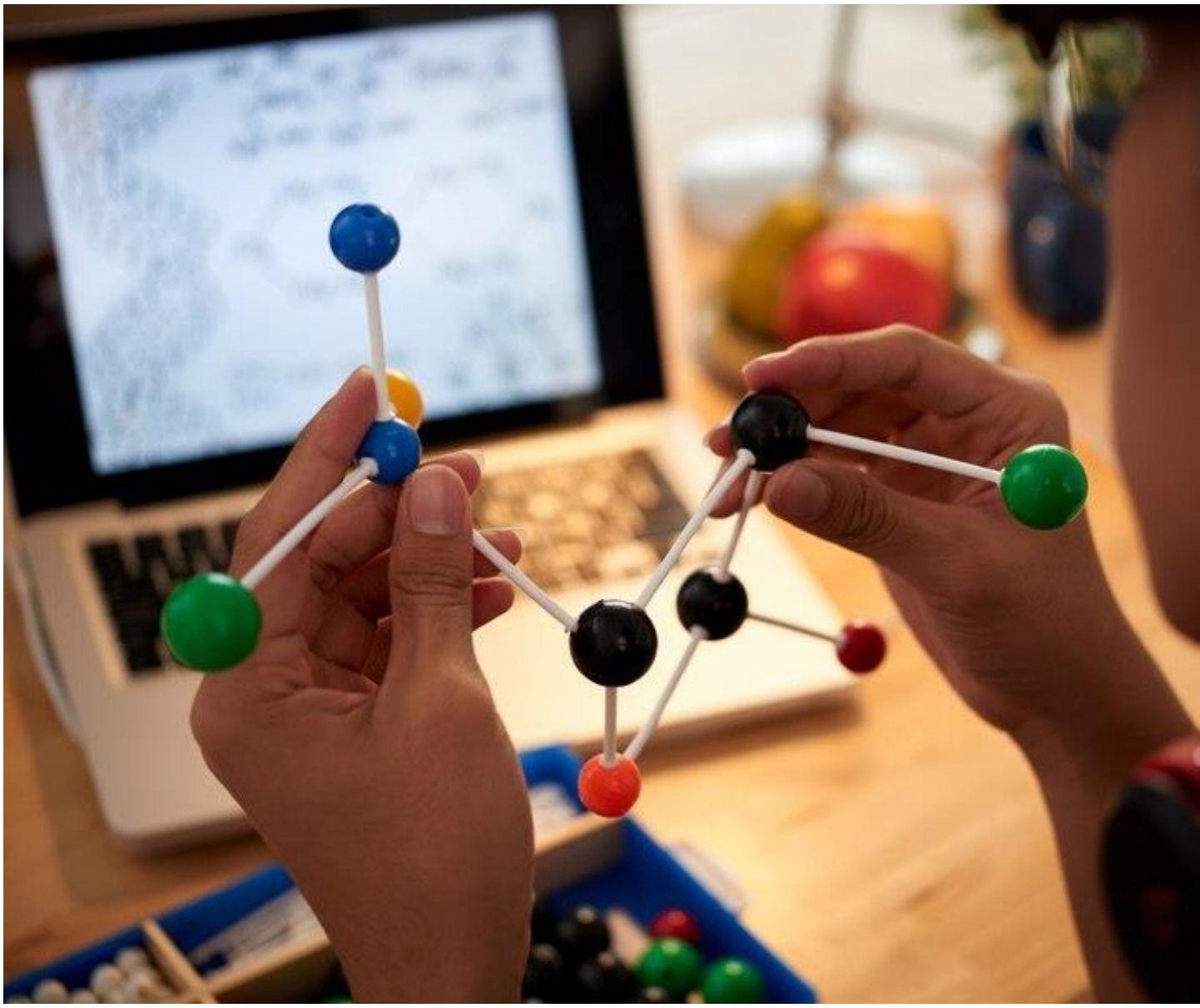
Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Q1: Write three examples of vertebrates and invertebrates from your surrounding?

Graphic organizer





Science Lesson Plan-1

Activity Title:	Introduction of microorganisms
Grade/Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Introduction of microorganism
Objectives	Students will be able; 1. To define the microorganism. 2. To explain about microorganisms

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- For this activity group work will be given to students to complete the task, Students will work in five groups.
- Ask students to look up in a dictionary the meaning of the words:

- Micro, organism, yeast, germ, virus, bacteria, mould, fungi, algae, microbe, microbiologist, nucleus, parasite, viral, decomposer. –

- Teacher will write the above words on black board/white board and ask the students enlist the words on chart too.
- Students will enlist the words on chart
- Dictionaries will be provided to students in groups, students will search the words and discuss with each other in groups and write the meaning of each word and fill the columns listed below

Use of dictionary for difficult words of microorganisms

WORDS	MEANING

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teachers will place the dry grass in petri dish with water and prepare a culture of grass (for growing a culture of microorganisms) and will observe it after one week under microscope.
- Teacher will prepare a slide by taking one drop of this grown culture and cover it with coverslip.
- Teacher will ask the students observe it under microscope in 05 groups
- Students will be observed it under microscope and make a list of microorganisms after discussion in groups. Groups leader will present a work.

- Q. Make a list of those microorganisms you have to observed under microscope?

List of microorganisms

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of microorganisms living in different habitat.**

- Teacher will ask the students:" see the pictures of microorganisms living in different habitat and ask them write the places, where these microorganisms live?
- Teacher will ask the students; make a list of those microorganisims who live in similar habitat?
- Students will identify the other places of habitat of microorganisims by seeing the pictures
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

MICROORGANISIMS NAME	WHERE THEY LIVE?

Explain

Time Duration 05 minutes;

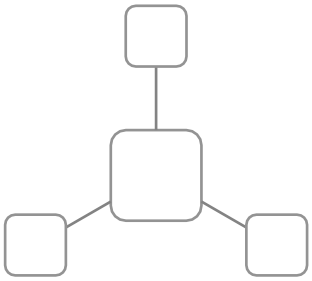
- In this phase students will complete their task by using **graphic organizer**, while
- working in 05 groups. Group leader will explore their idea in front of class

Activity

- **Students will be asked, see the pictures of microorganisms and classify them according to their size shape and color.**
- **Students will discuss with each other, while seeing pictures whether they are working in groups etc.**
- **Teacher will guide them while working in groups.**
- **Students will arrange microorganisms in graphic organizers**

Further, teacher will guide the students by giving them example, teacher will ask arrange the name of things that are microorganisms in graphic organizer

.

Students will be asked, see the pictures of microorganisms describe them according to their size, shape and color Students will discuss with each other, while seeing pictures about virus bacteria, fungi. Teacher will guide them while working in groups. Students will arrange microorganisms	Graphic organizer for microorganisms . 

in graphic organizers Teacher will ask them, the things which we cannot see with necked eyes called microorganisms In graphic organizer students will arrange the microorganisms s after discussion in groups. Students will arrange microorganisms according to their size, shape and color.	

Elaborate

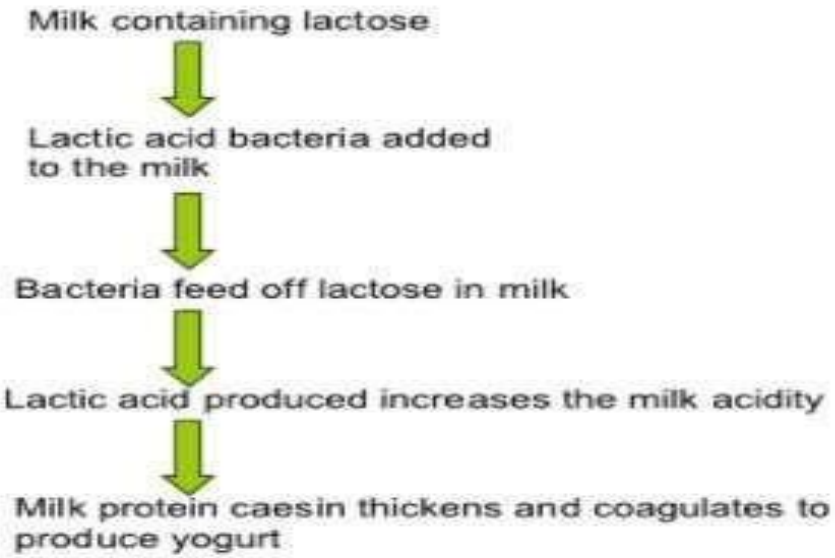
Time Duration; 05 minutes

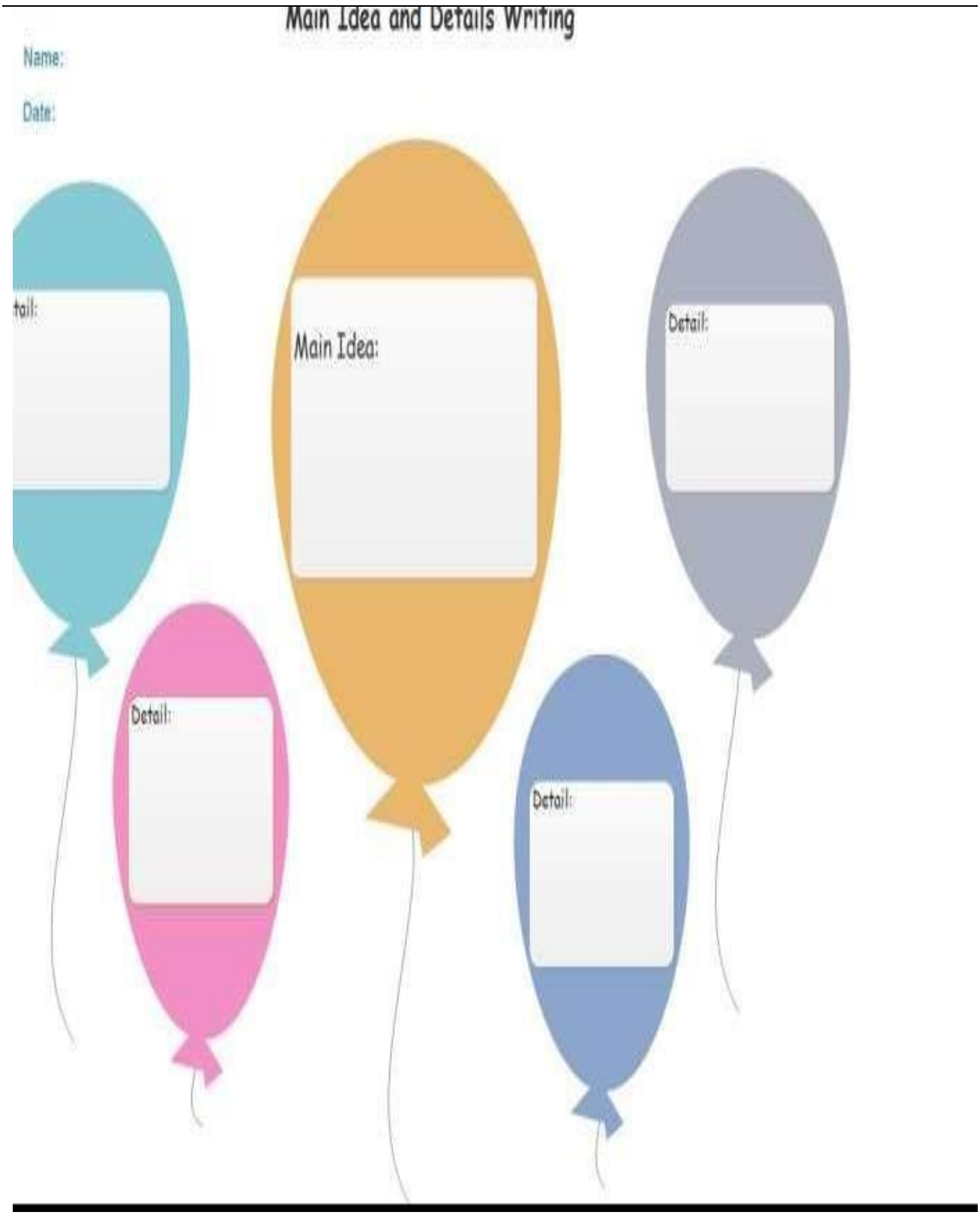
- Teacher will make 05 groups of students and ask to complete the column of balloon graphic organizer related to microorganisms for further clearance of concepts.

Activity:

- Teacher will take **another balloon graphic organizer** of bacterial microorganisms and ask the students; See the pictures of charts and write about how bacteria helpful for making yogurt in table given below for example teacher will present the name of the microorganism who is helpful for making yogurt, in front of students. The names are given below; i.e. worm milk is helpful for making yogurt as one spoon of already yogurt added in front of students and asked them to wait for 25-40 minutes certain bacteria helpful for making yogurt. In this process lactic acid is added to milk. Bacteria feed or grow in milk due to lactic acid, bacteria feed on lactose milk, lactic acid produced milk acidity and milk proteins thicken and coagulates to produce yogurt
- Students will observe the pictures present on charts in form of flowsheet writing and discuss with each other in groups (making yogurt) and complete the balloon graphic organizer after discussion in groups.All steps based on tactile learning strategies;

Making yogurt



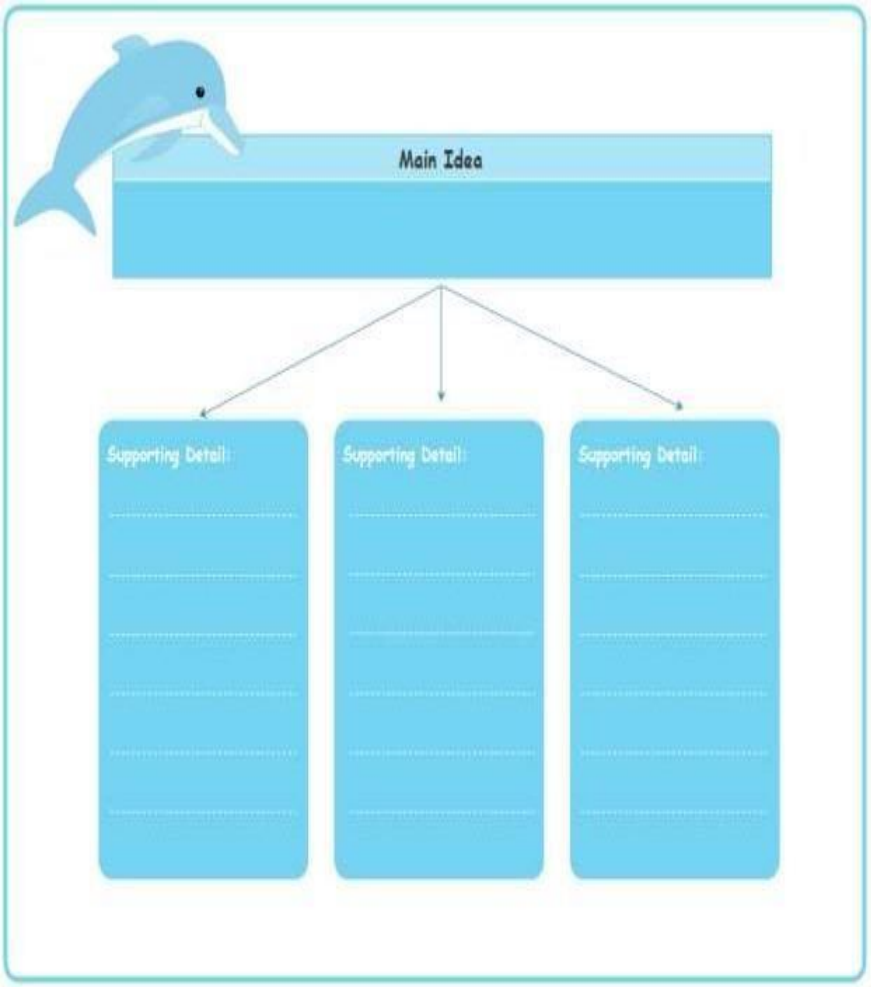

Main Idea and Details Writing
Name:
Date:
tail:
Main Idea:
Detail:
Detail:
Detail:

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task in dolphin web sketch.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually based on tactile learning strategies. Students will remind the things and explained in tables provided individually.
- Teacher will write the names of different microorganisms for example, bacteria, virus and fungi and will ask to students to classify the microorganisms and write detail of each microorganism and complete task in given table below individually in dolphin web sketch.



Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities.

Students will remind the things, discuss in groups and explained in tables provided them in groups.

- Teacher will write the names of different types of microorganisms for example, influenza, blight in tomato, citrus canker, rotten peach, human mouth infected by bacteria, rust and smut diseases in cereal crops, ring worms and will ask to students to classify the microorganisms and complete task in given table below in groups.
- Q.1. Arrange the microorganisms according to their groups?

List of microorganism's arrangements in groups

Virus	**Bacteria**	**Fungi**

Lesson Plan-2

Activity Title:	Identification of main groups of microorganisms with examples
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the identification of main groups of microorganisms with examples
Objectives	Students will be able; 1. To identify the main groups of microorganisms. 2. To explain the examples of microorganisms

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to see the picture chart of microorganisms present in the surroundings according to their examples

- Teacher will point towards each microorganism ask them where these microorganisms will be placed in the table according to their examples. for example, teacher will ask enlist the names of microorganisms which you see in your surroundings. i.e. spherical, rod shaped and tadpole shaped virus, round, rod, spiral shaped bacteria, blight in tomato, citrus canker, rotten peach in fungi
- Students will arrange the microorganisms on the basis of their shape, size, color and structure in respective columns.

Identification of microorganisms

Virus	Bacteria	fungi

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q. Following are few microorganisms listed below. Place them in respective column on the basis of their characteristics, whether they are virus, bacteria, fungi.
- Arrange the following in to groups for example, influenza, chickenpox, curd, butter, Rhizopus mold, black spots on wheat bread. Peach leaf curl, blight in tomato, mouth of horse infected by bacteria, chicken pox

MICROORGANISIMS ON THE BASIS OF IDENTIFICATION OF CHARACTERSTICS

Virus	Bacteria	Fungi

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of microorganism's identification.**

- Teacher will ask the students:" see the pictures of microorganisms and after seeing their pictures identify them and ask them write the places, where these microorganisms live/stay on the basis of their characteristics?
- Teacher will explore the students further about microorganisims and ask them to place microorganisims in their respective column for example citrus canker cused by fungii,viruses lives on human bodies,red rot in sugar cane,toothache caused by bacteria .Peach leaf curl due to certain disease.Bread stale due to fungi(rizopus moulds in fungi), someviruses destroy stem,leavesand roots of plants,blight in tomato cauesd by bacteria,mushrooms(umbrella-like fungi) can be seen growing on the heaps of dung,log of tree,garbage.
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

MICROORGANISIMS NAME	WHERE THEY LIVE/STAY?

Explain

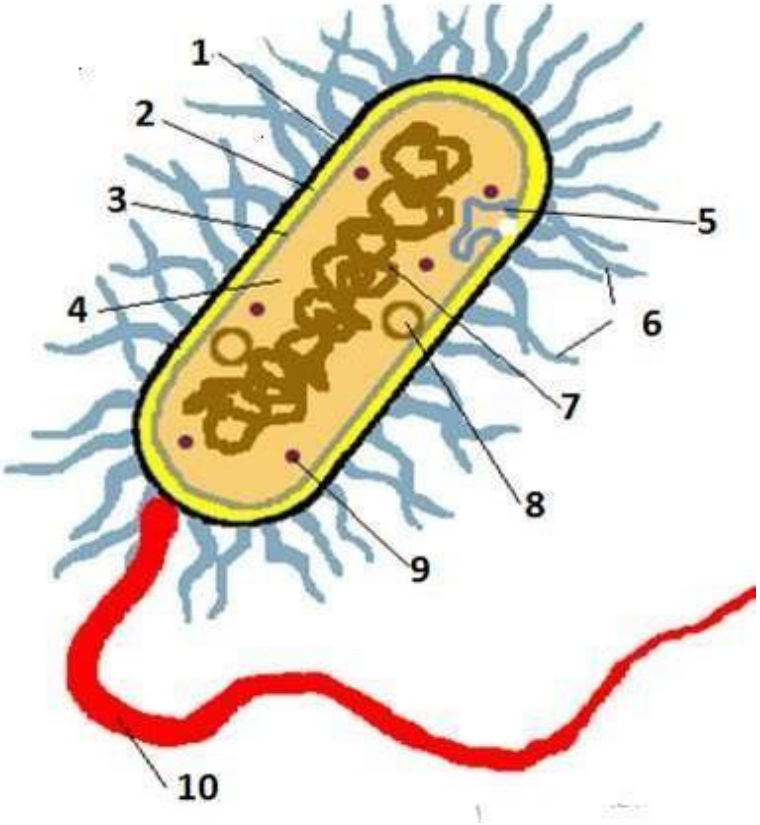
Time Duration 05 minutes;

- In this phase students will complete their task by using **Labelling of Diagram**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of bacteria and label them according to
- their size on the basis of their shape and size.
- Students will discuss with each other, while seeing picture of, bacteria.
- Teacher will guide them while working in groups.
- Students will discuss with each other and label the diagram after discussion with
- each other in 05 groups. Group leader will present their work in front of class

Labelling the diagram of bacteria



Elaborate

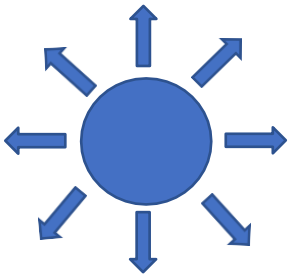
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of microorganisms on the basis of their explanation for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing factors necessary for microorganisms to survive.
- Students will discuss with each other about the basic needs of microorganisms in groups for example for example microorganisms (virus, bacteria &fungi) food, water, air, normal temperature, sun light, moist places, marshy places, atmospheric effect, inside of human's body growth required.
- Group leader will discuss with each other and will complete the web sketch after completion present work in front of students

Web Sketch completion for factors necessary of microorganism's growth



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart
- Q.1; Put a tick in front of right statement and cross for wrong statement.

• Microorganisms are those that cannot be seen through necked eyes.	
• Bacteria are often seen through microscope.	
• Viral diseases are those disease that can be controlled.	
• Microorganisms can be divided in to three basic groups.	
• Chicken pox is a disease.	

Extend

Time Duration ;05 minutes

Group work will be given to students to complete their task in new context for extending their ideas.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities in groups.
- Students will be reminding things/discuss and explained in tables provided work in groups.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table after discussion in groups and group leader will present this activity in front of class**.**

Q.1; Write down two main characteristics of microorganisms for further explanations about it and give example of each.

• Bacteria.	**1)** **2)** **Examples**
• Fungi	**1)** **2)** **Examples**
• Virus	**1)** **2)** **Examples**

Lesson plan 3

Activity Title:	Advantages and disadvantages of microorganisms
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Describe the advantages and disadvantages of microorganisms.
Objectives	Students will be able; 1. To describe the advantages and disadvantages of microorganisms

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to see the picture chart of microorganisms according to their harmful infection, diseases caused by viruses, bacteria and fungi
- Teacher will point towards each microorganism ask them how beneficial or harmful effects of microorganisms? for example, teacher will ask and write about these microorganisms i.e. some causes infection, some are beneficial, some are harmful
- Infection is defined as the process by which a germ enters the body, divides to increase its number and in result causes diseases.
- Many bacteria and fungi are responsible for the spoilage of food.
- Typhoid, pneumonia, sore throat are examples of the diseases caused by bacteria.
- Flu, chicken pox, hepatitis and AIDS are caused by viruses. Fungi are responsible for many diseases like ringworm and athletes' foot.
- The disease-causing microorganisms are called germs.
- Germs can enter our bodies through mouth, nose and wounded skin.
- Viruses causes influenza, measles, chicken pox, polio, hepatitis, aids
- Some bacteria convert milk in to yogurt
- Some bacteria convert sugar syrup in to alcohol
- Some bacteria are also helpful for making pickle

- Fungi recycle dead plants and animals in to chemical nutrients in to carbon and nitrogen that are released back in to soil, air and water. These materials are again used for growing plants.
- Students will write the characteristics and harmful effects of microorganisms on charts and after discussion will present in front of students.

Characteristics and harmful effects of microorganisms

Characteristics of microorganisms	Harmful effects of microorganisms

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q. Following are few harmful and use ful effects of microorganisms,
- Enlist them in their respective column Bread molds (when we pack the bread for some days in polythene bags, it becomes infected with molds.
- In a similar way when we place a milk outside from refrigerator in summer. It will be contaminated and its taste will be change as bacteria grows in it, Therefore, further more polluted water is more dangerous for health. Some bacteria are helpful for making yogurt from milk, some bacteria are helpful for making gee from butter.

Harmful and useful effects of microorganisms

Useful effects of microorganisms	Harmful effects of microorganisms

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **of different microorganisms have a different advantage.**

- Teacher will ask the students:" see the pictures of advantages of microorganisms
- A microorganism is a living thing that is too small to be seen with the naked eye. Examples of microorganisms include bacteria, virus, algae, protozoa, and microscopic animals such as the dust mite and some are beneficial for us.

- Q.1 Make a list of those microorganisims who have a different advantages and where they grow?
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Information			
Microorganisms name			
Where they grow?			
Advantages			

Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using **Key points**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

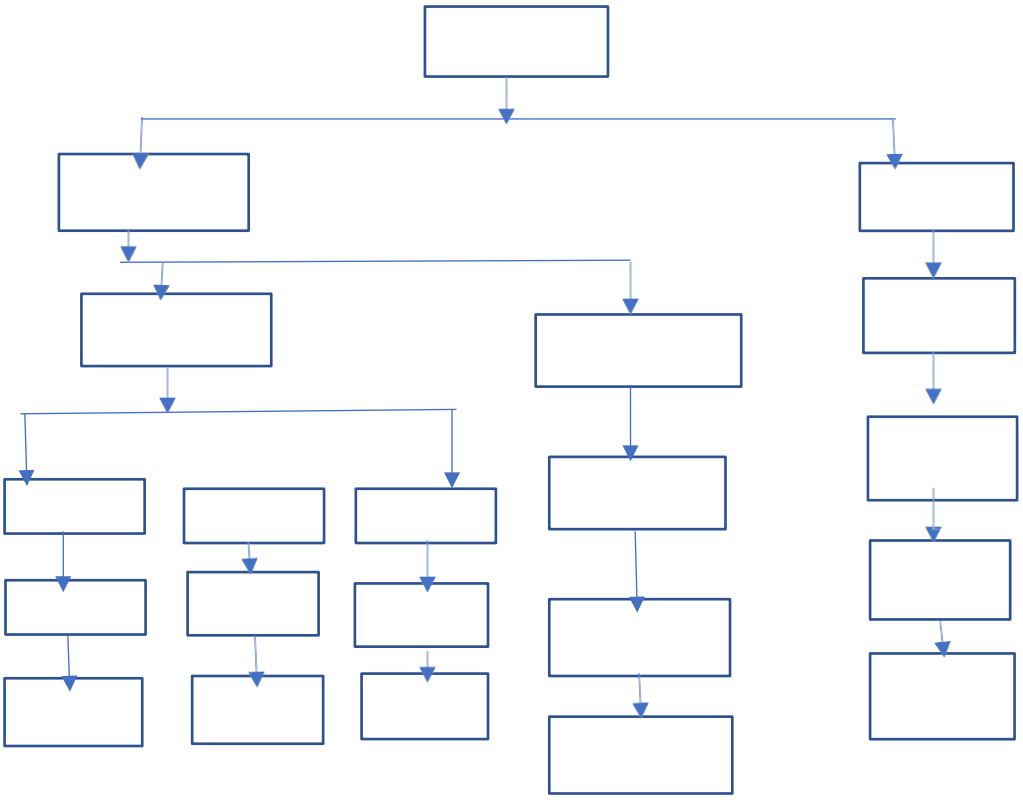
- Students will be asked, see the pictures of microorganisms and write
- their advantages and disadvantages of bacteria and fungi.
- Teacher will guide them while working in groups
- Students will be asked, see the pictures of microorganisms and ask them to
- Arrange microorganisms according to their key characteristics on the basis of
- bacteria and fungi (advantages and disadvantages).
- Students will discuss with each other on the basis of their key characteristics,
- while seeing pictures about all microorganisms for example
- **ADVANTAGES AND DIS-ADVANTAGES OF BACTERIA**
- Bacteria convert sugar syrup in to alcohol. Bacteria also help in making pickle. Bacteria cause many
- diseases for example cholera, typhoid, dysentery. Harmful bacteria spoil our food,
- spilt milk and causes many diseases, blight in tomato, citrus canker, rotten peach
- , bacteria affected horse, human mouth affected by bacteria

ADVANTAGES AND DIS ADVANTAGES OF FUNGI

- Fungi plays important role in recycling, they recycle the dead plants and animals in nitrogen that are released back in to soil, air and water. These materials are again
- used by growing plants,
- Yeast are microscopic fungus which raises dough in the flour, it is used in baking
- industry on a large scale. Due to the yeast, the flour decomposes and its bread
- easily be digested
- Fungi cause diseases of rust and smut in plants in wheat and maize.
- In humans, ring worm and athlete's foot are common fungal infection
- Teacher will guide them while working in groups.
- **Students will arrange microorganisms on the basis of their key characteristics i**
- **key points after discussion**
- Students will write the name of microorganisms at the end

- Then Similar way, STUDENT will write at the end of key points of the characteristics. when students will tell their group leader after discussion in groups
- **Group leader will present** their work in front of class

KEY POINTS OF EACH MICROORGANISIMS



Elaborate

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will write the statements of advantages and disadvantages of microorganisms on right side of column and students will do tick and cross in front **of** each statement and complete task in given table below individually.

STATEMENTS	Tick	Cross
• Viruses cause many diseases such as influenza, chicken-pox, polio.		
• Bacteria are not very small organisms		
• The word virus derived from Latin word venom which means poisonous fluid		
• Blight in tomato is caused by fungi		
• Fungi is diverse group of organisms		
• Green mold appears on stale bread is fungal infection		
• Viruses can not be seen through electron microscope		
• Viruses may be spherical, rod-shaped or tadepoleshaped		
• Bacteria are present in water, air, soil, food and hot spring		
• Bacteria cause citrus canker		
• Yeast used in baking bread and food		

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the things and explained in tables provided individually.

- Teacher will draw the table on board and ask the students to write the advantages and dis advantages of microorganisms individually and ask the students to complete the given task.
- Q.1.Write the advantages and disadvantages of microorganisms in three lines(Virus,Bacteria,Fungi).

Advantages of microorganisms	Disadvantages of microorganisms

Lesson Plan-4

Activity Title:	Infection of microorganisms
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Microorganisms and their infections
Objectives	1. To define infection 2. Identify ways by which microorganisms can enter in the human body

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
In this stage teacher will ask the students why do we fall ill,what is the reason behind our illness.

- Q.1. What causes you to cough and sneeze?
  Ans: _____
- Q.2. Why you get sore throat when there is dryness in the weather?
  Ans: _____
- Q.3. Why do you have dandruff in the hair?
  Ans: _____
- Q.4. What happens when you eat rotten fruits and vegetables?
  Ans: _____
- Q.5. What happens when you drink contaminated water,tell the name of some diseases which are causes by drinking contaminated or dirty water?
  Ans: _____
- Students will tell the name of some diseases caused by drinking contaminated water and teacher will write on the board.

Q1: Tell the name of few water borne diseases?

1:_____
2:_____
3:_____
4:_____
5:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will make 2 groups of students .
- **Group A:** Student will select one student and ask him to pretend to be infected by a disease.
- Teacher will ask the student to squeeze on the other participant hand while shaking hands.
- Teacher will ask the students what happens when a flue infected person will shake hand to the healthier one.
- **Group B:** Teacher will select a student from second group and then ask him to pretend to be infected by viral disease i.e cough , Influenza
- Teacher will ask the student to cough infront of students,teacher will then ask the students what happen when you cough infront of a healthier person.
- Teacher will then ask the students to answer the question No 1.

- **Q1: What happens when students who is infected with influenza and cough doing action infront of other students?**
  Answer:_____

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students that

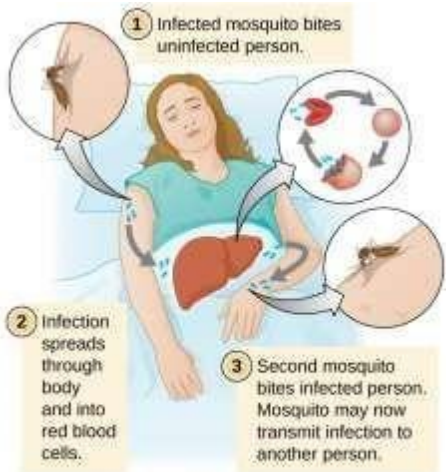
Q. How microorganisms spread disease in the human body?

Ans: _____

_____

- Teacher will ask the students see the below pictures and observe the spread of diseases in the human body.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

(a)



(b)

Q1: How do we get Malaria?
Answer:_____
Q2: What are the symptoms of Malaria in above picture?
Answer: _____

Explain

Time Duration 05 minutes;

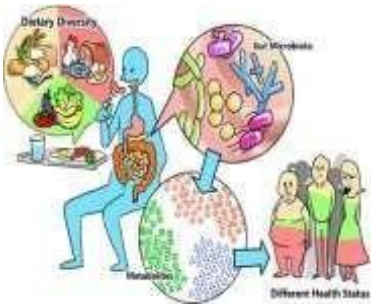
- In this phase teacher will define and explain infection
- Infection is a condition in which a disease causing microorganism enters the body of an organism and start growing there.
- Teacher will then exaplain that many diseases are caused by the growth of these microorganisms in the body and we named it as infection.
- For example malaria is an infectious disease caused by the infection of mosquito.Similarly many water borne and air borne disease like cholera,dysentery,fever,breathing problems,diarroeha etc are also caused by the growth of microorganisms in the body.
- The ways through which the microorganisms enter in our body for example that microorganisms enter in our body through our mouth,eyes and nose.
- Define infection and give three examples of infectious diseases?
  Answer:1. _____
  2._____
  3._____

Q1: Define infection?
Answer:_____

Elaborate

Time Duration; 05 minutes
INSTRUCTIONS;
Teacher will complete the given task in group work activity.

- Teacher will show picture chart of infection to the students and ask them to observe the infections in given picture.
- Teacher will make 05 groups of students and ask to complete the column by writing definition of infection and the ways by which microorganisms enter in the human body.
  Observation of infections in given picture:

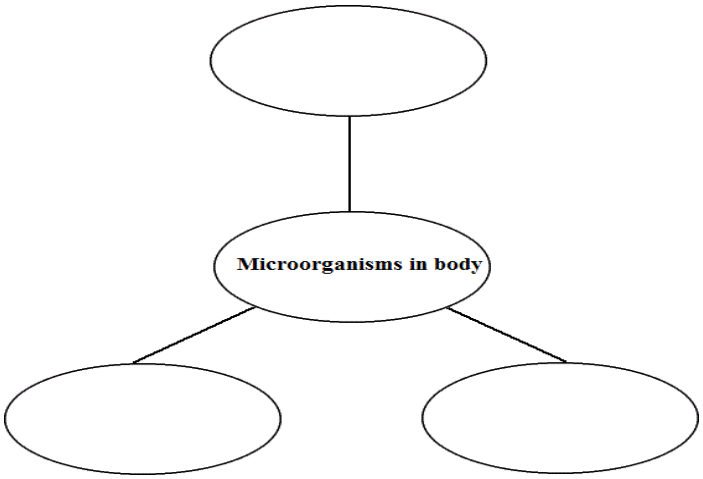


Q1:How microorganisms enter in the human body?
Answer:_____

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by again observing the picture charts individually.
- Students will remind the ways through which microorganisms enter the human body and will answer the given questions.



Extend

Time Duration ;05 minutes
Individual work will be given to students to complete their task individually in new context for further concept development.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities .
- Students will do their work individually.
- How much they have learnt during the lesson about infection.
- **Q1: Write three ways through which microorganisms enter in our body?**

1:_____
2:_____
3:_____

Lesson Plan-5

Activity Title:	Ways to avoid Infection of microorganisms
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Ways to avoid infection of microorganism
Objectives	3. To suggest ways to avoid infection

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- In this stage teacher will ask the students how does diseases spread. Students will answer the question and teacher will note the important points and write it on the board.
- Q.1. Why should we use mask and wear gloves?
  Ans: _____
- Q.2. Why it is necessary to cover your mouth with hand while sneezing and coughing?
  Ans: _____
- Q.3. Why we should wash our hand before every meal?
  Ans: _____
- Q.4. Why we should wash fruits and vegetables before eating them.
  Ans: _____

Q1: Why we should cover the meal?
Answer:_____

Engage

Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the groups and perform the activity.
- Teacher will take soap,senitizer,mask and detol.
- Group 1: Teacher will ask one group of the student to wash your hand properly with soap.
- Group 2: Teacher will ask another group of students to senitize their hands.
- Group 3: Teacher will then ask third group to wash your hand and apply detol on them.

- Teacher will also do the same steps along with the students.

Activity

- What happened when we donot wash our hands before eating the meal,after attending the toilet and when we donnot keep ourselves clean?
  Ans: _____

Q.2: Why we should wash our hands before eating?
Answer:_____

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students that how we can prevent the spread of germs.

- Teacher will ask the students see the above pictures and observe that how germs can be prevented from spreading out.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Q1:What shoul we do while coughing or sneezing?

Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the ways to avoid infection
- Teacher will explain that infection can be avoided by observing cleanliness.
- Observing islamic virtues of:

1. Washing hands before and after the meal
2. Wahing hands after attending the toilet
3. Brushing teeth
4. Taking regular bath
5. Keeping edibles covered.
6. Keeping homes clean and tidy.

Q1: When we should wash our hands?
Answer:_____

Elaborate

Time Duration; 05 minutes
Teacher will show picture chart to the students and ask them to observe that what are the ways to avoid infection.

- Teacher will make 05 groups of students and ask to complete the column by writing definition of infection.

Q1: Why we shoul wash our hand and brush the teeth before and after eating the meal?
Answer:_____

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

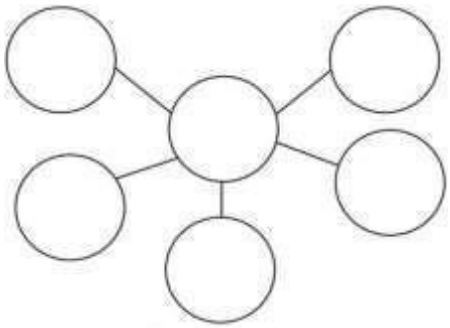
- Students will be asked to complete their task by again observing the picture charts individually.

Q1:Why we should wash the fruits before eating them?
Answer:_____

Extend

Time Duration ;05 minutes
Individual work will be given to students to complete their task individually in new context for further concept development.
INSTRUCTIONS;

- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Q1:Write the ways to avoid infection in the graphic organizer given below?
  Graphic organizer:



Lesson Plan-6

Activity Title:	Infection of microorganisms
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Ways to avoid infection of microorganism
Objectives	Students will be able; 4. To suggest ways to avoid infection

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
In this stage teacher will ask the students how does diseases spread.

- Teacher will then ask the students why should we use mask and wear gloves.
- Teacher will ask the students why it is necessary to cover your mouth with hand while sneezing and coughing.
- Teacher will then ask the students why we should wash our hand before every meal.
- Why we should wash fruits and vegetables before eating them.
- Students will answer the question and teacher will note the important points and write it on the board.All activities based on tactile learning strategies.

Q1: Why we should cover the meal?
Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the groups and perform the activity.
- Teacher will take soap,senitizer,mask and detol.
- Teacher will ask one group of the student to wash your hand properly with soap.
- Teacher will ask another group of students to senitize their hands.
- Teacher will then ask third group to wash your hand and apply detol on them.
- Teacher will also do the same steps along with the students.
- Teacher will ask the students what happened when we donot wash our hands before eating the meal,after attending the toilet and when we donnot keep ourselves clean?
- Teacher will then ask the students to answer the question No 1.

Q1: Why we should wash our hands before eating?
Answer:_____

Explore
Time Duration 05 minutes;
INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE; For this activity teacher will present a **chart** in front of students that how we can prevent the spread of germs. • Teacher will ask the students see the above pictures and observe that how germs can be prevented from spreading out. • Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Q1:What shoul we do while coughing or sneezing?

Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the ways to avoid infection
- Teacher will explain that infection can be avoided by observing cleanliness.
- Observing islamic virtues of:

7. Washing hands before and after the meal
8. Wahing hands after attending the toilet
9. Brushing teeth
10. Taking regular bath
11. Keeping edibles covered.
12. Keeping homes clean and tidy.

Q1: When we should wash our hands?
Answer:_____

Elaborate

Time Duration; 05 minutes
Teacher will show picture chart to the students and ask them to observe that what are the ways to avoid infection.

- Teacher will make 05 groups of students and ask to complete the column by writing definition of infection.

Q1: Why we shoul wash our hand and brush the teeth before and after eating the meal?
Answer:_____

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

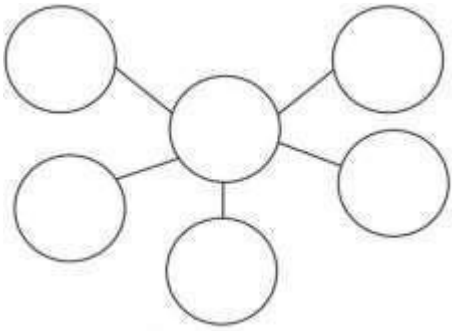
- Students will be asked to complete their task by again observing the picture charts individually.

Q1:Why we should wash the fruits before eating them?
Answer:_____

Extend

Time Duration ;05 minutes
Individual work will be given to students to complete their task individually in new context for further concept development.
INSTRUCTIONS;

- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Q1:Write the ways to avoid infection in the graphic organizer given below?
  Graphic organizer:



Khyber Pakhtookhwa Text Book Board Peshawar

General Science

Lesson Plan Manual

Teacher's Mannual
Grade : 5th, Chapter No. 3

Lesson Planing
7-E Learning Model

Lesson Plan-1

Activity Title:	Structure and function of French bean and maize seeds
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Structure and function of French bean and maize seeds
Objectives	1-To identify the structure and function of maize seed and French bean.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- In this phase,students will be asked the questions related to the prior knowledge.

Activity:

- Teacher will ask the students that what do you think all seeds are of same shape,size and colour or different?
- Teacher will then ask the students that why is the seed important for the plants?
- Students will answer the questions,teacher will write the points on the board.
- **Importance of seed for the plants:**_____

_____

Engage

- Time Duration; 05 minutes
- INSTRUCTIONS FOR ACTIVITY OF ENGAGE STAGE;
- For this activity teacher will present a chart in front of students for the structure of different seeds.
- Teacher will ask the students:" see the pictures of seeds with different structures like maize,rice,pea,gram,almond,millet,wheat,bean,corn.oat,barley,mango,french bean,,peach,apricort,plumb, seeds etc
- Teacher will ask the students; to identify the seeds with different structures e.g round seeds,oval seeds,elongated seeds,kidney shaped seeds etc.
- Students will identify the other places of seeds by seeing the pictures.
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Q:Identify the round,oval and elongated seeds from the picture above and write in the column?

Round seeds	Oval seeds	Elongated seeds

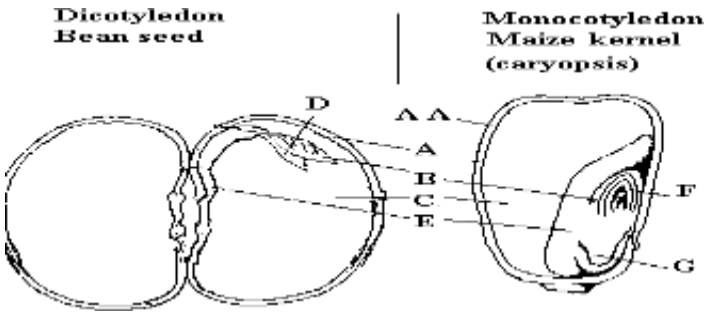
Explore

Time Duration 05 minutes;

Students will be asked, see the pictures of FRENCH BEAN AND MAIZE seeds and compare their structure and functions.

- Students will discuss the structure and functions of french bean and maize seeds.
- Students will be shown the picture of French bean and maize seed and will be asked to label the structures of the given seeds.
- Teacher will make 25 pairs of the students for this activity and students will work in the group .
- Teacher will guide them while working in groups.

ACTIVITY:



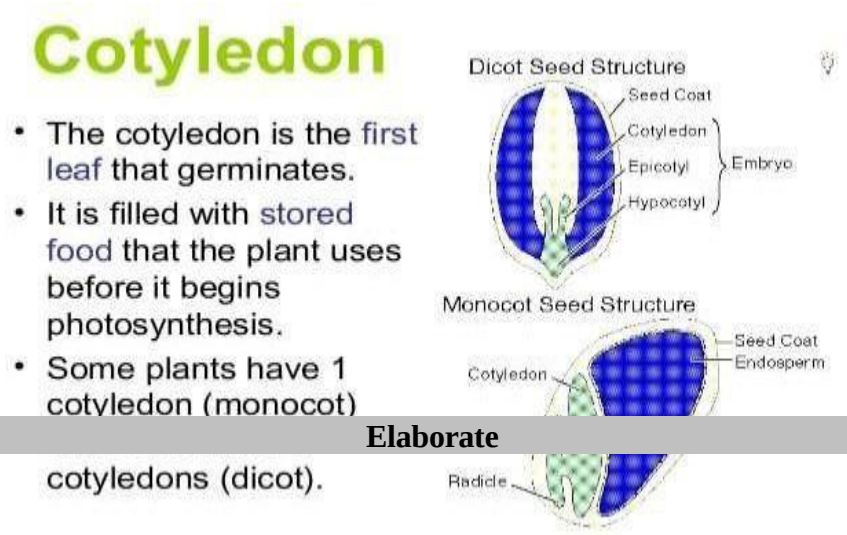
Q:Label the above structure of French bean and maize seed?

Explain

Time Duration 05 minutes;

Activities:

- In this phase Teacher will explain the structure and function of French bean and maize seed.
- Teacher will explain that maize seed and French bean are different from each other in such a way that maize seed is monocotyledon while French bean is dicotyledon.
- Teacher will then show the picture chart of French bean and maize seed and explain it.
- Teacher will then explain the functions of cotyledons that is to store food and to protect embryo or the baby plant.



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity related to structure and function of French bean and maize seeds for further clearance of concepts.

Activities:

- Teacher will take water, glass, different two types of seeds like French bean and maize seeds etc and ask the students to perform following activities for their concept clearance.
- Students will take a glass half filled with water and will soak these seeds in water.
- Now take them one by one and try to divide them into two pieces.
- Teacher will ask the the students what did you observe,write the difference in the table below?
-

Maize Seed	French Bean

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Teacher will write the names of different seeds in first column and will ask the students to classify the seeds on the basis of their structure?

Seeds	Structure	Seeds	Structure
Wheat		French bean	
Maize		Rice	
Oat		Pea seeds	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

Students will be asked to complete their task by answering the following questions?

Q.1. Write the difference between the structure of French bean and maize seed in two lines?

Difference between two seeds(frecnch bean and maize seeds)

French bean Maize seed

Q.2. Write the two important functions of seeds?

(1) _____

(2)_____

Lesson Plan-2

Activity Title:	Functions of Cotyledons
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Enlist the functions of Cotyledons
Objectives	To explain the functions of cotyledons

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked the prior knowledge questions.
- Teacher will ask the srudents that how do plants get their food,and where they store their food.
- Teacher will give some seeds to the students and ask them to break the seeds and observe that what did they contain.
- Teacher will ask the students to enlist the name of seeds which you see in your surroundings (e.g gram,pea,maize,French bean,red beand etc)
- Students will arrange the seeds on the basis of their divisions i.e monocot seeds and dicot seeds.

LIST OF SEEDS

MONOCOT SEEDS	**DICOT SEEDS**

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will write the name of some seeds on the board and ask to students to separate the seeds on the basis of their cotyledon.
- For example Maize,wheat, barley,mangoes,French bean,apricots,plum,peanuts.
- Students will be asked to identify their cotyledons and write their type.

Name of seed	Monocot	Dicot
Maize		
Whaet		
Barley		
Mangoes		
French beans		
Apricots		
Plum		

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **FUNCTIONS OF COTYLEDONS**

ACTIVITY:

Teacher will ask the students:" see the pictures of seeds and write the functionsof their cotyledons? For examples pea,rice,wheat,maize,grams,corns,peanuts,French beans etc. Teacher will ask the students; make a list of functions of cotyledons.(monocots and dicots)

- Students will identify the functions of cotyledons by seeing the pictures
- Students will then complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs
- Teacher will ask the students to answer the Q1?
- Q1: Write the functions of the cotyledons of the seeds given below?


Q1: IDENTIFY THE MONOCOT AND DICOT SEEDS?

Explain

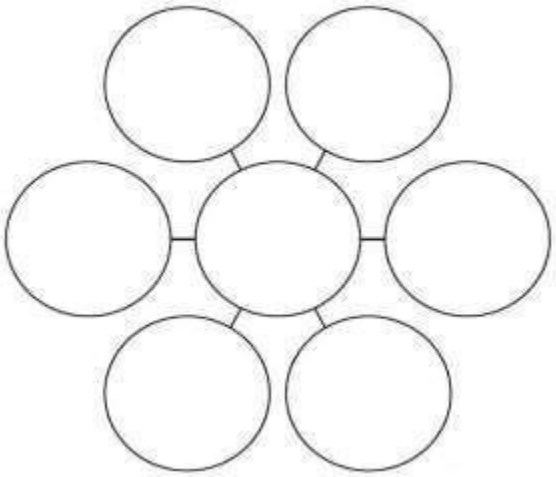
Time Duration 05 minutes;

- In this phase Teacher will explain the topic in detail.Teacher will first define and explain the monocot and dicot seeds that is the seeds containing one and two cotyledons respectively.
- Teacher will then give some examples of monocot seeds e.g wheat,rice,maize etc and some examples of dicot seeds e.g wheat,French bean and peas etc.
- Teacher will then explain the functions of cotyledons that is,
- The function of cotyledon is to store food.
- To protect the embryo that is the baby plant.
- In this phase students will complete their task by completing **Graphic organizrer**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of seeds and classify their cotyledons
- according to their funtions.
- Students will discuss the functions of cotyledons with each other.
- Teacher will guide them while working in groups.
- Students will arrange cotyledons on the basis of their functions
- in graphic organizer after discussion.
- Students will write the name of cotyledons on the basis of their functions.
- Group leader will present their work in front of class

Graphic organizer



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity related to function of **COTYLEDONS** for further clearance of concepts.

Activity:

- Teacher will write the name of two different types of seeds for examples French bean and maize seeds.
- Teacher will give different seeds to different students and will ask them to see whether they are monocotyledons or dicotyledons.
- Students will observe the seeds.
- Teacher will point towards students what did you observe,what is present inside the cotyledons.(They contain stored food)
- Students will write the functions of cotyledons.

ACTIVITY:

FUNCTIONS OF COTYLEDONS

1:_____

2:_____

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the seeds and explain in tables provided individually.

- Teacher will write the names of different seeds in first column for example, **wheat,maize,gram,pea,French beans,barley, etc** and will ask to students to classify the seeds on the basis of their characterstics and complete task in given table below individually.
- Teacher will ask question by following manner Q.NO1;Complete the table by writing the characters of the seeds.

SEEDS	COTYLEDONS	FUNCTIONS
Wheat		
Maize		
Gram seeds		
Pea		
French bean		
Barley		
Peanut seeds		
Corn		
Almond		

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the seeds and explain it in the tables provided individually.

- Teacher will write the names of different seeds for example, maize,corn,apricot,peach,almonds,peanuts,peas etc and will ask to students to identify the cotyledon of the seeds and write the functions of the cotyledons in the given table
- Q.NO1.Complete the table by identifying the type of seed and write their functions?

S.No	SEEDS	TYPE OF COTYLEDON	FUNCTIONS

Lesson Plan-3

Activity Title:	Seed Germination
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation Objectives	Conditions necessary for the germination of seeds. 1-To identify the conditions necessary for the germination of seed

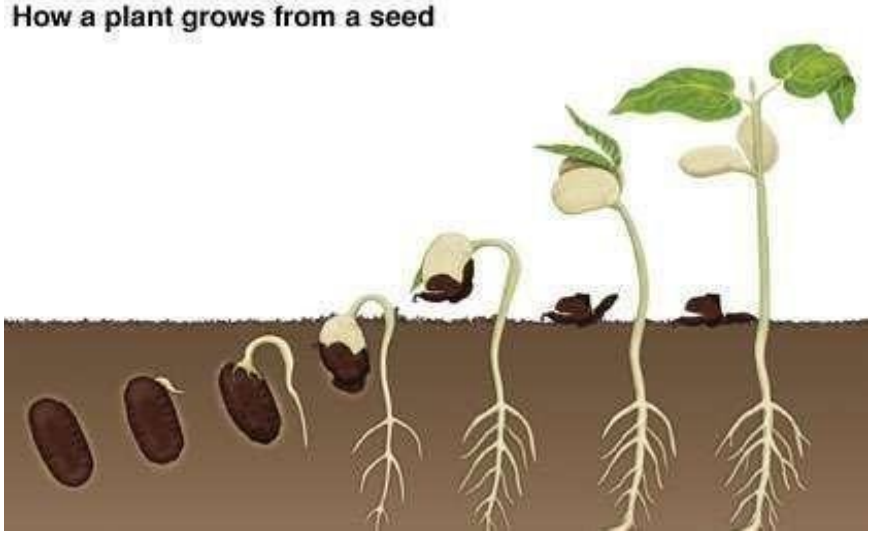
Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
Students will be asked that what is seed germination.

- Teacher will make the following sketch of seed germination on the board.
- **Seeds →Roots→ Stems →Leaves →Flowers →Fruits →Seeds**
- Teacher will ask the students how does a seed grows into plant?
- Students will see the sketch and will answer the question accordint to their prior knowledge.
- Teacher will note and write the important points on the board.



Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

•Teacher will perform the following activity.

- For this activity teacher will require disposable glasses or used ice cream cups,some stones pebbles,plastic shopping bag,soil.
- Teacher will number the cup from 1-4.
- Teacher will fill glass number 1 with stone pebbles and sow some seeds in it.

- Teacher will fill the other glasses with soil and sow the same number of seeds.Then she will water the glasses 1,2 and 4 eexcept glass 3.
- Teacher will cover glass 2 with plastic sheet and will tie it with rubber band.
- Teacher will place glass 4 in the corner of the classroom.
- Teacher will then ask the students to observe the germination and record your observations.

Q1:What did you observe in the four glasses,whether the seed will grow or not?

Glass No 1	Glass No 2	Glass No 3	Glass No 4

Explore

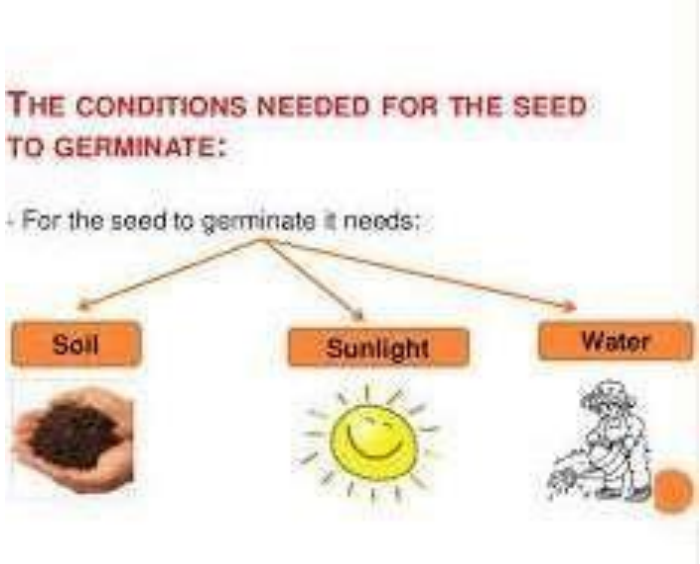
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students for the **Conditions Necessary for Germiation.**

Teacher will ask the students:" see the pictures of seed germination and observe the conditions necessary for seed germination. For examples air, light, soil, humidity, water etc. Teacher will ask the students; make a list of these conditons which are necessary for seed germinations.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.
- Techer will ask the students to write the answer of QNo 1 after seeing the picture chart.



Q1: What are the three main conditions necessary for the germinations of seeds?

1:_____

2:_____

3:_____

Explain

Time Duration 05 minutes;

Teacher will explain the conditions necessary for seed germinations,that are soil,water,air,temperature,light one by one and will also explain the adverse effects if one of the condition is not available. Teacher will explain that these conditions are necessary for the germination of seed into plant and seed can not germinate in the absence of air,water and light.

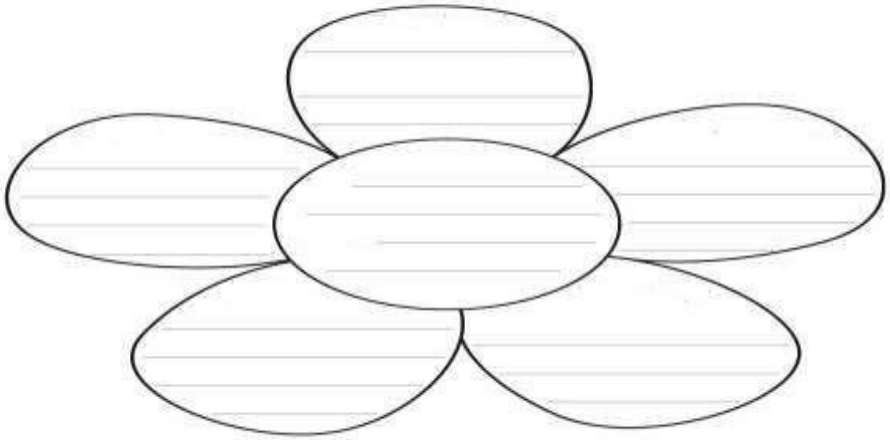
ACTIVITY:

- In this phase students will complete their task by completing **Graphic organizrer**, while working in 05 groups. Group leader will explore their idea in front of class

Activity

- Students will be asked, see the pictures of seed germination and write the
- conditions necessary for the germination of seeds.
- Students will discuss the conditions for the germination of seeds with each other.
- Teacher will guide them while working in groups.
- Students will write the main conditions in the graphic organizer given below.
- Group leader will present their work in front of class.

Graphic organizer:(Necessary conditions for seed germinations)



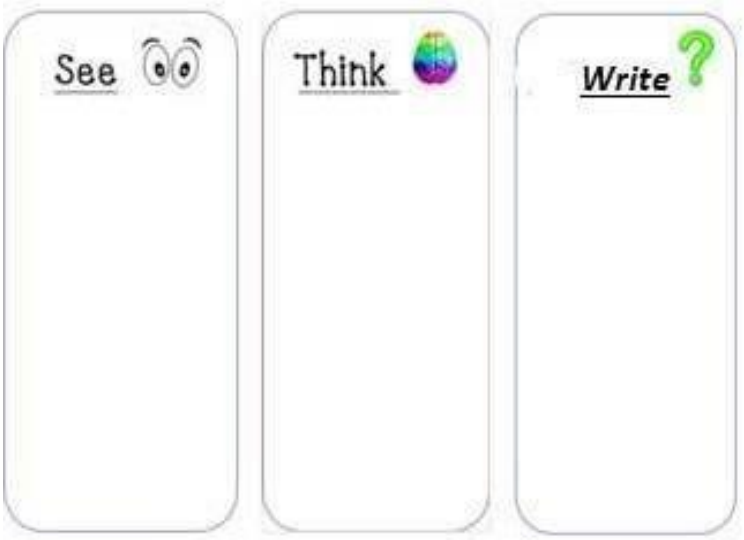
Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity for further clearance of concepts.

Activity:

- Teacher will ask the students that what will happen if we place the seed in full dark.
- Teacher will define the conditions one by one which are necessary for seed germination.
- Students will note the conditions necessary for the germination of seeds.
- Teacher will then ask the students to summarize and write them in the table given below.
- Teacher will point towards students what are the conditions necessary for the germination of seeds.
- Students will write the conditions.



Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the main conditions and explain in tables provided individually.

- Teacher will write the question for individual evaluation.
- Teacher will ask question by following manner
  Q.NO1;Write the conditions necessary for the germination of seeds.

Condition 1	Condition 2	Condition 3	Condition 4

Extend

Time Duration ;05 minutes
Individual work will be given to students to complete their task individually in new context for further concept development.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the conditions necessary for the seed germination and explain it in tables provided individually.

- Teacher will write the conditions necessary for the germination of seeds for example, water,air,light,soil etc will ask the students to complete task in given table below individually.
- Q.1.Complete the table by writing the conditions necessary for the germination of seeds.

CONDITIONS NECESSARY FOR SEED GERMINATION

Lesson Plan-4

Activity Title:	Seed Germination
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Prediction of necessary condtions for the germination of seeds.
Objectives	1-To predict that what would happen if the necessary conditions for seed germination are not fulfilled.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
Students will be asked that what is seed germination.

- Teacher will ask the students that why air,water,light and temperature are necessary for seed germination?
- Teacher will then show or display the picture chart of the necessary conditions for the germination of seed and will ask that what would happen if water,air,light and temperature is not provided to the seed?

ACTIVITY:

Teacher will then ask the students to answer the question number 1 in yes or no.

Q1: Can we grow a seed in the absence of?

1: Air_____ yes/no

2:Water_____ yes/no

3: Light_____ yes/no

4:Soil_____ yes/no

5:Temperature_____yes/no

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

•Teacher will perform the following activity for describing the conditions necessary for seed germination.

Activity:

- For this activity teacher will require disposable glasses or used ice cream cups,some stones pebbles,plastic shopping bag,soil.
- Teacher will number the cup from 1-4.
- Teacher will fill glass number 1 with stone pebbles and sow some seeds in it.
- Teacher will place glass 1 in dark **(absence of light.)**
- Teacher will place glass 2 in the **(absence of air)** and she will cover the glass with the plastic bag.
- Teacher will not water glass 3**. (absence of water)**
- Teacher will sow the seeds in stones in the glass 4**. (absence of soil)**

Q1:What did you observe in the four glasses? Can the growth of seed will take place?

Glass No 1	Glass No 2	Glass No 3	Glass No 4

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

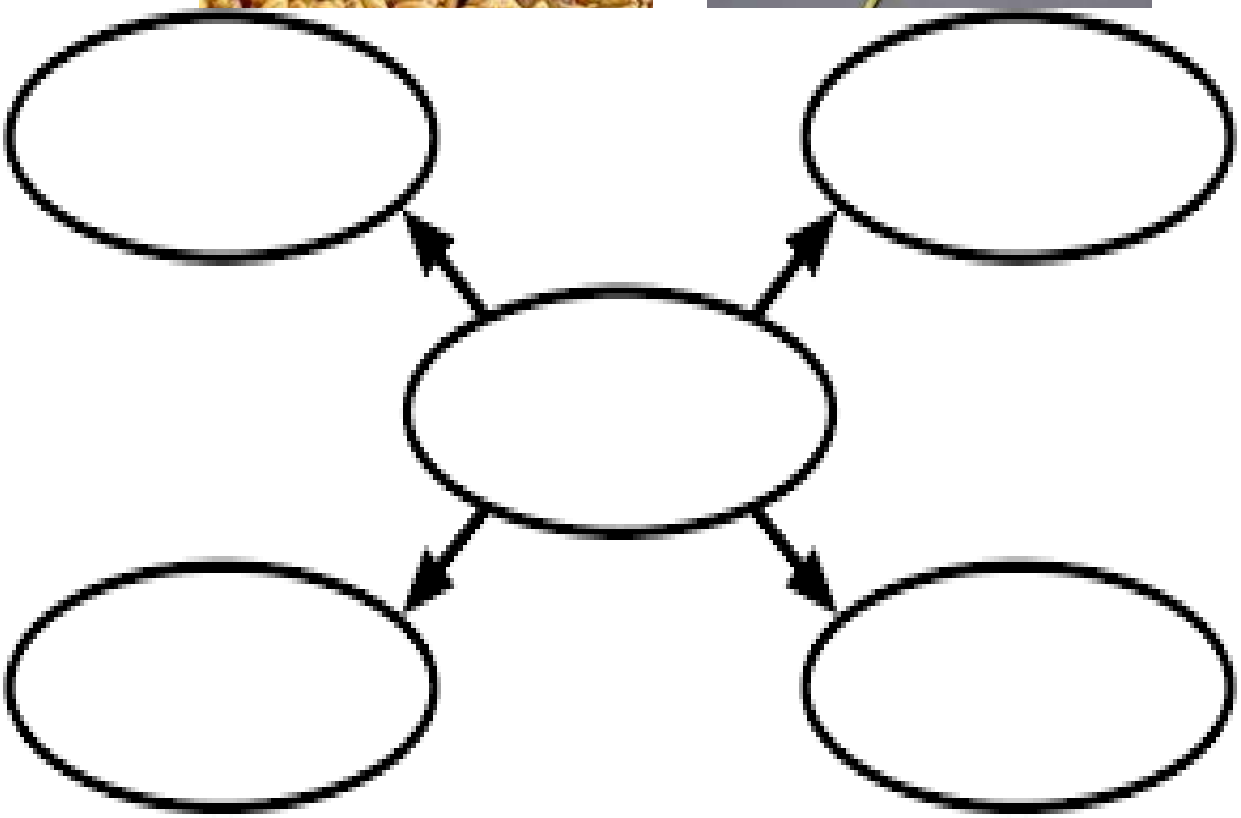
For this activity teacher will present a **chart** in front of students that What would happen if the **conditions necessary for germination of seeds are not fulfilled.**

Teacher will ask the students:" see the pictures of seeds and write the conditions that would happen to the seed if the necessary conditions for seed germination are not fulfilled. For examples air, light, soil, humidity, water etc.

Activity

Teacher will ask the students; make a list of these **conditons which are necessary for seed germinations in graphic organizer.**

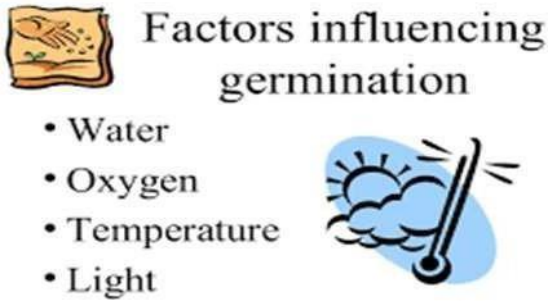
- Students will observe the seeds by seeing the pictures.
- Students will see the pictures and will tell the condition of the seed that whether it will grow or not ?
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.



Necessary conditions for seeds germination in graphic organizer

Explain

Time Duration 05 minutes;
Teacher will explain the conditions necessary for seed germinations,that are soil,water,air,temperature,light one by one and will also explain the adverse effects if conditions are not available i.e teacher will explain that the growth of seed is not possible in the absence of the conditions necessary for the seed germinations e.g air,water,light etc
Teacher will explain the topic by showing the picture chart.



- In this phase students will complete their task by completing **The Table** while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will discuss the conditions for the germination of seeds with each other.
- Teacher will guide them while working in groups.
- Students will then fill the table that whether the seed will grow if the conditions
- necessary for the germination are not fulfilled.
- Group leader will present their work in front of class

Absence of conditions		**Seed growth** **Yes**	**Seed growth** **NO**
01	**Air**		
02	**Water**		
03	**Soil**		
04	**Light**		
05	**Temperature**		

Elaborate

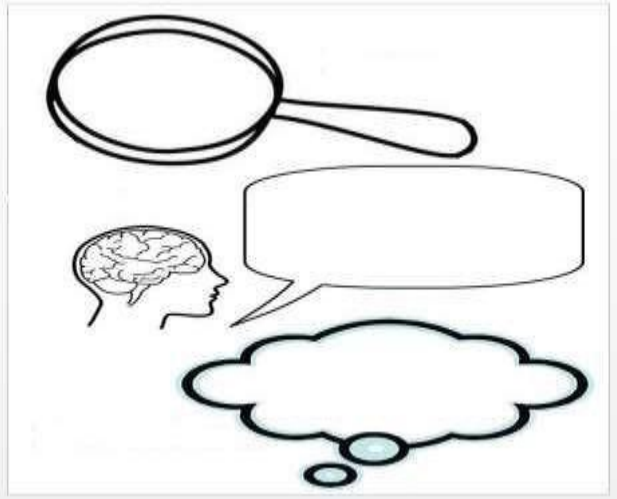
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity for further clearance of concepts.

Activity:

- Students will see the pictures of the seeds when the conditions necessary for the germination of seeds are not fulfilled.
- Teacher will then ask the students to summarize and write them in the graphic organizer given below.

GRAPHIC ORGANIZER



Q1: Student will see the shape of the seed when the conditions necessary for the growth of seed are not fulfilled,then will think and write that whether they will grow or not?

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually..
- Teacher will write the question for individual evaluation.
- Teacher will ask question by following manner.

Q. What happen when the conditions necessary for the germination of seeds are not fulfilled. (Answer the question in one line)

Answer:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to answer the question that what happens when the conditions necessary for the germination of seeds are not fulfilled.
- Can we grow a seed in the following conditions given in the table below.
- Students will be asked to fill the table individually for concept clearance.

01	Fully dark room		
02	In air tight bottle		
03	Absence of air		
04	Absence of water		
05	In sunlight		
06	In open air		
07	In Refrigator		
08	In Ice		
09	In stones		
10	In soil		

Lesson Plan-5

Activity Title:	**Key characterstics of seeds and seed germination**
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Key characteristics of seeds and seed germination
Objectives	1-To predict the characteristics and types of seeds,and seed germination.

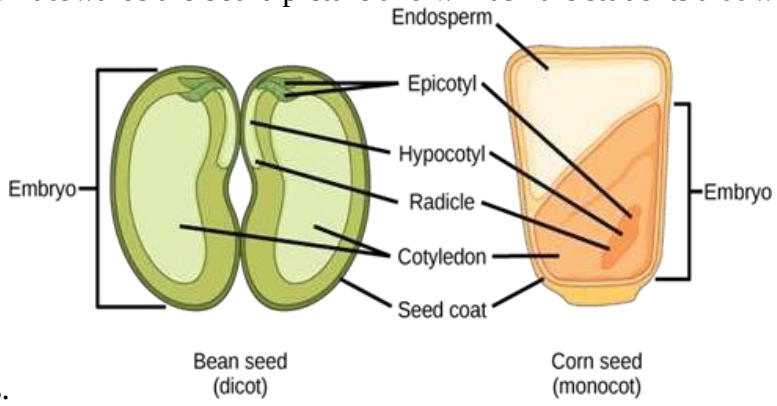
Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
Teacher will ask the students that how does the growth of plant starts from,and why are seeds necessary for plants.
Teacher will ask the students that how many types of seeds are there on the basis of their cotyledons.
Students will discuss with each other and answer.

- Teacher will point towards the board picture and will ask the students that what are monocot and dicot seeds.

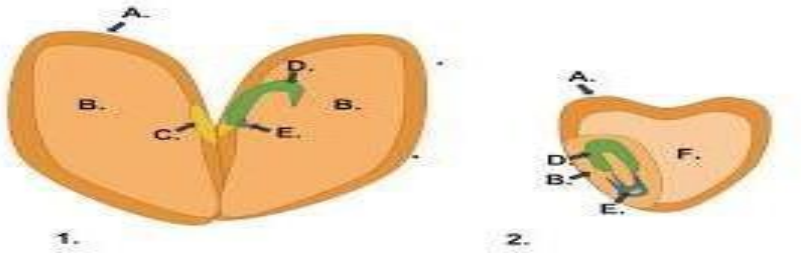


- Students will observe picture and answer the given question below.
- Write in one line what is the difference between monocot and dicot seeds cotyledons.?

Difference (monocot and dicot seed cotyledons)

1. _____
2. _____

- Teacher will then ask the students label the digram given below?
- Write the name of monocot and Dicot seeds?



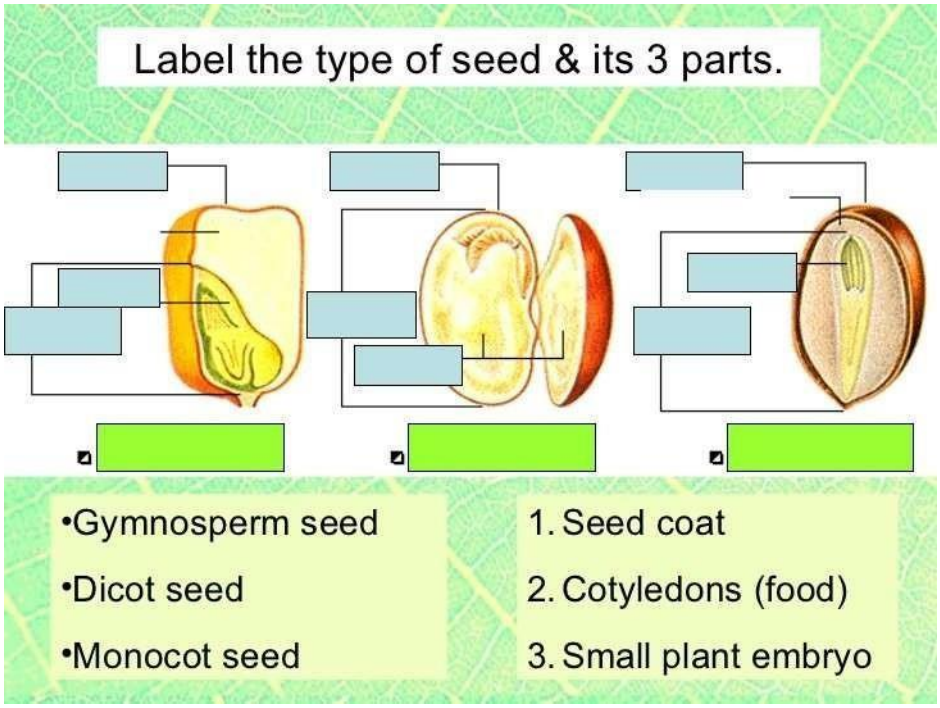
Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask the students to perform the following activity for the characteristics of seeds.
- Teaher will show the pictures of seeds to the students and will ask them to label the seeds and its three parts.

Activity-1



_____ _____

Activity 2

Teacher will ask the students see the pictures of monocot seedsand dicot seeds and answer the following question.

Q.Write the name of monocot seeds and dicot seeds in given space below?

_____ _____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students that What would happen if the **conditions necessary for germination of seeds are not fulfilled.**

Teacher will ask the students:" see the pictures of seeds and write the conditions that are necessary for the germination of seed.

Students will observe the seeds by seeing the pictures.

- Teacher will make 25 PAIRS; they will discuss and complete it in pair.
- Teacher will ask the students to answer Q1 after their observations.
- **Q1:Write the conditions necessary for the germination of seeds?**

Conditions necessary for seed germination:

1:_____ **2:**_____

3:_____ **4:**_____

Explain

Time Duration 05 minutes

In this phase Teacher will explain the topic by main definitions,headings and by showing the picture charts.

- Teacher will define and explain seed germination in such a way that,
- **The growth of plant from a seed is called seed germination.**
- Teacher will also explain the conditions necessary for seed germinations,that are **soil,water,air,temperature,light** one by one and will explain the adverse effects on the growth of seed if conditions are not available.
- Teacher will explain that the growth of seed is not possible in the absence of the conditions necessary for the seed germinations e.g air,water,light etc

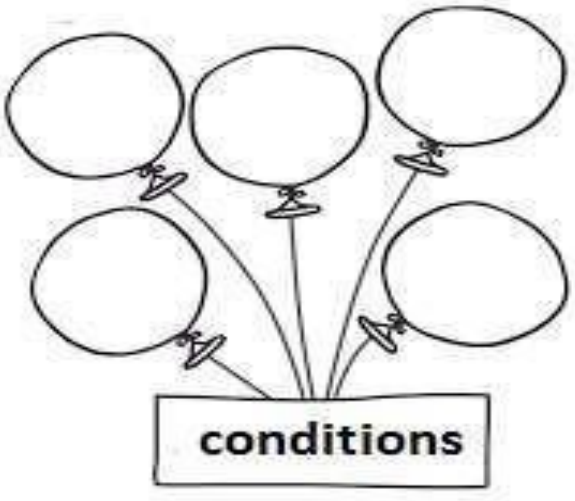
In this phase students will complete their task by completing **Graphic organizrer**, while working in 05 groups.

Group leader will explore their idea in front of class

Activity

- Students will be asked, see the pictures of seed germination and write the conditions
- necessary for the germination of seeds.
- Students will discuss the conditions for the germination of seeds with each other.
- Teacher will guide them while working in groups.
- Group leader will present their work in front of class
-

Q1: Write the conditions necessary for seed germination in the graphic organizer?



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity for further clearance of concepts.

Activity:

- Teacher will ask the students that what will happen if the conditions necessary for the
- germination of seed are not fulfilled?
- Teacher will then summarize the lesson and write different types of seeds on the board and will ask the students to separate the monocot and dicot seeds?
- Students will be asked the question that can we grow a seed in the absence of necessary conditions like water,air,soil,temperature and light?
- Students will separate the monocot and dicot seeds in the table given below.
- Then in the next activity students will be asked to write the conditions necessary for the germination of seeds.

SEEEDS: Maize, Gram, Peas, Peanuts, French beans, Mangoes, Almond, Rice

Q1; Separate the above monocot and dicot seeds?

S.No	MONOCOT SEEDS	DICOT SEEDS
01		
02		
03		
04		
05		
06		
07		
08		

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually..
- Teacher will write the question for individual evaluation.
- Teacher will ask question by following manner.

Q.No1; Define Monocot seeds and Dicot seeds?

Monocot Seeds: _____

Dicot Seeds: _____

QNo2: What are the conditions necessary for the germination of seeds?

1:_____

2:_____

3:_____

4:_____

5:_____

Extend

Time Duration ;05 minutes
Individual work will be given to students to complete their task individually in new context for further concept development.
INSTRUCTIONS;

- Students will be asked to write atleast five examples of monocot and dicot seeds.
- Students will then write the difference between Maize seed and French Bean in one line.
- Students will finally write the conditions necessary for the germination of seeds for further clearance of concept.

Monocot Seeds	**Dicot Seeds**

Activity:
Q1: Students will be ask to answer the question that can we grow a seed in the absence of the conditions necessary for the germination of seed?

Answer the above question in Yes or NO?

_____

Q2: Students will be asked to write the difference between Maize seed and French Bean in one line?

Maize Seed	**French Bean**

Lesson Plan-6

Activity Title:	Types of seeds
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	How many types of seeds are there.
Objectives	1-To classify the seed into main types.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Teacher will write the name of some seeds on the board,for example gram seeds,peas, maize,corn seeds,wheat, barley, mangoes,French beans, etc and ask the students to split the seeds into two pieces.
- Teacher will then ask the students which of the seeds are divisible seeds and which of them are non divisible seeds.
- Students will tell the name of divisible and non divisible seeds,teacher will write them on the board.

Divisible Seeds	Non Divisible seeds

Engages

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

•Teacher will ask to students, see the pictures of charts of seeds with each other and answer the following question after discussion. Following are few seeds listed.

- Maize,wheat, barley,mangoes,French beans, apricots,plum,peanuts,
- Identify their type(seeds) on the basis of division and write them in the table given below.

Name of seed	Monocot	Dicot
Maize		
Whaet		
Barley		
Mangoes		
French beans		
Apricots		
Plum		

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students **TYPES OF SEEDS**

- Teacher will ask the students:" see the pictures of seeds,identify their DIVISION and write the type of seed whether it is monocot or dicot?
- For examples pea,rice,wheat,maize,grams,corns,peanuts,French beans etc.
- Students will identify the type of seed by seeing the pictures.
- Teacher will ask the students,see further pictures of seeds and their type whether they are monocot or dicot.
- Students will see the pictures and complete the given task .
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Q1:Identify the type of the above seeds and write their name?

1: Almond_____ **2: Peas**_____

3: Gram_____ **4:Rice**_____

Explain

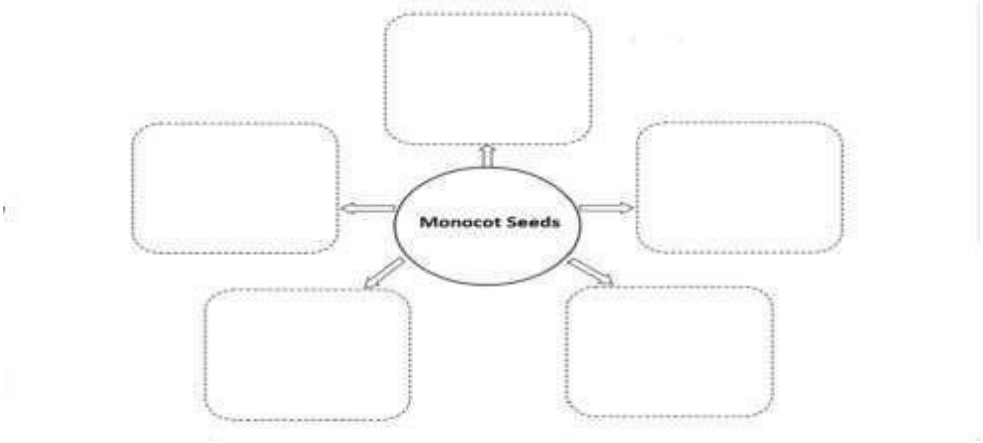
Time Duration 05 minutes;

- In this phase students will complete their task by completing **Graphic organizrer**, while working in 05 groups. Group leader will explore their idea in front of class

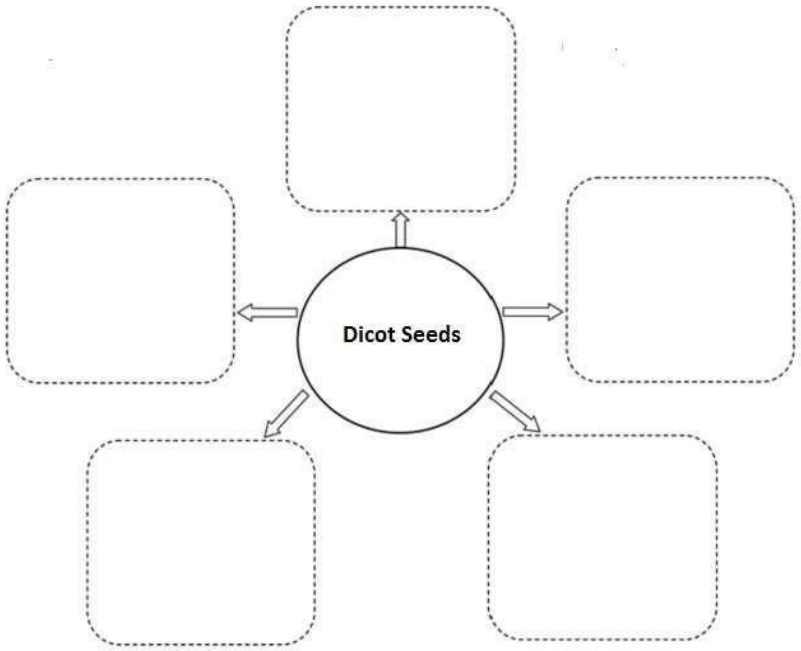
Activities

- Students will be asked, see the list of seeds from the board and classify their type
- according to the division.
- Students will be asked to classify the seeds which are gram seed,oat,barley,maize,
- wheat,rice,mango,peach,plum,almond,pea seeds,peanuts.
- Students will discuss the type of seed with each other.
- Teacher will guide them while working in groups.
- Students will arrange type of seed on the basis of their division in graphic organizer
- after discussion.
- Students will write the type of seeds on the basis of their division.
- Group leader will present their work in front of class.

Graphic organizer for monocot seeds:



Graphic organizer for Dicot seeds:



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity related to types of seeds for further clearance of concepts.

Activity:

- Teacher will write the name of two different types of seeds for examples French bean and maize seeds.
- Teacher will give different seeds to different students and will ask them to see whether they are monocotyledons or dicotyledons.
- Students will observe the seeds.
- Teacher will then ask the students to split the seed,whether they are divisible or indivisible.
- Students will observe the seed cotyledons.
- Teacher will ask the students what did you observe,whether the seeds are monocot or
- Dicot.
- Students will write the name of monocot and dicot seeds.

MONOCOT SEEDS	**DICOT SEEDS**

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the seeds and write them in the tables provided individually.

- Teacher will write the names of different seeds in first column for example, **wheat,maize,gram,pea,French beans,barley, etc** and will ask to students to classify the seeds on the basis of their division and complete task in given table below individually.
- Teacher will ask question by following manner.
  Q.1.Complete the table by writing the type of the seeds.

S.No	**SEEDS**	**TYPE OF SEED (Monocot/Dicot)**
01	Wheat	
02	Maize	

03	Gram seeds	
04	Pea	
05	French bean	
06	Barley	
07	Peanut seeds	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will remind the types of seeds and write it in the tables provided individually.

- Teacher will write the name of different seeds and will ask the students to identify the type of cotyledon, and write the type of seed in front of their names.
- Q.Complete the table by identifying the type of seed?

S.N0	SEEDS	MONOCOT	DICOT
1			
2			
3			
4			
5			
6			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Lesson Plan-1

Activity Title:	Define Pollutionn and it's types
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Definition and types of Pollution.
Objectives	Students will be able; To define: 1- Pollution 2- Main types of pollution

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Teacher will ask the students that what happens when we throw the garbage out of our home and when we throw it on the road side rather than burning them.
- Teacher will ask the students to tell and write the name of those things which are harmful for the environment.
- Teacher will then ask the adverse effect of dirty water,dirty air, dirty food and smoke etc.
- Students will tell the name of undesirable things in the environment and teacher will write on the board.

Undesirable changes in the environment:

01		06	
02		07	
03		08	
04		09	
05		10	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.NO.1 Following are few pictures shown below. Identify the type of pollution in each of the picture.

_____ _____

_____ _____

Explore

Time Duration 05 minutes;

<u>INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE</u>;

For this activity teacher will present a **chart** in front of students for **Pollution and main types of pollution.**

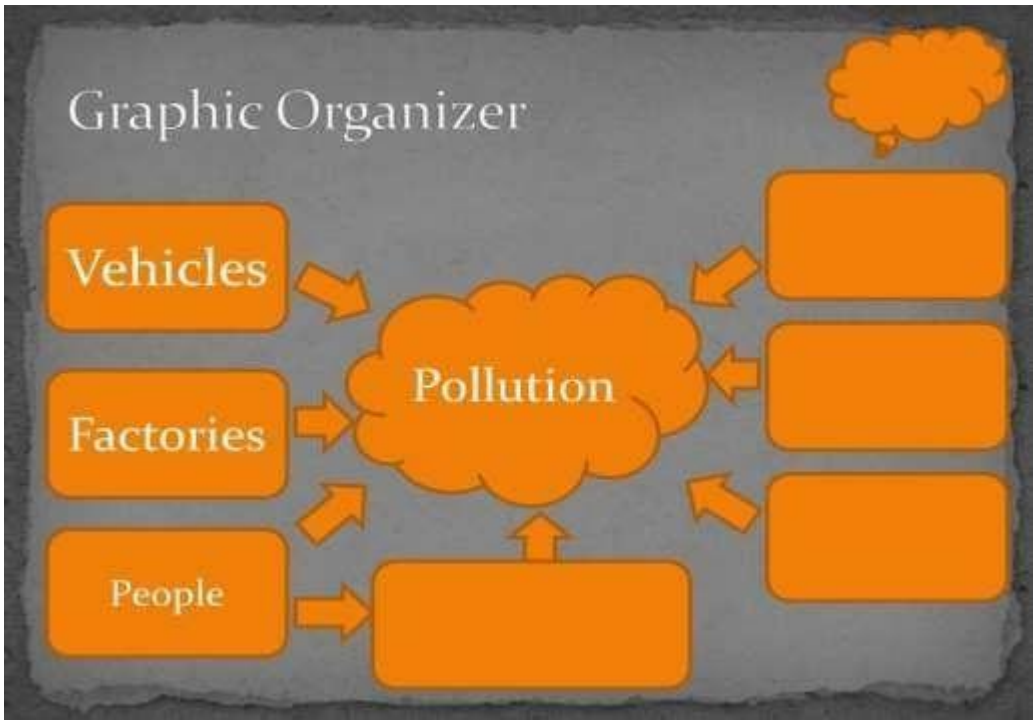
- Teacher will ask the students:" see the pictures of the chart and identify the
- type of pollutions in it.
- Teacher will ask the students; write down three major types of pollution.
- Students will also identify other types acording to the pictures shown on the
- Chart.
- Students will see the pictures below and will write the main types of pollution.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Main types of pollution

1-
2-
3-

Explain
Time Duration 05 minutes; In this phase teacher will define and explain pollution as **'The harmful change in the environment is called pollution.'** Teacher will then explain three main kinds of pollution 1: Water pollution (Contamination of lakes,oceans, and underground water mostly by human activities) 2: Air pollution (Contamination of air when harmful gases, dust particles or smoke are introduced into the atmosphere) 3: Land pollution (Contamination of land or earth's surface) • In this phase students will complete their task by making **graphic organizer**, while working in 05 groups. Group leader will explore their idea in front of class
Activities

- Students will be asked, see the picture chart of pollution and identify the three main
- types of pollution.
- Students will discuss with each other the different kinds of pollution while seeing
- pictures about pollution.
- Teacher will guide them while working in groups.
- Students will write the name of different kinds of pollution in the Graphic Organizer
- Group leader will present their work in front of class.



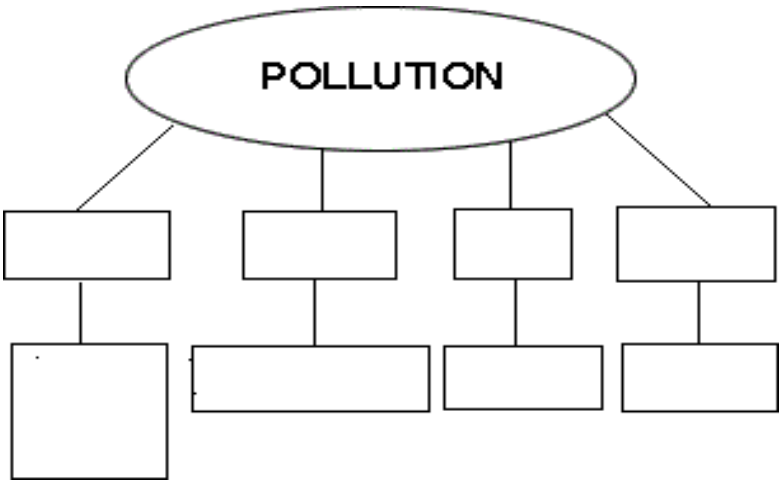
Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column by writing main types of pollution for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of different kinds of pollution like air water and land pollution along with their sources.
- Students will observe the pictures present on charts and discuss with each other in groups and complete the task by writing main types of pollution.



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the definition of pollution and it's main types.
- Teacher will ask questions by following manner
- **Q.No1; Define pollution ?**

Definition:_____

QNo 2: How many types of pollution are there?

Answer:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Write the types of pollution according to conditions mentioned in the given column..

Conditions	Type of pollution
Garbage on the roads	
Dirty water	
Smoke from car engines	
Dust particles in air	
Plastic bottles on road side	
Ciggertae smoke	
Polyethene bags	

Lesson Plan-2

Activity Title:	Causes of environmental pollution
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	The causes of air,water and land pollution on environment
Objectives	Students will be able; 1-To explain the causes of air,water and land pollution on environment

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes
  - INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
  - In this phase teacher will elicit the prior knowledge of the students.
  - Teacher will ask the student about , what is pollution,what do you think that why our environment is getting polluted or dirty day by day.
  - Teacher will then ask the students to tell the name of some diseases that we get from our polluted environment.
  - Students will tell the name of some diseases that are due to drinking dirty water and breathing dirty air.
  - Teacher will write them on the board.

Water borne diseases		**Air borne diseases**	
O1		01	
02		02	
03		03	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.No 1: What is harming the air.

Causes:_____

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students for **Causes of pollution.**

- Teacher will ask the students:" see the pictures chart and write the causes of the given type of pollution e.g air,water and land.
- Students will observe the causes of air,water and land pollution according to the pictures shown on the chart.
- Students will see the above pictures and will write the causes of water pollution.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs

Causes of water pollution:_____

_____

_____

Explain

Time Duration 05 minutes;

In this phase teacher will explain the causes of air,water and land pollution in the environment.

- Teacher will explain that solid and liquid wastes from factories,shops,hospitals,fields and houses mix up with different sources of water and pollute the water.
- Similarly teacher will explain the causes of air pollution that burning of fuels e.g people burn wood for cooking and heat. The flame and smoke of the burning wood pollutes the air.
- Teacher will also explain the causes of land pollution that the chemicals used by the farmers as a fertilizers in their fields and poisonous spray on their crops are added to the soil and make it polluted.
- In this phase students will complete their task by making key points, while working in 05 groups. Group leader will explore their idea in front of class.

Activities

- Students will be asked, see the picture chart for the causes of air,water and land
- pollution and write the causes in the columns after seeing and observing the picture
- charts.
- Teacher will guide them while working in groups.
- Students will write the causes of air water and land pollution in the table given below.
- Group leader will present their work in front of class.

Air Pollution	Water Pollution	Land Pollution

Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column by writing the causes of air,water and land pollution for further clearance of concepts.

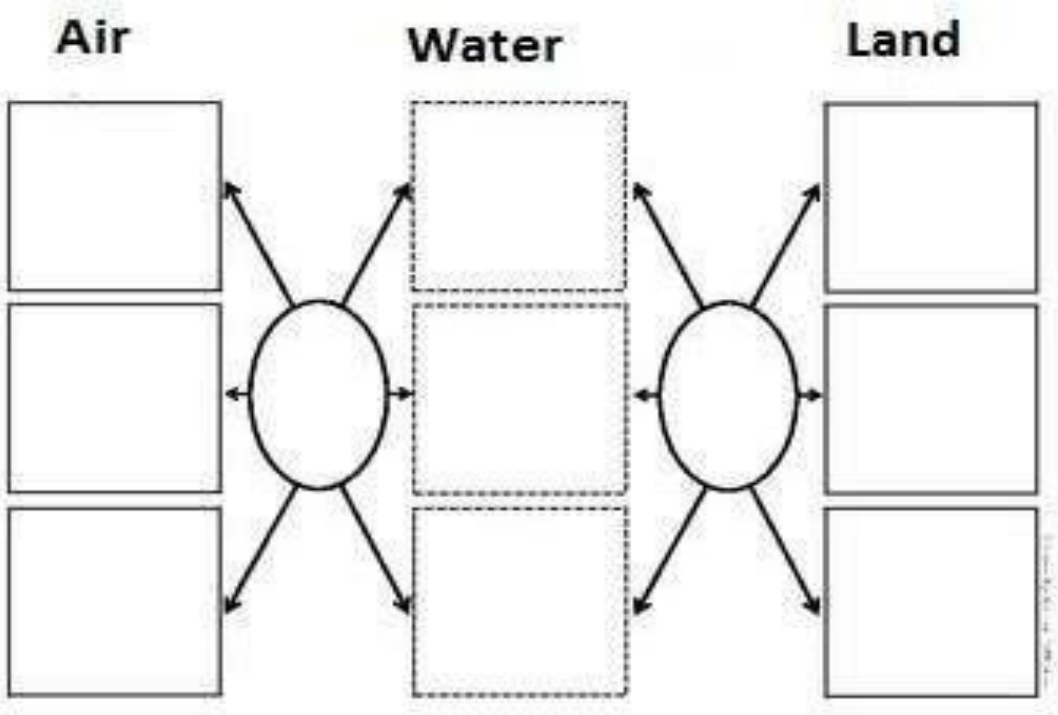
Activity:

- Teacher will show **another picture chart** to the students for the causes of different kinds of pollution like air water and land pollution and will ask them what are the factors that causes air,water and land pollution.
- For example smoke from air,household material,burning of coal and gases,insect killers and floor cleaners,exhaust for vehicles etc)

- Students will observe the pictures present on charts and discuss with each other in groups and complete the task by writing the causes of air,water and land pollution.

- Students will write the name of different activities (natural or man made) that causes air,water and land pollution and will write them in the graphic organizer given below.

Graphic Organizer:



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the causes of air,water and land pollution on the environment and will answer the given questions.
- Teacher will ask questions by following manner.
- Q1: Write the name of five activities that causes air,water and land pollution?

	Air pollution.	**Water pollution**	**Land pollution**
•	1:_____	1:_____	1:_____
•	2:_____	2:_____	2:_____
•	3:_____	3:_____	3:_____
•	4:_____	4:_____	4:_____
	5:_____	5:_____	5:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Identify the causes of air,water and land pollution and write them in the column.

	Causes	Type of pollution
01	Plastic bottles	
02	Automobile exhaust	
03	Burning fuels	
04	Fertilizers	
05	Industrial waste	
06	Garbage	
07	Cutting of trees	
08	Poisonous chemicals	

Lesson Plan-3

Activity Title:	Effects of environmental pollution
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	The effects of air,water and land pollution on environment
Objectives	Students will be able; 1-To explain the effects of air,water and land pollution on environment

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
Students will be asked to think about the main types of pollution,whether they are useful or harmful for the environment e.g air,water and land pollution.

- Teacher will ask the students that how dirty water will effect on our body.
- Teacher will then ask the effects of air,water and land pollution on the environment (e.g dirty water,dirty air, dirty food and smoke etc) and also on our body.
- Students will tell the name of some diseases caused by drinking contaminated water and teacher will write on the board.

Effects of air,water and land pollution on environment

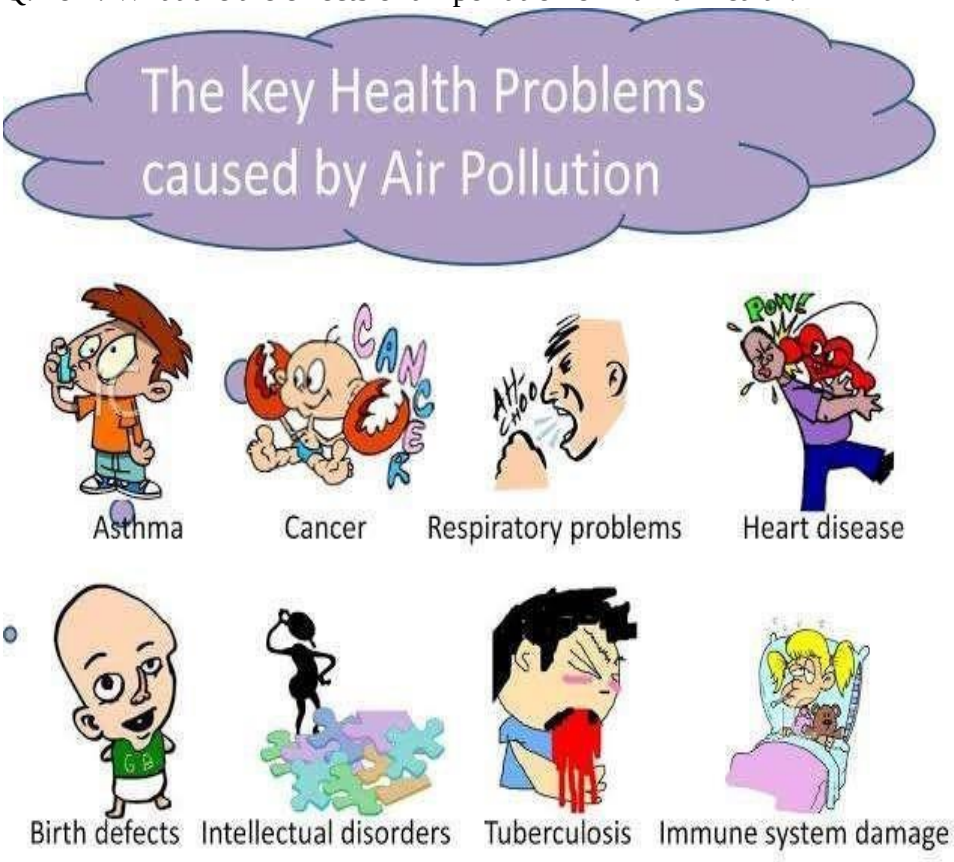
Type of pollution		Effects	
O1	Air pollution	01	
02	Water pollution	02	
03	Land pollution	03	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures charts and discuss with each other and answer the following question after discussion.
- Q.No 1: What are the effects of air pollution on human health?



Effects:_____

_____

_____

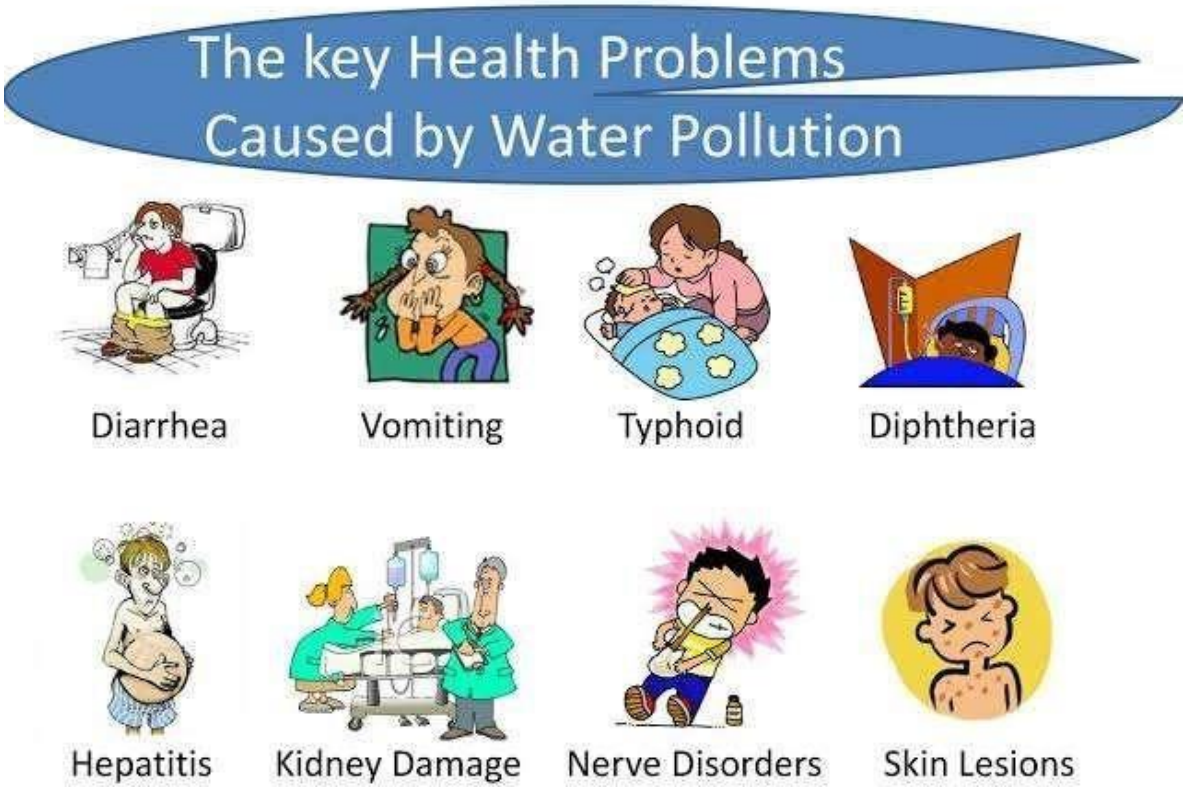
Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students for **Effects of pollution on environment and human health.**

- Teacher will ask the students:" see the picture charts and write the effect of the given type on pollution on the environment and human health as well.
- Teacher will ask the students; write the causes of water pollution on human health.
- Students will observe the causes of water pollution according to the pictures shown on the chart.
- Students will see the above pictures and will write the effects of water pollution.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs



Effects of water pollution on human health:_____

_____

_____

Explain

Time Duration 05 minutes;

In this phase teacher will explain to the students the harmful effects of air,water and land pollution on the environment as well as on human health.

Teacher will explain that polluted air,water and land is harmful to plants,animals and human beings.e.g polluted water in the sea kills sea birds,plants and other animals living in the sea.It also causes disease in the human beings e.g dysentery,typhoid,cholera etc

- Similarly teacher will the harmful effects of air pollution that the harmful gases,dust particles or smoke in the air have adverse effects on plants,animals and human beings.
- It causes many respiratory diseases in the human beings like asthma,allergies and lung diseases and disturbs the natural balance.

  Teacher will also explain the effects of land pollution on environment like it causes destruction of earth's surface.It also causes diseases in human beings like malaria,fever,stomachache.
- In this phase students will complete their task by making key points, while working in 05 groups. Group leader will explore their idea in front of class.

Activities

- Students will be asked, see the picture chart of effects of pollution and write the
- Effects of air,water and land pollution e.g diseases caused by air,water and land
- pollutions.
- Students will discuss with each other the effects of pollution while seeing pictures
- and will write them.
- Teacher will guide them while working in groups.
- Students will write the effects of air water and land pollution in the table given below.
- Group leader will present their work in front of class.

Air Pollution	Water Pollution	Land Pollution

Elaborate

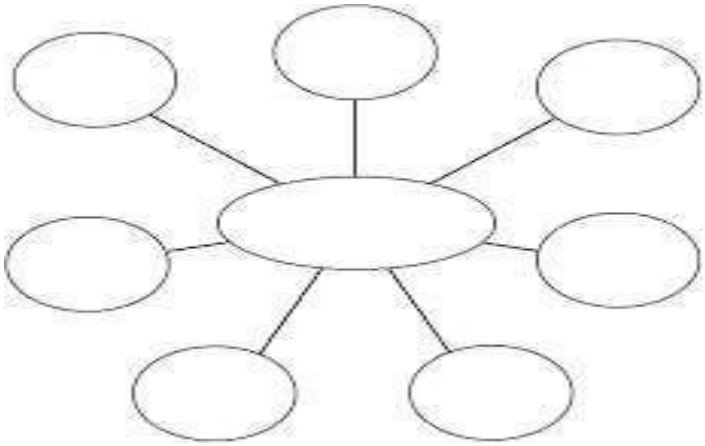
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column by writing main types of pollution for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of effects of different kinds of pollution like air water and land pollution.
- Students will observe the pictures present on charts and discuss with each other in groups and complete the task by writing the effects of air,water and land pollution.
- Students will write the name of different kinds of diseases caused by air,water and land pollution and will write them in the graphic organizer.

Graphic Organizer:



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the effects of air,water and land pollution on the environment and will answer the given questions.
- Teacher will ask questions by following manner.
- Q1: Write the name of five diseases caused by air,water and land pollution?

Air pollution.	**Water pollution**	**Land pollution**
1:_____	1:_____	1:_____
2:_____	2:_____	2:_____
3:_____	3:_____	3:_____
4:_____	4:_____	4:_____
5:_____	5:_____	5:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Identify the effects of air,water and land pollution on the environment and human health in the table.

Diseases		Type of pollution
01	Dysentry	
02	Typhoid	
03	Cholera	
04	Headache	
05	Lung Diseases	
06	Eye allergy	
07	Malaria	
08	Stomach ache	

Lesson Plan-4

Activity Title:	Problems of environmental pollution
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Awareness to the problem of environmental pollution in the surroundings.
Objectives	1-To plan and conduct a compaign to bring awareness to the problems of environmental pollution in the surroundings

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;
Students will be asked to think about the main types of pollution,whether they are useful or harmful for the environment e.g air,water and land pollution.

- Teacher will make the table of the main types of pollution on the board and will ask the students can we control the environmental pollution by reducing or minimizing the activities which are causing environmental pollution.
- Teacher will point towards students and will ask them that how air,water and land pollution can be controlled.
- Teacher will ask the students that how we can prevent the environment from becoming polluted.
- Teacher will then describe the harmful effects of air,water and land pollution on the environment (e.g dirty water,dirty air, dirty food and smoke etc) and also on our body.
- Students will tell some solutions through which we can control environmental pollution and teacher will write on the board.

Control of air,water and land pollution

Type of pollution		**Control**	
O1	Air pollution	01	
02	Water pollution	02	
03	Land pollution	03	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.No 1: What are the steps to reduce air pollution?

STEPS: _____

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students for **STEPS TAKEN TO MINIMIZE AIR,WATER AND LAND POLLUTION.**

- Teacher will ask the students:" see the pictures of the chart and write the steps that should be taken to minimize environmental pollution.
- Teacher will ask the students; write the preventional steps to minimize the air water and land pollution.
- Students will observe the preventional steps for controlling air,water and land pollution according to the pictures shown on the chart.
- Students will see the above pictures and will write the steps.

- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Control of pollution:

Planting more trees

Using Electric Vehicles

Using Environment Friendly vehicles

Using alternate sources of energy

Explain

Time Duration 05 minutes;
INSTRUCTIONS:
The instructions for this phase are given below.
In this phase teacher will explain to the students the remedial steps to control air,water and land pollution.

- Teacher will explain that environmental pollution can be controlled by taking some important steps.
- There are some important steps that should be taken to control environmental pollution.
- Teacher will explain to the students that we can control air pollution to not burn rubbish in the open air,the smoke from motor vehicles and factories should be filtered,cutting of trees shouls also be avoided.
- Teacher will then explain the necessary steps to control water pollution that we shoul use water with care,we should not throw the rubbish into the water etc.
- Then Teacher will explain the steps to control land pollution that we should not throw the garbage on the sides of roads and on land,we shoul dumped rubbish at specific areas etc.
- In this phase students will complete their task by making key points, while working in 05 groups.
- Group leader will explore their idea in front of class.

Activities

- Students will be asked, see the picture chart of steps to control environmental
- pollution and write the steps in the table given below.
- Students will discuss with each other while seeing pictures and will write them.
- Teacher will guide them while working in groups.
- Students will write the necessary steps for the control of air water and land pollution
- in the table given below.
- Group leader will present their work in front of class.
- Q:What are the remedial steps for the control of air,water and land pollution?

Air Pollution	Water Pollution	Land Pollution

Elaborate

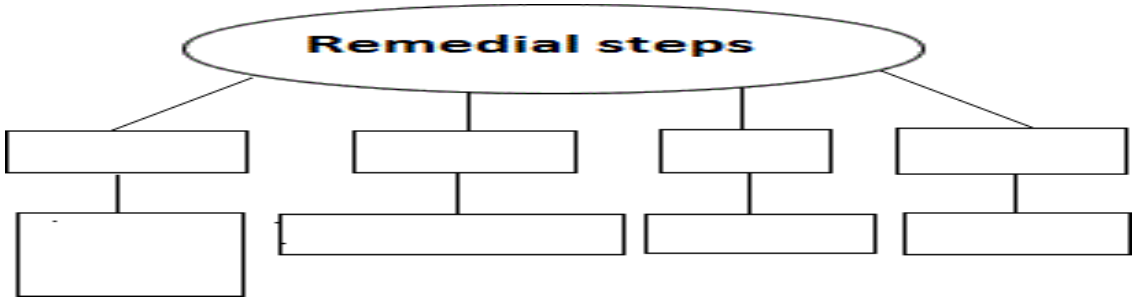
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column by writing main types of pollution for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of the awareness to the problem of environmental pollution like air water and land pollution.
- Teacher will display the chart of the remedial steps that should be taken to control the environmental pollution in the surroundings.
- Students will observe the pictures that are present on charts and discuss with each other in groups and complete the task by writing the remedial steps for the control of air,water and land pollution in the given graphic organizer.
- Students will write the necessary steps to bring awareness to the problem of environmental pollution in their surroundings,in the given graphic organizers.

Graphic Organizer:



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the remedial steps for the control of air,water and land pollution on the environment and will answer the given questions.
- Teacher will ask questions by following manner.
- Q1: Write at least two necessary steps that can bring awareness for the control of air,water and land pollution in the environment?

Air pollution	Water pollution	Land pollution
1:_____	1:_____	1:_____
2:_____	2:_____	2:_____
3:_____	3:_____	3:_____
4:_____	4:_____	4:_____
5:_____	5:_____	5:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Q1: Write the remedial steps that should be taken to bring awareness to the problem of environmental pollution in the surroundings?

AIR POLLUTION	WATER POLLUTION	LAND POLLUTION

Lesson Plan-5

Activity Title:	**Seeds and seed germination**
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Key characteristics of seeds and seed germination
Objectives	1-To predict the characteristics and types of seeds,and seed germination.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

Teacher will ask the students that how does the growth of plant starts from,and why are seeds necessary for plants.

Teacher will ask the students that how many types of seeds are there on the basis of their cotyledons.

- Teacher will point towards the board and will ask the students that what are monocot and dicot seeds,what is the difference between monocot and dicot seeds.?Teacher will then ask the students to write down five examples of monocot and Dicot seeds?

Monocot Seeds	Dicot Seeds

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will perform the following activity for elaborating the characteristics of seeds.
- Techer will show the pictures of seeds to the students ans will ask them to separate the monocot and dicot seeds.

_____ _____

_____ _____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students that What would happen if the **conditions necessary for germination of seeds are not fulfilled.**

Teacher will ask the students:" see the pictures of seeds and write the conditions that are necessary for the germination of seed.

Students will observe the seeds by seeing the pictures.

- Teacher will make 25 PAIRS; they will discuss and complete it in pair.
- Teacher will ask the students to answer Q1 after their observations.
- **Q1:Write the conditions necessary for the germination of seeds?**

Conditions necessary for seed germination:

1:_____ **2:**_____

3:_____ **4:**_____

Explain

Time Duration 05 minutes

In this phase Teacher will explain the topic by main definitions,headings and by showing the picture charts.

- Teacher will define and explain seed germination in such a way that,
- **The growth of plant from a seed is called seed germination.**
- Teacher will also explain the conditions necessary for seed germinations,that are **soil,water,air,temperature,light** one by one and will explain the adverse effects on the growth of seed if conditions are not available.
- Teacher will explain that the growth of seed is not possible in the absence of the conditions necessary for the seed germinations e.g air,water,light etc

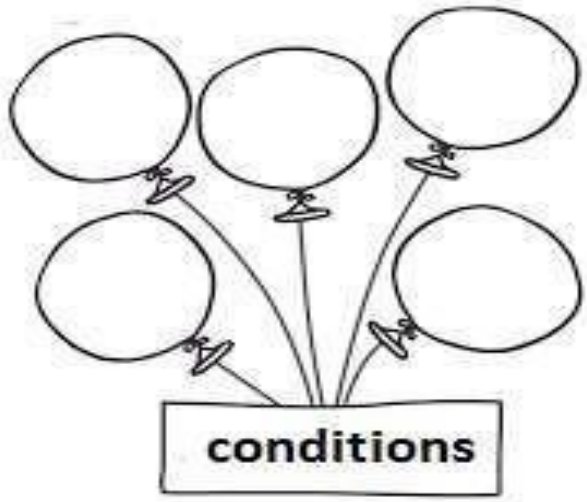
In this phase students will complete their task by completing **Graphic organizrer**, while working in 05 groups.

Group leader will explore their idea in front of class

Activities

- Students will be asked, see the pictures of seed germination and write the conditions
- necessary for the germination of seeds.
- Students will discuss the conditions for the germination of seeds with each other.
- Teacher will guide them while working in groups.
- Group leader will present their work in front of class
-

Q1: Write the conditions necessary for seed germination in the graphic organizer?



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the column of given activity for further clearance of concepts.

Activity:

- Teacher will ask the students that what will happen if the conditions necessary for the
- germination of seed are not fulfilled?
- Teacher will then summarize the lesson and write different types of seeds on the board and will ask the students to separate the monocot and dicot seeds?
- Students will be asked the question that can we grow a seed in the absence of necessary conditions like water,air,soil,temperature and light?
- Students will separate the monocot and dicot seeds in the table given below.
- Then in the next activity students will be asked to write the conditions necessary for the germination of seeds.

SEEEDS: Maize, Gram, Peas, Peanuts, French beans, Mangoes, Almond, Rice

Q1; Separate the above monocot and dicot seeds?

S.No	MONOCOT SEEDS	DICOT SEEDS
01		
02		
03		
04		
05		
06		
07		
08		

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually..
- Teacher will write the question for individual evaluation.
- Teacher will ask question by following manner.

Q.No1; Define Monocot seeds and Dicot seeds?

Monocot Seeds: _____

Dicot Seeds: _____

QNo2: What are the conditions necessary for the germination of seeds?

1:_____

2:_____

3:_____

4:_____

5:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to write atleast five examples of monocot and dicot seeds.

- Students will then write the difference between Maize seed and French Bean in one line.
- Students will finally write the conditions necessary for the germination of seeds for further clearance of concept.

Monocot Seeds	**Dicot Seeds**

Activity:
Q1: Students will be ask to answer the question that can we grow a seed in the absence of the conditions necessary for the germination of seed?

Answer the above question in Yes or NO?

_____

Q2: Students will be asked to write the difference between Maize seed and French Bean in one line?

Maize Seed **French Bean**

Lesson Plan-6

Activity Title:	Environmental pollutionn and it's reduction
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Key charactristics of environmental pollutionn and it's reduction
Objectives	Students will be able; To define: 1:Key characteristics of environmenta Pollution 2: Reduction of environmental pollution

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- In this phase teacher will ask the students that what is pollution do you have
- Any idea about environmental pollution.
- Teacher will then ask the students to tell few environmental changes that are harmful for human health.
- Student will tell the unwanted and un necessary changes in the environment and teacher will note them.

Unwanted changes in the environment:

01		06	
02		07	
03		08	
04		09	
05		10	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask to students, see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.NO.1 Following are few pictures shown below. Identify the type of pollution in each of the picture.

_____ _____

_____ _____

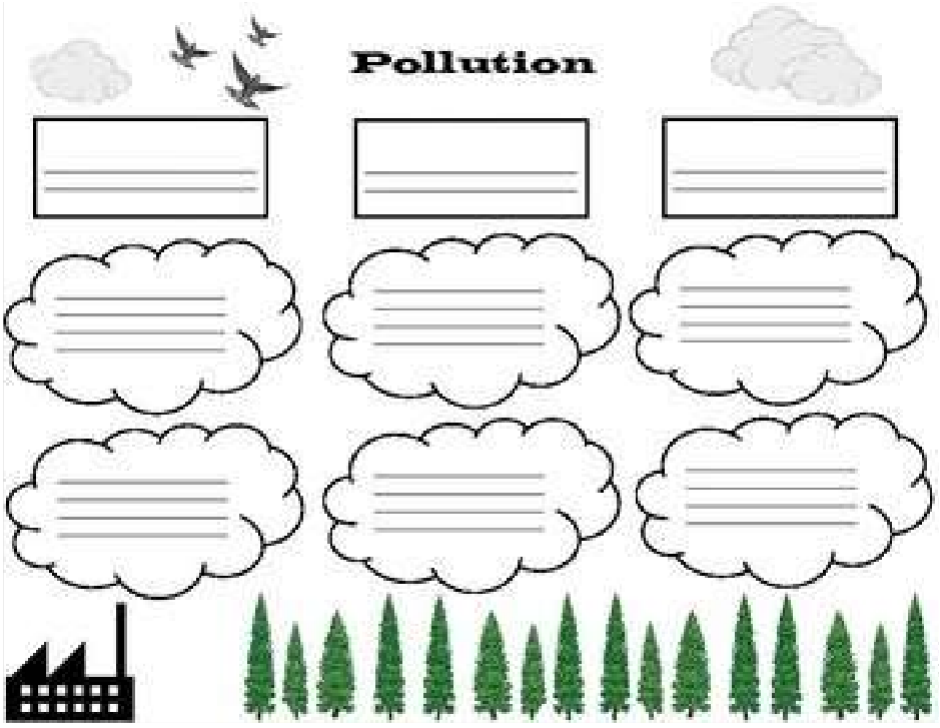
Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** in front of students for **Pollution and key characteristics of pollution.**

- Teacher will ask the students; write down three major types of pollution.
- Students will also identify other types acording to the pictures shown on the
- Chart.
- Students will see the pictures and will write the main types of pollution.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs and write it in the graphic organizer below.



Explain

Time Duration 05 minutes;

In this phase teacher will define and explain pollution as **'The harmful change in the environment is called pollution.'**

1. Teacher will then explain three main kinds of pollution
2. 1: Water pollution (Contamination of lakes,oceans, and underground water mostly by human activities)
3. 2: Air pollution (Contamination of air when harmful gases, dust particles or smoke are introduced into the atmosphere)
4. 3: Land pollution (Contamination of land or earth's surface)
5. Teacher will also explain the remedial steps through which environmental pollution can be controlled e.g by the use of bio degradable materials,adoptiong three R's policy,proper disposing off the unwanted material and by keeping our environment clean.

- In this phase students will complete their task by making key points, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked, see the picture chart and write down the ways to prevent
- pollution after seeing the picture chart?
- Group leader will present their work in front of class.

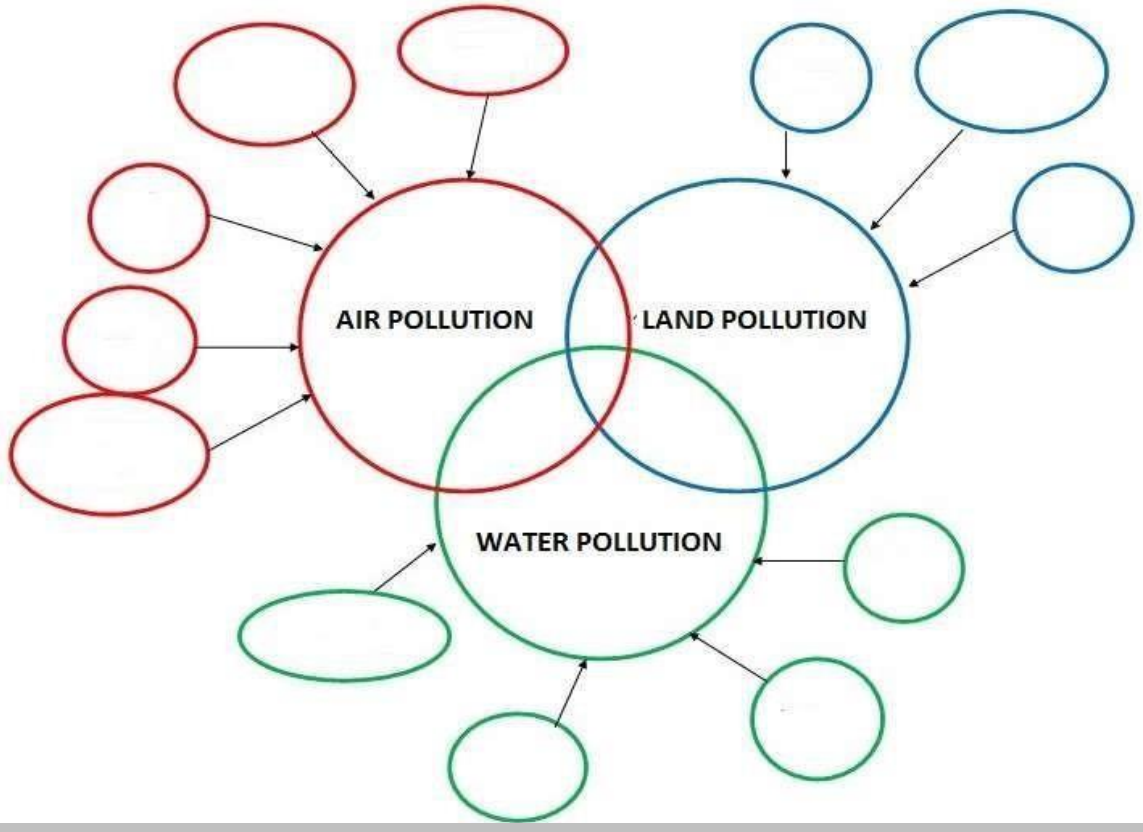
Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the task in the GRAPHIC ORGANIZER for further clearance of concepts.

Activity:

- Teacher will take **another picture chart** of different kinds of pollution like air water and land pollution along with their sources.
- Students will observe the pictures present on charts and discuss with each other in groups and complete the task by writing the ways to control environmental pollution.



Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the definition of pollution and it's main types.
- Teacher will ask questions by following manner
- Q.No1; Define pollution and write down three main types of pollution?
  Definition:_____
  QNo 2: How many types of pollution are there?
  Answer:_____

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will do their work individually.
- Teacher will assess the students that how much they have learnt during the lesson.
- Teacher will ask the students to answer the given question No 1.
- Q1:What are the ways to reduce environmental pollution write atleast three of them?

Air pollution	Water pollution	Land pollution

Khyber Pakhtookhwa Text Book Board Peshawar

General Science

Lesson Plan Manual

Teacher's Mannual
Grade : 5th, Chapter No. 5

Lesson Planing
7-E Learning Model

LESSON PLAN -1

Activity Title:	Properties and arrangement of particles on three states of matter.
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Properties and arrangement of particles on three states of matter
Objectives	1.To describe the properties of three states of matter o the basis of arrangement of particles

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to arrange the things present in the surroundings according to their properties.
- for example, teacher will ask to enlist the solid, liquid and gas particles which you see in your surroundings. I, e, Books, lunchbox table, air, water, chair, juice, perfume.
- Students will arrange the things according to their arrangement of particles structure in respective columns.

ARRANGEMENT OF PARTICLES

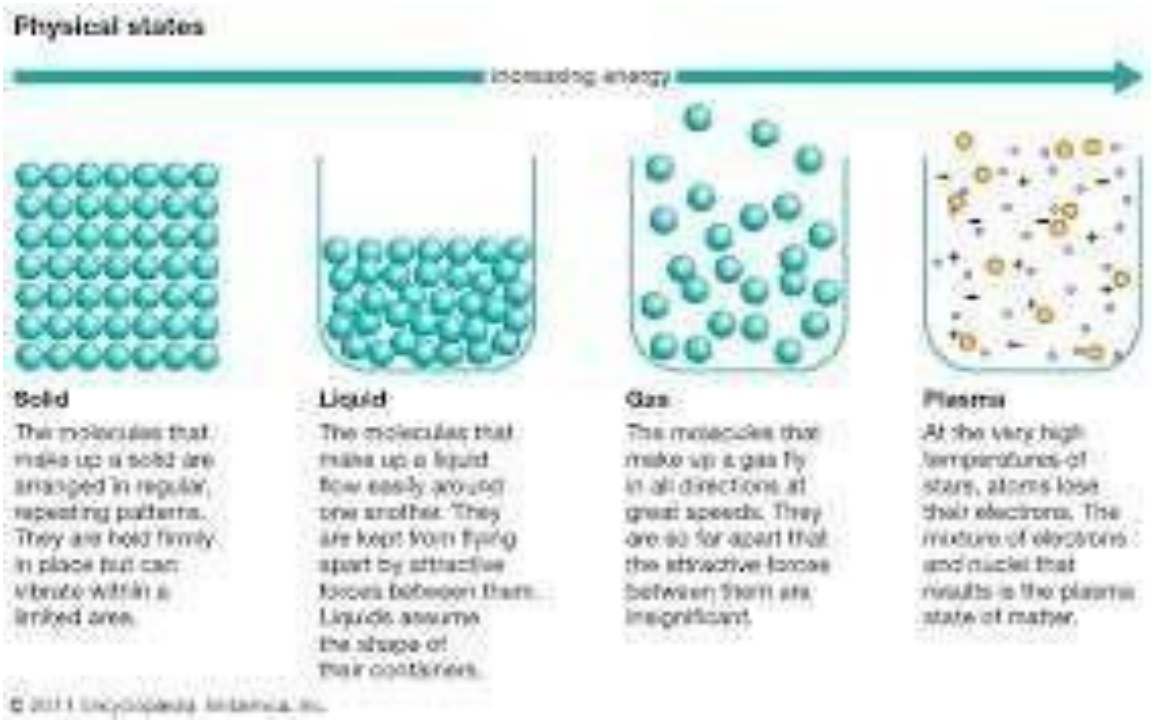
SOLID	LIQUID	GAS

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask students to see the charts and discuss with each other and answer the following question after discussion.
- Q.1 Identify the state of matter and give example.



State;

(1)_____(2)_____(3)_____

Example (1) _____(2)_____(3)_____

- How do the particles move in solid, liquid and gas?
- Solid: _____
- Liquid: _____
- Gas: _____

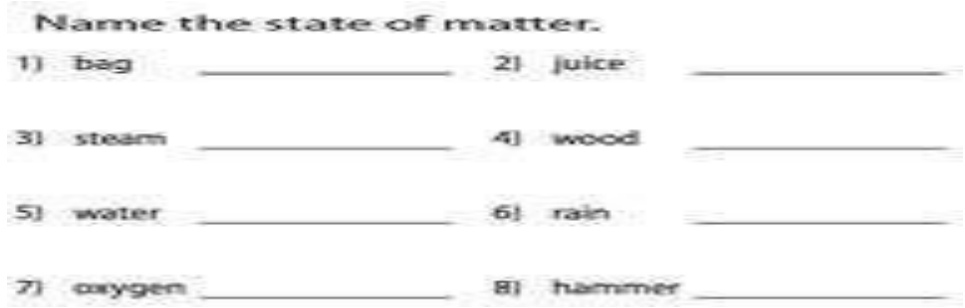
Explore

Time Duration 05 minutes;

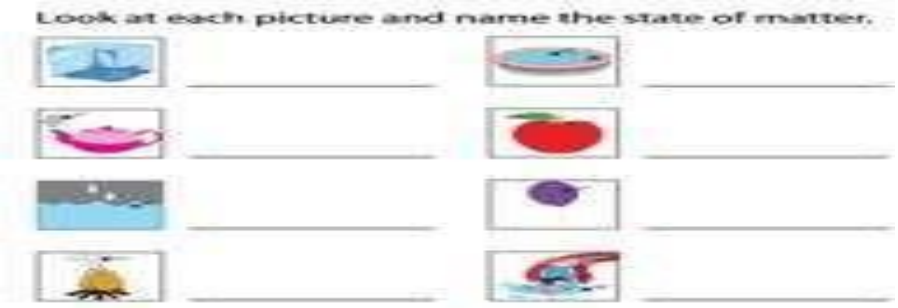
INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** of particles of matter.

- Teacher will ask the students to make a list of those things which have arrangement of particles.
- List of particles are bag,juice,wood,rain,hammer,stream,water,oxygen.
- Teacher will further ask the students the following question.
  Q.1. Name the state of matter given below?



Q.2. look at each picture and write the state of matter?



Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using table activity given below**.**

Activities

- Students will be asked to see the pictures of different material things.
- Students will discuss about characteristics and arrangement of particles.
- Teacher will guide them while working in groups.
- Students will write characteristics and arrangement of things like table, milk, juice, Oxygen, iron, stone, petrol and air.

Q.1. Arrange the following above things in given table below, whether they are solid, liquid or gas. Tick and cross them?

Name of things	**Solid**	**Liquid**	**Gas**
Table			
Milk			
Juice			
Oxygen			
Iron			
Stone			
Petrol			
Air			

Elaborate

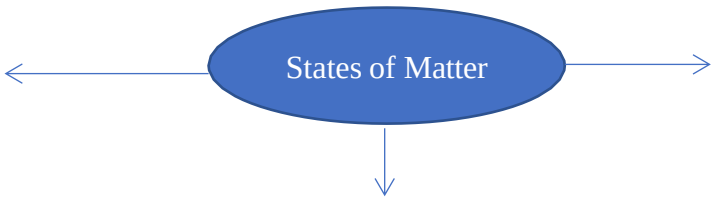
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of matter according to their properties and arrangement of particles.

Activity:

- Teacher will ask the students to complete the web sketch by writing arrangement of particles in matter.
-
- Students will discuss about particles arrangement.
- Group leader will discuss with each other and will complete the web sketch after completion and present work in front of students

Web Sketch completion for writing states of matter



Evaluate

Time Duration 05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will recall the things explained in tables provided individually.
- Students will be asked to complete activity individually on given charts.

Q.1; Put a tick in front of right statement and cross for wrong statement.

• Things with similar arrangement of particles will be placed in same group.	
• Solids are closely packed particles.	
• Liquid particles are far away from each other	
• Gas particles are close to each other.	
• Solid particles can easily be moved.	

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context for concept clearance.

INSTRUCTIONS FOR EXTEND PHASE;

- Students will be asked to complete their task in new context for extending their ideas.
- Students will recall the things explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q.NO1; Write the basic characteristics of states of matter.

States of matter	**Characteristics**
Solid	• _____ • _____
Liquid	• _____ • _____
Gas	• _____ • _____

LESSON -PLAN 2

Activity Title:	Arrangement of particles in three states of matter through model
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Arrangement of particles in three states of matter through model.
Objectives	Students will be able; 1. To demonstrate the arrangement of particles in three states of matter through models.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Teacher will be asked the following questions. Students will be answered the following questions.
- What is matter?
- _____
- What are three states of matter?
- _____
- How matter changes in different status?
- _____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask student to observe different states of matter presented in front of them, discuss with each other and answer the following question after discussion.
- Q.1 Following are few things listed below. Place them in respective column
  Table, bottle, juice, perfume, air in balloon,

Types of Matter

Solid	Liquid	Gas

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present different materials as model in front of students.

- Teacher will ask the students to see things and write them in their respective columns on basis of their characteristics.
- Things will be cooking oil, CNG, Hammer, chalk, juice, ice, eraser, air

States Of Matter

States of matter	Solid	Liquid	Gas
Cooking Oil			
Chalk			
Juice			
Eraser			
Hammer			
CNG			
Air			

Explain

Time Duration 05 minutes;

- In this phase students will complete their task by using **web sketch activity**
- Students will be asked to see the model and arrange them according to states of matter.
- Teacher will guide them while working in groups.
- Students will arrange types of matter in different categories.
- Students will write the characteristics of the following things table, chair, juice, co2 in soda water, gas cylinder, balloon, petrol, glass,

States of matter	**Solid**	**Liquid**	**Gas**
Glass			
Chair			
Juice			
Soda Water			
Cylinder			
Balloon			
Petrol			

Elaborate

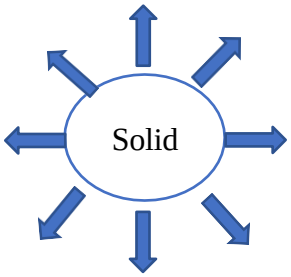
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of arrangement of particles in three states of matter through model.

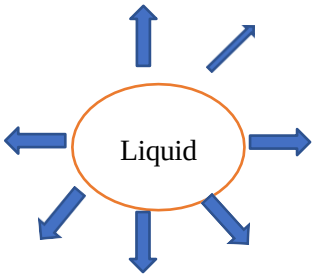
Activity:

- Teacher will ask the students complete the web sketch by writing arrangement of particles in three states of matter.
- Students will discuss with each other and after discussion complete the task in web sketch
- Group leader will present a work in front of class

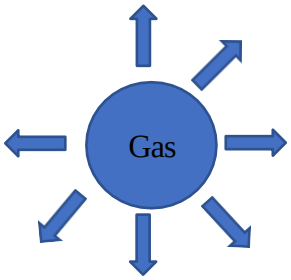
Web Sketch completion for arrangements of solid particles



Web Sketch completion for arrangements of Liquid particles



Web Sketch completion for arrangements of Gas particles



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will remind the things and explained in tables provided individually.
- Model will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q. 1; Put a tick in front of right statement and cross for wrong statement.

- Things with definite shape are solids
- Things which cannot flow are liquid
- Gases can evaporate easily
- Things are tightly packed in solids.

Extend

Time Duration ;05 minutes

Individual work will be given to students to complete their task in new context.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will recall the things and explained in tables provided individually.
- Charts will be provided to students and activity will be designed in table available on each chart
- Q.NO1; write down the definitions of states of matter.

States of Matter	**Definitions**
Solid	
Liquid	
Gas	

LESSON PLAN -3

Activity Title:	Effect of heat on movement of particles during change in state
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	1-Explain the effect of heat on movement of particles during change in state.
Objectives	Students will be able; 1- To investigate the effect of heat on particles motion during change in state.

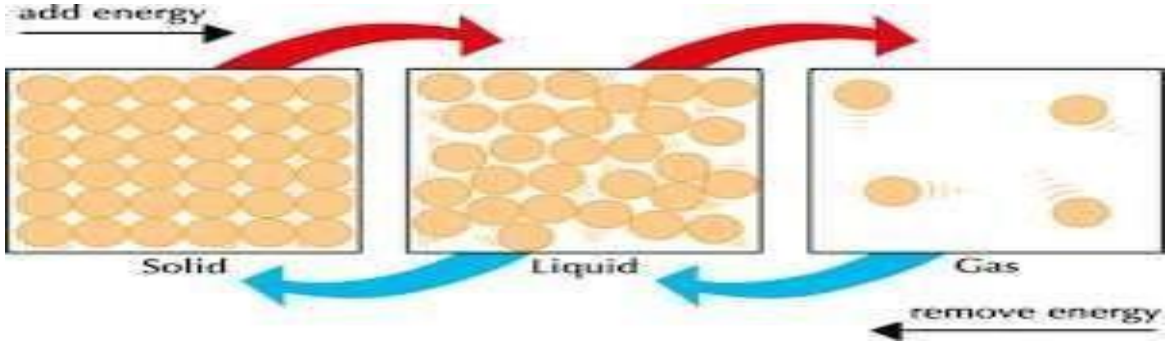
Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to observe the effect of change in state of matter according to the motion of particles.



- Students will observe the above picture and answer the following questions?

- Q.1.How particles move when gets heated?
- Ans_____
  _____
- Q.2.How solid response after getting heat?
- Ans._____
- _____
- Q.3. How liquid response after getting heat.?

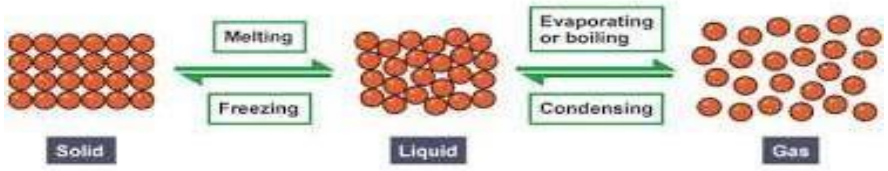
- Ans_____
- _____
- Q.4. What is effect of heat on ice, water, and gases.?
- Ans._____
- _____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask students to see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.1 How following changes occur?
- Think of the above conversion of three states what will happen if we reverse the process.



- Students will observe the picture and make a sense about these particles and after discussion in groups will answer.
- Q.1.What will happen to water when it will be freezed?
- Ans._____
- Q.2.What change you will be seen in water when you heated ice?
- Ans_____
- Q.3.What happened with water when you boil it?
- _____

Explore

Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart** of effect of heat on change in state of matter.

- Teacher will ask the students matter can be change from one from to another form after heating. Ice melt in to water(liquid). when water is heated further, it starts boiling. These bubbles reach the surface and escape as vapour in to air.
- Teaher will present an activity about ice in beakers

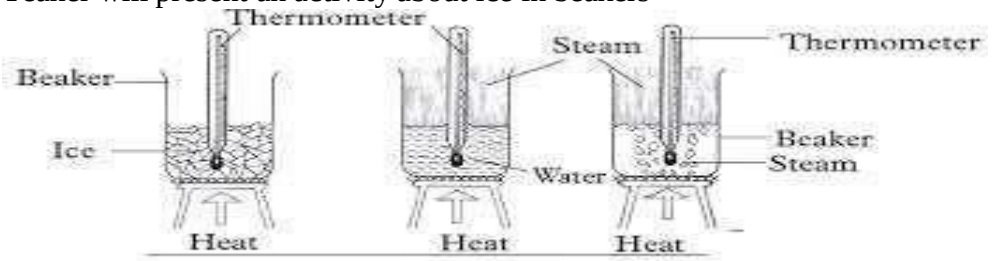


Fig 3.4 Heating ice

- **Students will be observed the above picture and completed the following activity**

Activity

Q.1. When heated ice what happened?

Ans._____.

_____

Q.2. When ice change in to water what is the state of matter is called?

Ans._____

_____

Q.3. When water starts boiling what is the name of this state of matter?

Ans_____

_____

Explain

Time Duration 05 minutes;

- In this activity students will complete their task by **using brain storming activity** while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked to see images of different material things.
- Students will see the effect of heat on material things.
- Teacher will guide them while working in groups.

Teacher will ask the students:

Q.1. What happen to ice when it is heated?

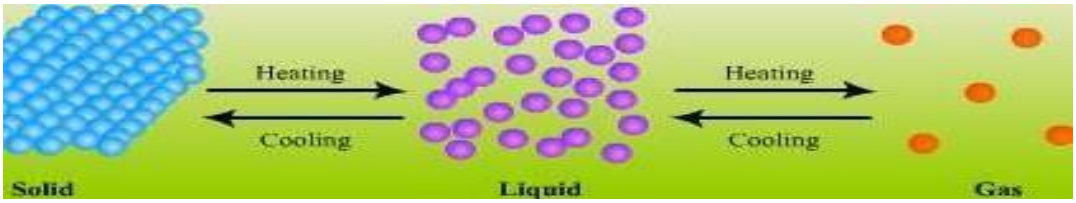
Ans_____

Q.2. What happens to water if you put it in the freezer?

Ans_____

_____

Heating effects on state of matter



Take a piece of ice on a plate and let it melt with the help of a candle.

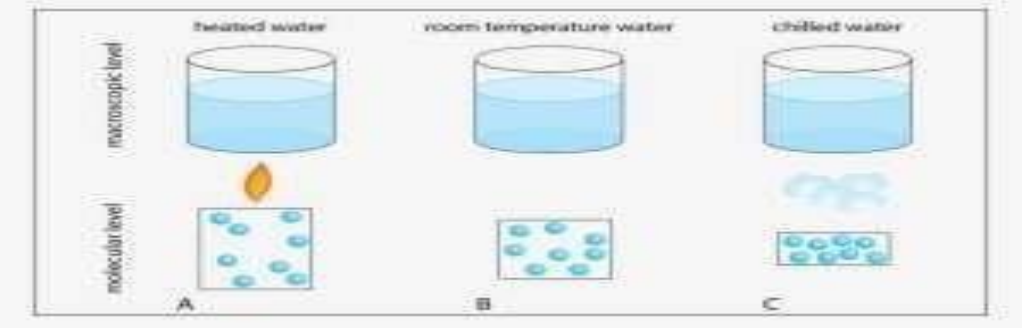
Inform the students that:

- -Heat has changed the solid ice into liquid water.
- -This process is called melting and temperature at which ice melts is called the melting point of ice.
- when a solid is heated, its particles start vibrating faster and attraction between these particles get less effective. At a particular temperature, the particles lose their fixed positions and the arrangement in them go away and the solid loses its fixed shape.
- It is converted into its liquid.

- **Teacher will further explain the state of matter**
- Every substance in the universe is made up of matter that can exist in a number of different forms called states. Almost all matter on Earth exists in three different states: solid, liquid and gas. These states of matter have very different properties, or ways they behave and appear. Scientists use a model to explain these different properties called the particle model. According to the particle model: • all substances are made up of tiny particles . • the particles are attracted towards other surrounding particles;
- The particles are always moving; •
- The hotter the substance is the faster the particles move. Solids -In solids the particles are very

ACTIVITY

- An image will be drawn that shows about how fast the molecules of water in each beaker are moving.



Q.1.Ask the students write in three points the effect of heat on water given below?

EFFECT OF HEAT ON WATER

1 -

2 -

3 -

Elaborate

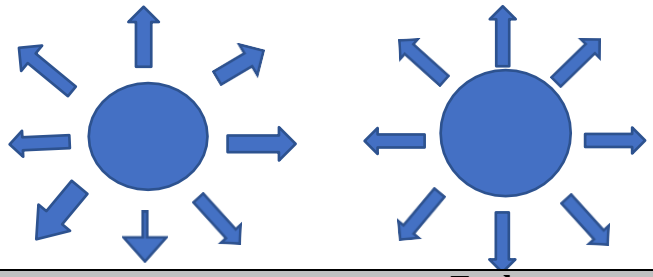
Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the **web sketch** of solid, liquid and gas when heated solid particles for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing their states of matter of solid, liquid and gas.
- Students will discuss with each other about the basic characteristics of solid, liquid and gas i,e Solid particles are attached with each other rigidly and they are also called tightly packed particles. Solid particles can't change their shapes.
- While liquid particles are not tightly packed particles it can change their shape when poured in any pane or pot,
- In a similar way gas particle are so far from each other, gas will be evaporated when open it for example ether and perfume bottles when opened it will be evaporated in room etc.
- Group leader will discuss with each other and will complete the web sketch after completion and present work in front of students

Web Sketch completion for writing characteristics (**solid, liquid, gas**)



Evaluate

Time Duration: 05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will recall the things and explain the process.
- Students will explain the states of matter by classifying the things in to solid, liquid and gas.

Q.1.Classify the following things in to Solids, liquids and gas and complete it in table given below by doing tick and cross.

S. No	Name of things	Solid	Liquid	Gas
1-	Cooking oil			
2-	CNG			
3-	Hammer			
4-	Chalk			
5-	Juice			
6-	Carbonated drink			
7-	Ice			
8-	Eraser			
9-	Air			
10-	Carbon dioxide			
11-	Hydrogen			

Extend

Time Duration ;05 minutes

Group work will be given to students to complete their task in new context for extending their ideas.

INSTRUCTIONS FOR EXTEND PHASE;

- Students will be asked to complete their task by using given table activities individually.
- Students will recall the things and explained in tables provided in groups.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table individually**.**

Q.1. Draw the effect of heat on movement of particles in following three states.

Types of matter	**Effect of heat**
Solid	
Liquid	
Gas	

LESSON PLAN -4

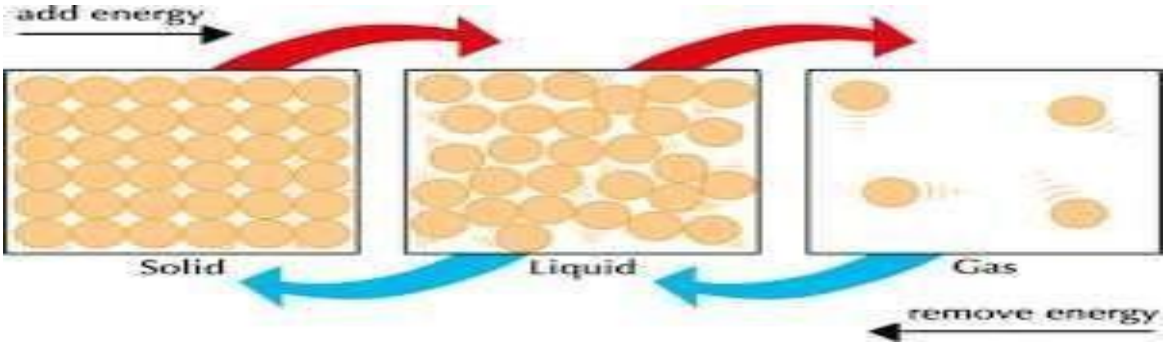
Activity Title:	Processes involved in changing state of matter
Grade /Level/Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Explain the effect of heat on movement of particles during change in state.
Objectives	Students will be able; 1- To investigate the processes involved in changing state of matter

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- Students will be asked to observe the effect of change in state of matter.



- Students will observe the above picture and answer the following questions?

- Q.1.What is freezing point of ice?
- Ans_____

- Q.2.What is boiling point of water?
- Ans._____

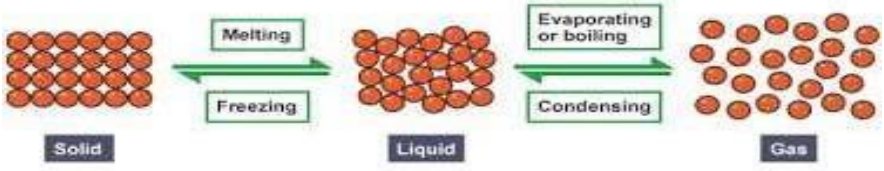
- Q.3. Define evaporation?
- Ans_____
  _____

- Q.4. Explain the effects of heat on arrangement of particles of water?
- Ans._____
  _____

Engage
• Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask students to see the pictures of charts and discuss with each other and answer the following question after discussion.
- Q.1 How following changes occur?
- Think of the above conversion of three states what will happen if we reverse the process.



- Students will observe the picture and make a sense about these particles and after discussion in groups will answer.
- Q.1.Define evaporation process?
- Ans._____

- Q.2.Define the condensation?

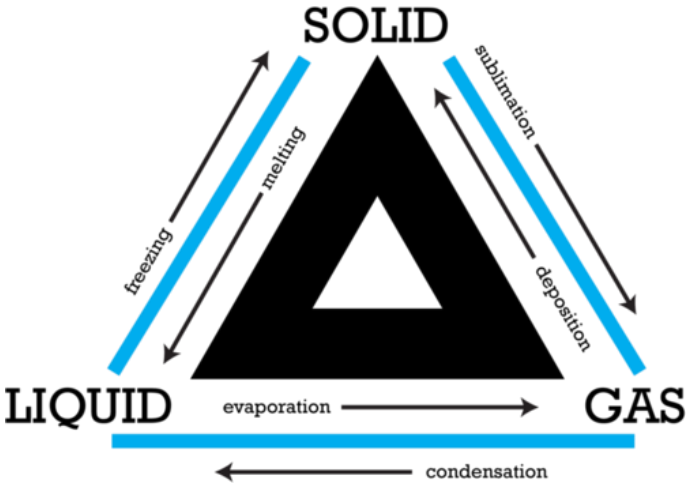
- Ans_____

Explore
Time Duration 05 minutes;

INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will describe the diagram given below.

- Teacher will ask the students matter can be change from one from to another form after heating. Ice melt in to water (liquid). when water is heated further, it starts boiling. These bubbles reach the surface and escape as vapour in to air.
- Teaher will present an activity about melting process, freezing process and boiling process.



- **Students will be observed the above picture and completed the following activity**

Activity

Q.1. When heated ice what happened?

Ans._____.

_____

Q.2. When ice change in to water what is the state of matter is called?

Ans._____

_____

Q.3. When water starts boiling what is the name of this state of matter?

Ans_____

_____

Q.4. Define the process how water vapors change into steam?

Explain

Time Duration 05 minutes;

- In this activity students will complete their task by **using brain storming activity** while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked to see the evaporation and condensation process.
- Teacher will guide them while working in groups.

Teacher will ask the students:

Q.1. What happen to ice when it is heated?

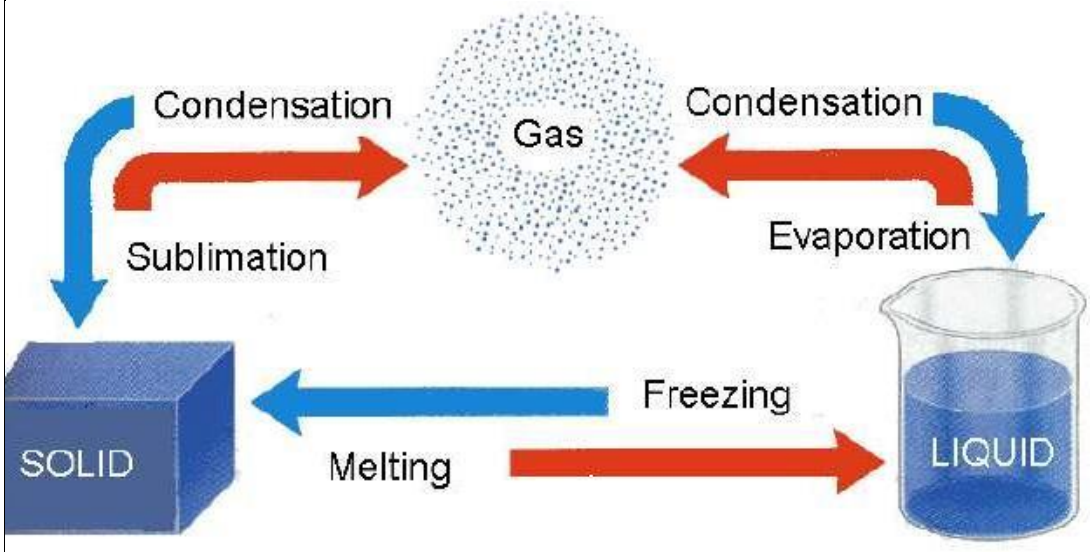
Ans_____

Q.2. What happens to water if you put it in the freezer?

Ans_____

_____

Processes involved in changing sate of matter



Teacher will explain the processes involved in changing state of matter in front of students.

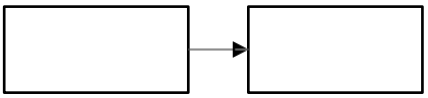
Process	Definition
Melting process	It is the change of state from solid to liquid when heat is added to material.
Freezing process	It is the change of state from liquid to solid when heat is removed from the material.
Boiling process	It is the change of state from liquid to gas when heat is added to materials.
Evaporation process	It is the process of converting liquid into gaseous state without boiling.
Condensation process	It is the process by which vapours change into liquid on cooling.

- **Teacher will further explain processes involved in state of matter.**
- **Students will observe the above activity in table ,discuss with each other and after discussion complete the activity in groups.**

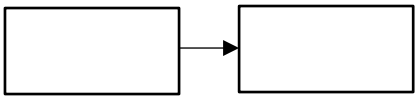
Activity

Q: write the steps process involved in changing state of matter, in given boxes below.

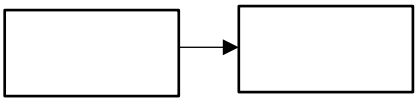
Melting



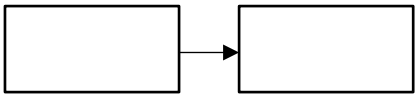
freezing



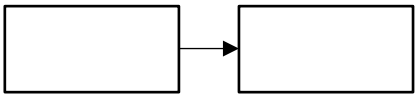
Boiling



Evaporation



Condensatio



Elaborate

Time Duration; 05 minutes

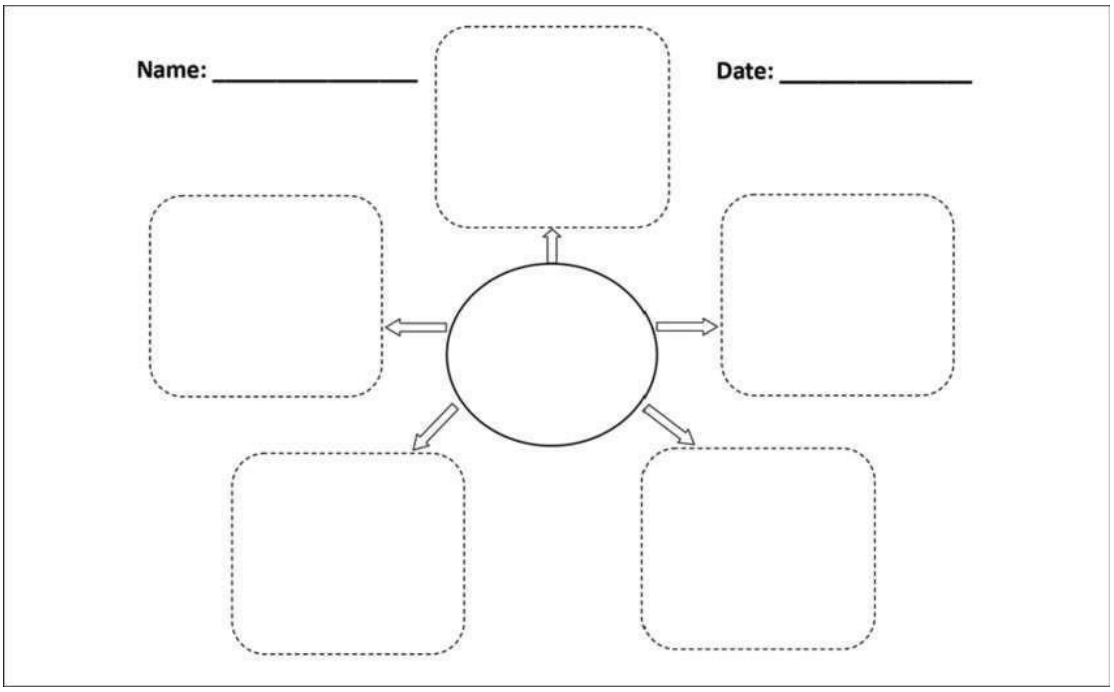
- Teacher will make 05 groups of students and ask to complete the **web sketch** of solid, liquid and gas when heated solid particles for further clearance of concepts.

Activity:

- Teacher will ask the students complete the web sketch by writing processes involved in changing state of matter.
- Students will discuss with each other about the basic processes involved in changing state of matter
- **Step1**-Melting process: It is the change of state from liquid to solid when heat is removed from material
- **Step2**-Freezing point: It is the change of state from liquid to solid when heat is removed from the material
- **Step3**- Boiling process: It is the change of state from liquid to gas when heat is added to material
- **Step4**-Evaporation process: It is the process of converting liquid in to gaseous state without boiling
- **Step5**- Condensation process: It is the process by which vapors change in to liquid on cooling, the movement of molecules become slow which changes vapors in to liquids

- Group leader will discuss with each other and will complete the web sketch after completion and present work in front of students

Web Sketch completion for writing processes involved in changing state of matter

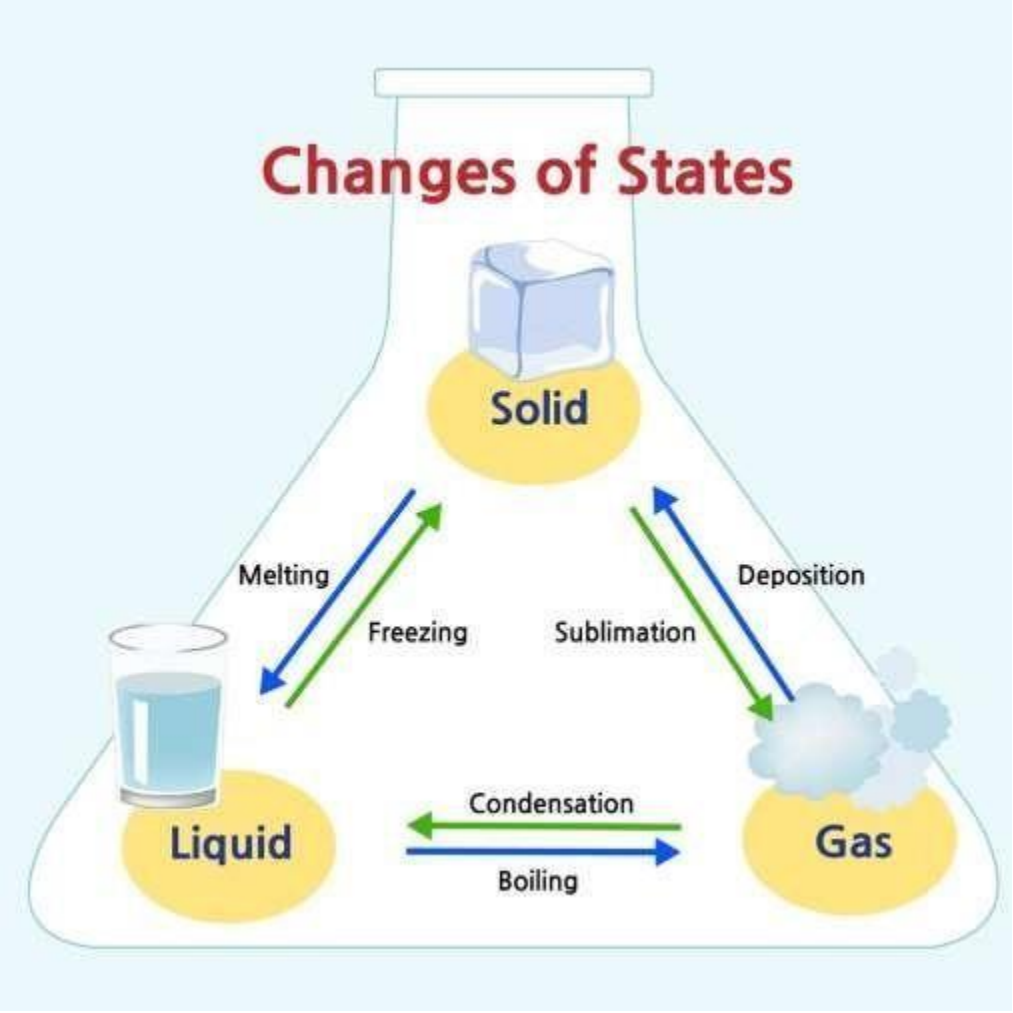


Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.
- Students will recall the things and explain the process.
- Students will explain the processing that are involved in the change of states of matter by thinking, reading topic.



Q.1.Write down the reversible and irreversible changing states of matter?

Ans; **Processes involved in changing states of matter**

Reversible change_____

_____

_____

Irreversible change_____

_____

_____

Q.2.Separate reversible and irreversible processes from above diagram activity.?

Reversible change	**Irreversible change**

Extend

Time Duration ;05 minutes

Group work will be given to students to complete their task in new context for extending their ideas.

INSTRUCTIONS FOR EXTEND PHASE;

- Students will be asked to complete their task by using given table activities .
- Students will recall the things and explained in tables provided in groups.
- Charts will be provided to students and activity will be designed in table available on each chart and students will be asked to complete the task in given table **.**

Q.1. Define each step the processes involved in changing state of matter in given table below.?

Processes in changing state of matter	**Definition of each step**
1-Melting process	
2-Freezing process	
3-Boiling process	
4-Evaporation process	
5-Condensation process	

Lesson Plan-5

Activity Title:	Condensation and Evaporation in the Water Cycle
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Condensation and Evaporation in the Water Cycle
Objectives	1. To describe the role of evaporation and condensation in the water cycle.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE.

Teacher will ask the students that define the following terms

Rain,evaporation and condensation.

- Teacher will ask to students the following questions
- Q.1.Have you seen rain in environment ?

Ans_____

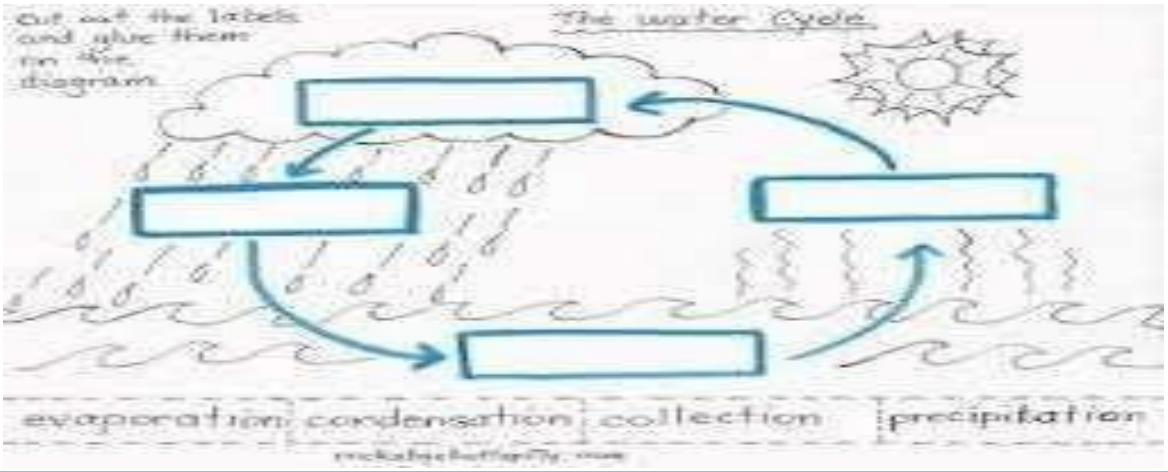
Q. 2Define evaporation?

Ans_____

- Q.3.Define condensation?

Ans_____

- Teacher will make the following sketch of process of evaporation and condensation on the board.
- Clouds, Rain, Water, Sun, Sunlight, River, Stream
- Teacher will point towards the board and will ask the students about the process of evaporation and condensation ?
- Students will observe the picture of cycle and discuss with each other and complete the blank spaces given in this cycle sketch.



Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

•Teacher will draw sketch to describe the process of evaporation and condensation in cycle given below.

- Teacher will ask students that

Q.1. Have you ever seen the evaporation in rivers/oceans (Yes/No)

Ans:_____

Q.2. How clouds are formed?

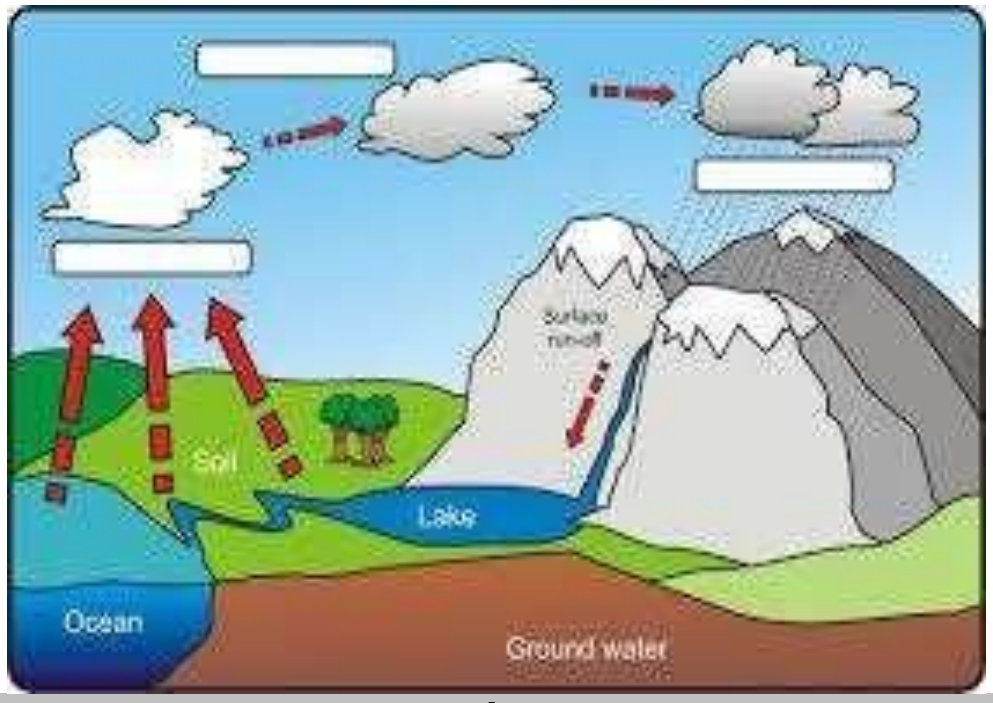
Ans:_____

Q.3. How water move when get evaporated?

Ans:_____

Q4:How water changes occurs when condensed?

Ans:_____



Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart of water cycle** in front of students to describe the **process of evaporation and condensation**.

- After explaining teacher will ask to note the important words like evaporation, condensation, percipitation, transportation,infiltration

.

.

- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Q.1. write the meaning of the following words in the given table.

Words	**Meanings**
Evaporation	:_____
Condensation	:_____
Infiltration	:_____
Percipitation	:_____
Transportation	:_____

Explain

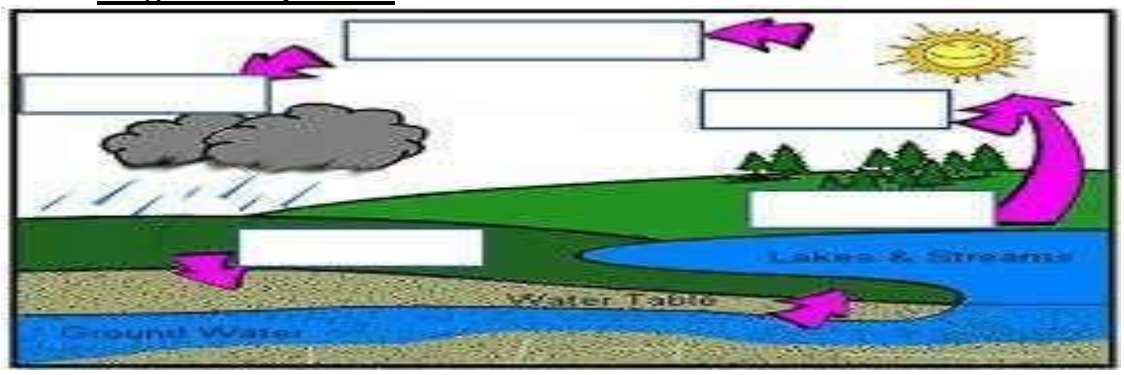
Time Duration 05 minutes;

- In this phase students will complete their task by completing **Web Sketch Activity**, /Diagram completion while working in 05 groups. Group leader will explore their idea in front of class

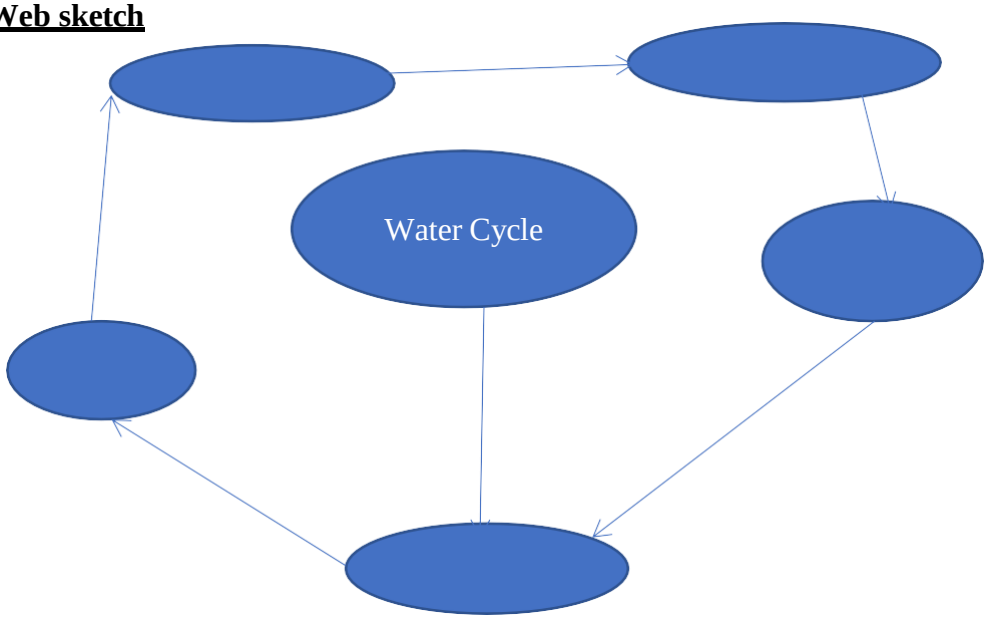
Activities

- Students will be asked to see the picture of water cycle
- Students will discuss the process of water cycle with each other in groups .
- Teacher will guide them while working in groups.
- Students will write the main process in web sketch in front of class as well as in diagram

1. **Diagram completion :**



2. **Web sketch**



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to complete the web sketch by writing evaporation and condensation for water cycle.

Activity:

- Teacher will discuss with each other about water cycle.
- Group leaders will discuss with each other and complete work and present with each other.

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will recall the things and explain in tables provided individually.

- Activity will be designed in table available on each chart and students will be asked to complete the task in given table individually.
- Teacher will ask question by following manner
  Q. 1. Put a tick in front of right statement and cross for wrong statements.

Statements	**Answers**
In water cycle evaporation is the first step	
Condensation helps in cloud formation.	
Condensation takes place in high temperature areas.	
Sun plays important role in evaporation.	
Evaporation takes place under low temperature.	

Extend

Time Duration: 05 minutes

Individual work will be given to students to complete their task individually in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will recall the things and explained in tables provided individually.

- Teacher will provide charts and activity will be designed in each table and chart
- Q.1.Define following processes

S.NO	Processes	Definition
1	Condensation	
2	Evaporation	
3	Water Cycle	
4	Heat	

Lesson Plan-6

Activity Title:	Identification and description of forms of moisture in the environment
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Identification and description of forms of moisture in the environment.
Objectives	1-To identify and describe the forms of moisture in the environment

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE.

Students will be asked to observe the pictures and answer the questions.

- Teacher will ask the students about the following questions .

- Have you ever seen the drops on leaves?

Ans:_____

- Teacher will ask the students observ the below picture and explain about the fog and dew?
- Teacher will ask the following question?
- What is major difference between fog and smog?

Ans:_____

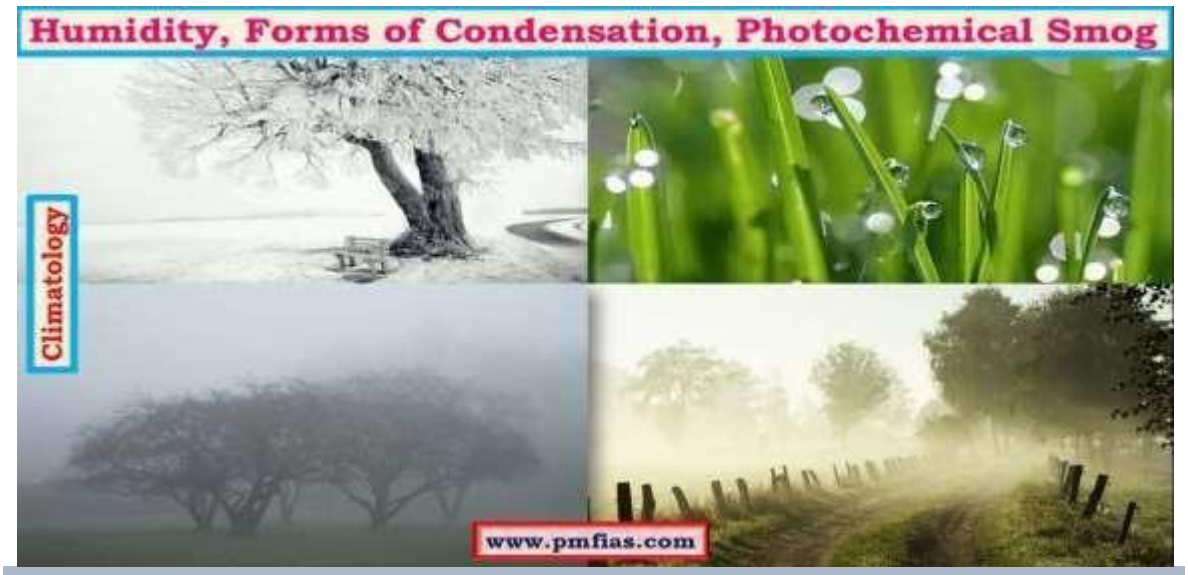
_____

- Define Humidity?

Ans:_____

- Define Condensation?

Ans:_____



Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

•Teacher will draw sketch on board, to describe the forms of moisture in the environment.

- Teacher will ask students that have you ever seen the moisture in the form of dew, frost, fog in the environment?
- Students will be answered Yes/No.

Q.1. How moisture is formed?

Ans: _____

Q.2. Why dew is present on surface?

Ans:_____

Q.3. Why fog covers the environment?

Ans: _____

Q1. Teacher will then ask students to write the forms of moisture on given table.

Different forms of moisture

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a **chart of moisture** in front of students to describe when and how it is formed..

- Teacher will present chart of forms of moisture to students and explain the process.
- Teacher will ask students to write the way of formation of dew, fog,frost, snow, rain in the given table.

Forms **Ways of formation**

.

.

- Dew :_____
- Fog :_____
- Frost :_____
- Snow :_____
- Rain :_____

Explain

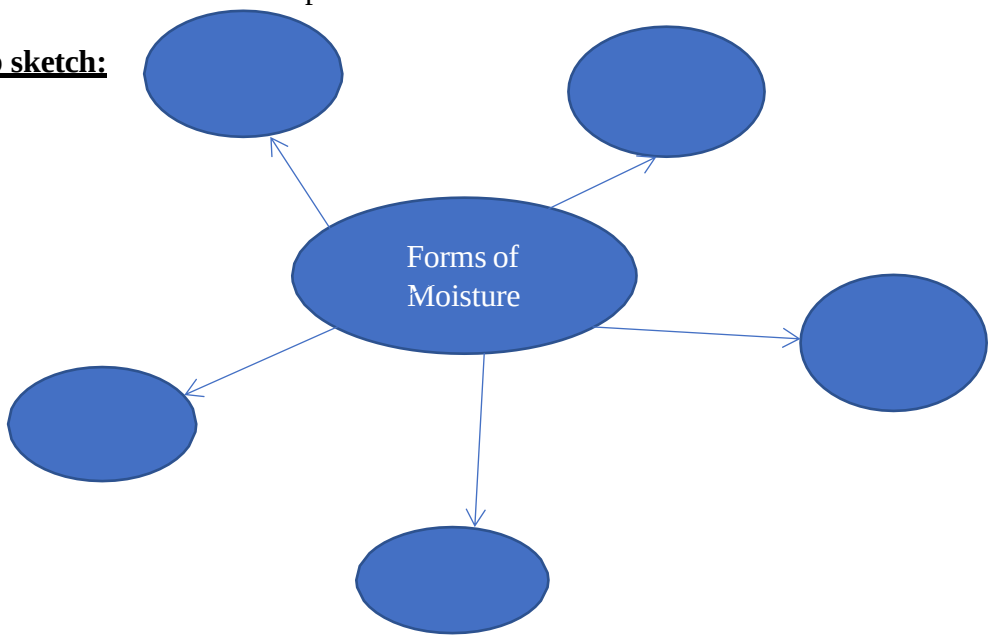
Time Duration 05 minutes;

- In this phase students will complete their task by completing **Web Sketch Activity**, while working in 05 groups. Group leader will explore their idea in front of class

Activities

- Students will be asked to see the picture of forms of moisture
- Students will discuss the formation of moisture with each other in 05 groups .
- Dew is the moisture in the air, that settles on the plants dew to cold.
- Fog is droplet of water vapours suspended in the air and are much close to the ground Fog reduces visibility.
- Frost is the process wen weather becomes cold and temperature falls to freezing point, Frost is formed on the surfaces.
- Snow frozen water falling from the sky in the form of flakes.
- Rain is the falling of water drops from vapour condence in the upper atmosphere.
- Teacher will guide them while working in groups.
- Students will write the main process in web sketch in front of class

Web sketch:



Elaborate

Time Duration; 05 minutes

- Teacher will make 05 groups of students and ask to **complete the web sketch** of different forms of moisture in environment.

Activity:

- Teacher will write the key words of moisture on board and ask the following questions.

Q.1. Write the definition of following key words in given table below?

Words	Definition
• Fog	
• Ice	
• Condensation	
• Snow	
• Rain	
• Dew	
• Frost	
• Moisture	
• Evaporation	

- Group leader will complete the task in groups and present in front of class.

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities individually.

Students will recall the things and explain in tables provided individually.

- An activity will be designed in table available on each chart and students will be asked to complete the task in given table individually.
- Teacher will ask question by following manner
  Q.1. Put a tick in front of right statement and cross for wrong statements.

Statements	**Answers**
There are five different types of moisture.	
Fall of temperature plays important role during formation of different types of moisture.	
Moisture is the tiny drops of water present in the air.	
Rain is the water droplets on leaves.	
Snow is the frozen water.	

Extend

Time Duration ;05 minutes

Group work will be given to students to complete their task in groups in new context for further concept development.

INSTRUCTIONS;

- Students will be asked to complete their task by using given table activities in groups.

Students will recall the things and explained in tables provided individually.

- Teacher will provide charts and activity will be designed in each table and charts will be provided to students in groups, to answer the following short questions.
- Q.1.Give the short answer of the following questions.

S.N	**Questions**	**Short answers**
1	What do you mean by dew?	
2	Define fog?	
3	Explain frost?	
4	What is snow?	
5	Write the definition of rain?	

Khyber Pakhtookhwa Text Book Board Peshawar

General Science

Lesson Plan Manual

Teacher's Mannual
Grade : 5th, Chapter No. 6

Lesson Planing
7-E Learning Model

Lesson Plan-1

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Friction and its causes
Objectives	To describe friction and its causes

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what happens when we push or pull and object.
- Why we don't fall on the earth while walking.
- Teacher will then ask the students why birds do not fall on the earth while flying.
- Students will answer the question and teacher will write the important points on the board.
- Teacher will then ask the students to answer the question below.
- Q1: Why it is difficult to move heavy objects on rough surfaces?
  Reason:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- During this stage teacher will perform an activity or experiment to keep the students engaged and to develop their interest.
- For this purpose teacher will make 5 pairs of the students.
- **Activity:**
- Teacher will ask the students to throw the ball on two different surface.
- One surface is smooth i.e it will be marble on the floor,while the other surface is rough i.e it will be earth.
- Teacher will ask the students that from which surface the ball is hitting back quickly,from smooth or rough surface.
- Students will count the time with the help of a stop watch.
- **Q1: On which surface the ball hits or move faster?**

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

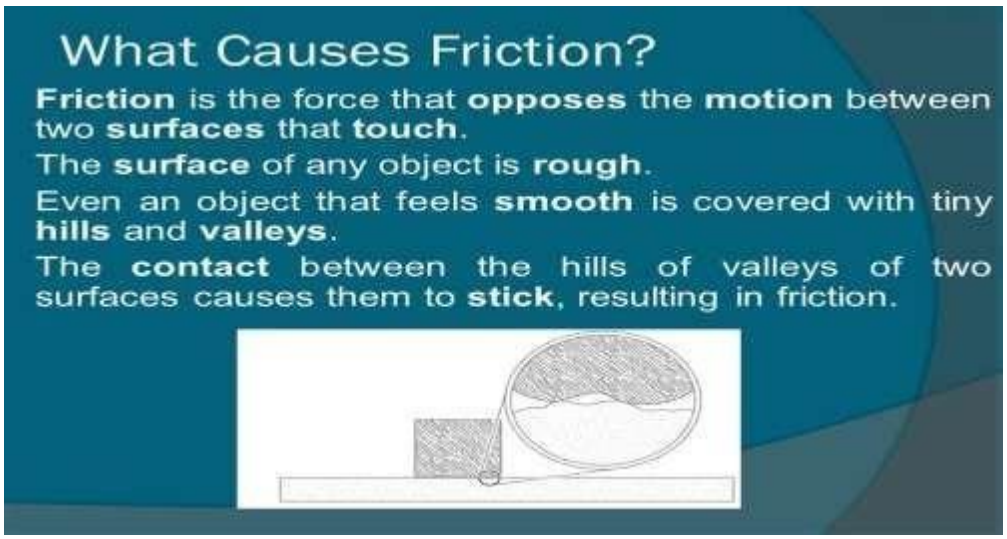
For this stage teacher will perform another activity.

- For this activity teacher will take wooden block,wooden board/ply wood,pieces of carpet or cloth,towel of same size,books and stop watch.
- Stack the books by placing one book over the other book.
- Place edge of the wooden board on the stake of the books,with the other end on the table forming a slope.
- Now place the wooden block on the top of the slope and record the time taken by the block to reach the bottom of the slope.
- Cover the upper surface of the slope with carpet/cloth and repeat the above procedure.
- Replace the carpet/cloth with towel and repeat the same procedure.
- Teacher will then ask the students what did you observe answer the given question.
- **Q1: On which surface block move fastest why?**
- Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain friction that Friction is a force which opposes motion.
- Teacher will explain that friction acts when objects are in contact with each other.
- All solid materials have some degree of roughness ,this roughness causes friction.
- Teacher will then explain the topic with the help of picture chart.Students will see the picture chart and will answer the question given below.



Answer:_____

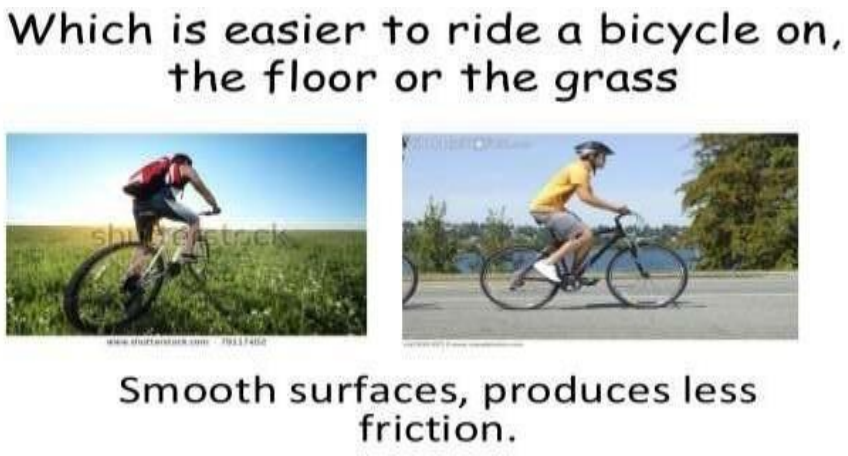
Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to se the picture chart of friction on rough and smooth surfaces.
- Students will work in group to complete the task of the activity related to the causes of friction.

Activity:



Answer: _____

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the definition and causes of friction on their note books.

Activity:

Q1:What is friction?

Answer:_____

Q2: What are the causes of friction?

Answer:_____

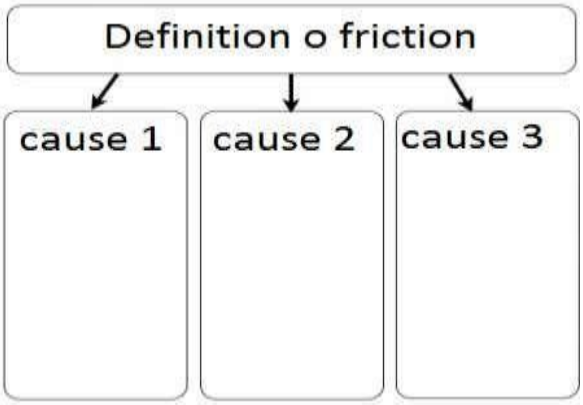
Extend

Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write the definition and causes of friction in the graphic organizer.



Lesson Plan-2

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Advantages and disadvantages of friction
Objectives	To explain the advantages and disadvantages of friction

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what happens when you apply brakes on the bicycle.
- Teacher will then ask the students why do we lubricate the machines(oiling of sewing machines).
- Students will answer the question and teacher will note the important points.
- Teacher will then ask another question from the students.
- Q1: While playing carom board,players sprinkle boric powder on board why?
  Reason: _____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- During this stage teacher will perform an activity or experiment to keep the students engaged and to develop their interest.
- For this purpose teacher will make 5 pairs of the students.
- **Activity:**
- Teacher will ask the students to roll the toy car and other available objects on smooth and rough surfaces respectively.

- Then teacher will ask the students to roll the toy car first on the smooth surface and then on the rough surface.
- Teacher will then ask the students what did you observe,what is the difference between the motion of car on smooth and rough surface.
- Teacher will ask the students to answer the question.
- Q1: Will the objects move faster on the smooth surface or on the rough surface?
- Answer:

_____

Explore

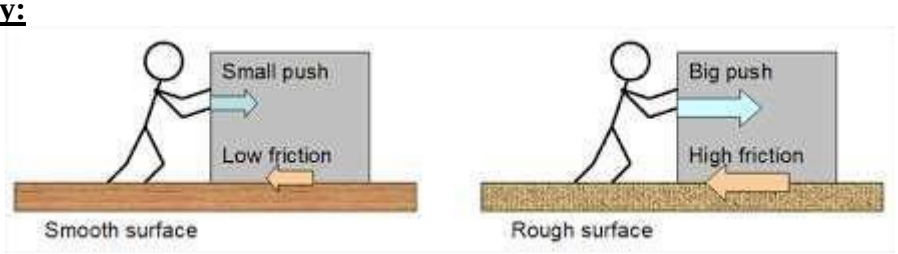
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present a chart of friction on different surfaces.

- Teacher will ask the students:" see the picture chart and observe the friction on different surfaces.For example rough surface and smooth surface.
- Students will observe the friction by seeing the pictures.
- Students will see the above pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Activity:



Q1:See the above pictures and fill the task by completing the table.

Small push	Big push

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain Advantages and Disadvantages of friction.
- Teacher will explain that friction has some advantages that it helps in walking and running, it also helps in the moving and stopping vehicles.
- Teacher will also explain some disadvantages of friction that it produces heat,which damages moving parts of the machine.
- Teacher will then explain the topic with the help of picture chart.Students will see the picture chart and will answer the question given below.

Q1:Write down one advantage and one disadvantage of friction?
Advantage:_____

Disadvantage:_____

Elaborate

Time Duration; 05 minutes
INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to se the picture chart of Advantages and Disadvantages of friction.
- Students will work in group to complete the task of the activity related to the advantages and disadvantages of friction in the table given below.

Advantages of friction	Disadvantages of friction

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the advantages and two disadvantages of friction on their note books.

Activity:

Q1:Write down two advantages of friction?
Answer:_____

Q2: What down two disadvantages of friction?

Answer: _____

Extend

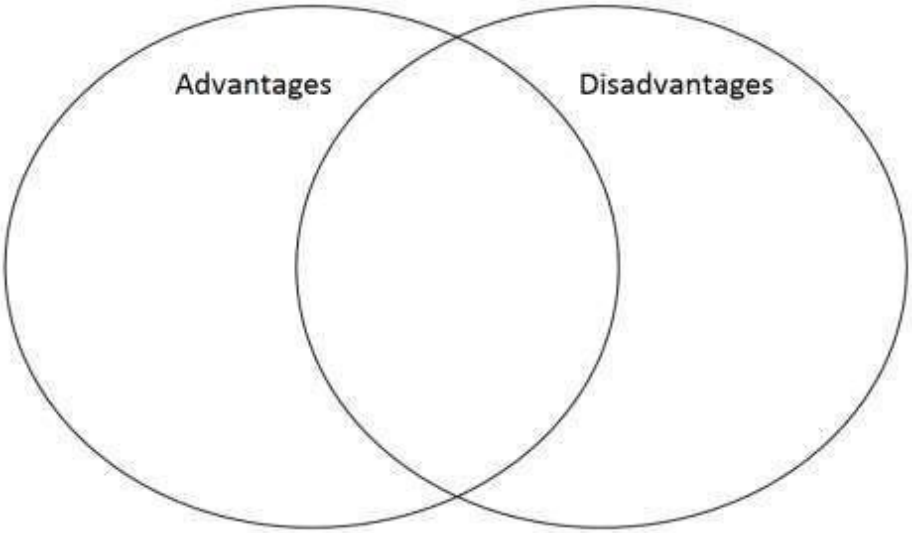
Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write the advantages and disadvantages of friction in the graphic organizer.

Graphic organizer:



Lesson Plan-3

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Methods for reducing the friction
Objectives	To suggest methods to reduce friction

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what happens when sewing machine does not work properly,and when the parts of machines get heavier.
- Teacher will then ask the students how we can increase the durability or working of machines.
- Teacher will then ask another questions from the students that why the tyres of vehicles or bicycle becomes coarse after use.
- Students will answer the question and teacher will note the important points.
- Q1: Why do we lubricate the machines?
- **Reason:**_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- During this stage teacher will show picture charts of frictions to the students.
- For this purpose teacher will make 5 pairs of the students.
- Students will see the picture charts and answer the questions.

- Q1: How friction can be reduced?
- Answer:_____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another chart of friction.Teacher will ask the students:" see the picture chart and observe the methods to reduce friction.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Activity:

Q1: Write a method to reduce friction?

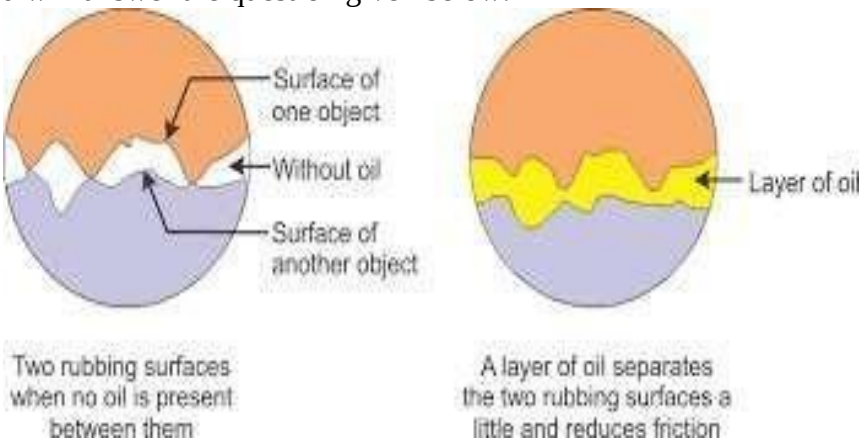
Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the methods to reduce friction.
- Teacher will explain that friction can be reduced in different ways.

- Teacher will explain that friction can be reduced by lubrication,use of ball bearings e.g bicycle.rollers and wheels e.g road rollers and shapes e.g stream lined bodies etc.
- Teacher will then explain the topic with the help of picture chart.Students will see the picture chart and will answer the question given below.



Q1:How friction can be reduced?

Answer:_____

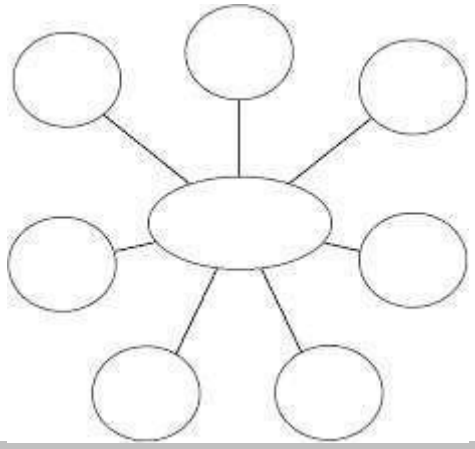
Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart of Methods for reducing the friction.
- Students will work in group to complete the task.Students will see the picture chart and will write the ways to reduce friction in the graphic organizer.

Graphic organizer:



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the methods to reduce friction in their note books.

Activity:

Q1:Write down two methods to reduce friction?

Answer:_____

_____

Extend

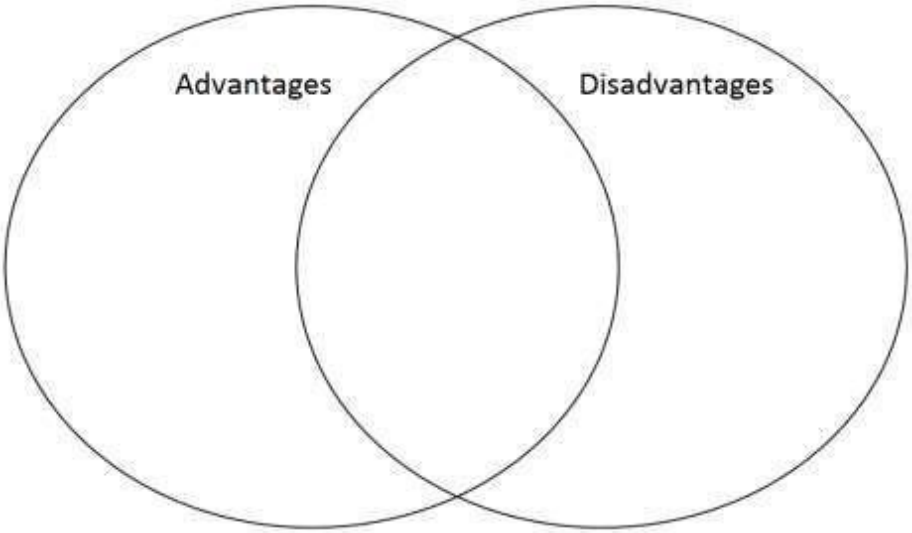
Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write three methods to reduce friction.

Graphic organizer:



Lesson Plan-4

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Methods for reducing the friction
Objectives	To identify what cyclists,swimmers and parachutists do to reduce friction

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

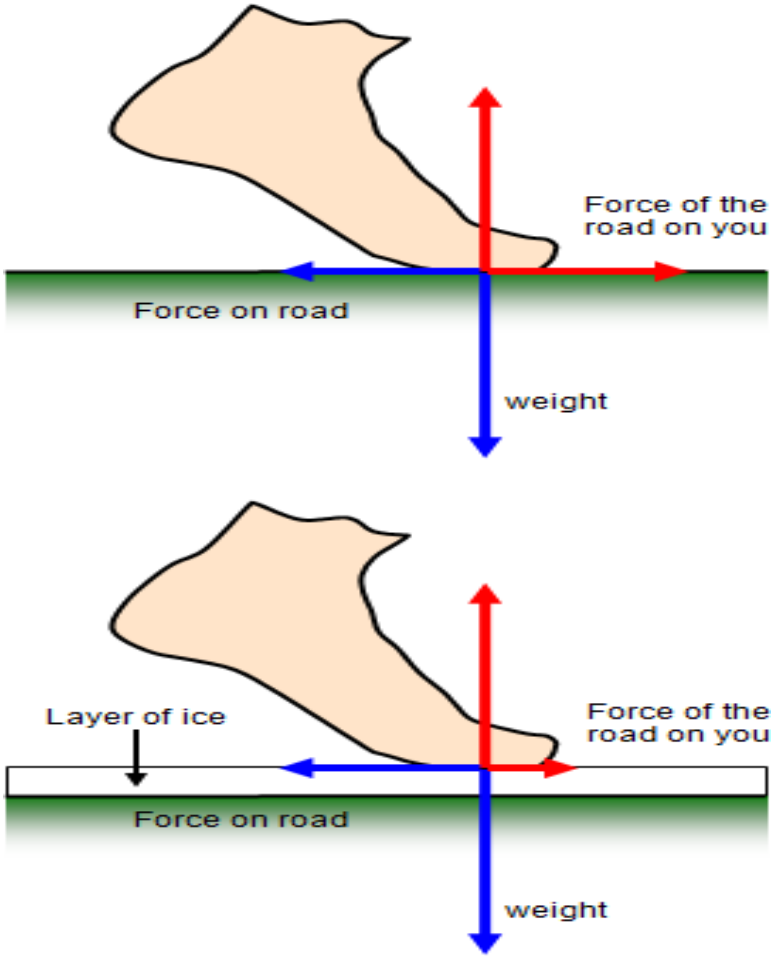
- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what do you think that friction is helpful or harmful for us in our dily life.
- Teacher will then ask the students what should we do to reduce friction for example when the machinery starts working slowly,when the spare parts of machines and cars get coarser with the passage of time.
- Students will answer the questions and teacher will note the important points on the board.
  Q1: How we can reduce friction between the parts of machines?
  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask the students to drop soapy water on the marble floor and try to walk on it,can we walk on it easily.Student will perform the activity and will note the observations.
- Teacher will then show picture charts to the students.
- Students will see the picture charts and answer the questions.
- For this purpose teacher will make 5 pairs of the students.



Q1: Can we walk on the layer of ice?

- Answer:_____

Explore

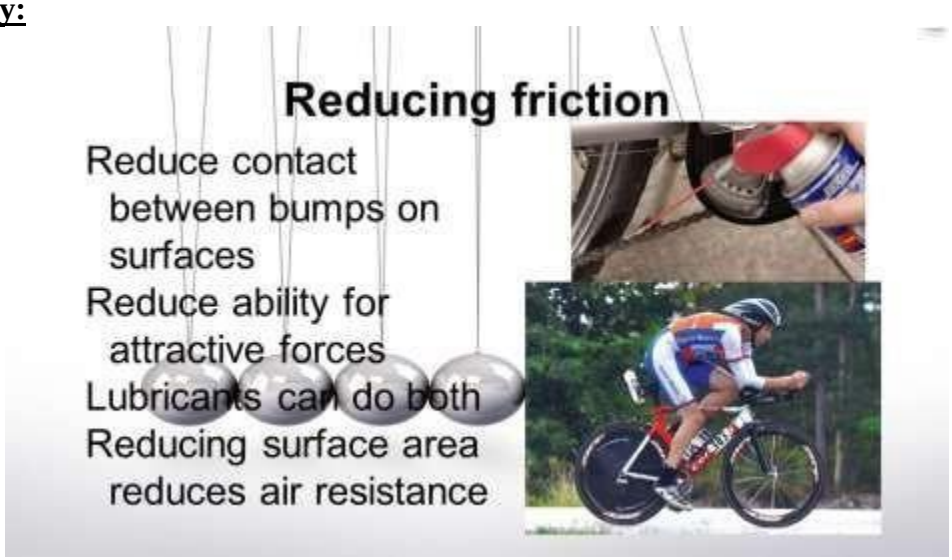
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another chart of friction.Teacher will ask the students:" see the picture chart and observe the methods to reduce friction.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Activity:



Q1: Write a method to reduce friction?

Answer: _____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the methods to reduce friction.
- Teacher will explain that cyclists,swimmers and parachutists wear tight to dresses and cover their heads with tight caps to reduce the friction.
- Teacher will then explain that cyclists often wear **Skinsuits** to reduce friction.They can also reduce friction by keeping the surface oily.
- Teacher will then explain that a **tight kick** with pointed toes reduces friction in swimming.Swimmers keep their legs as tight together as possible which helps to reduce friction,because it streamlines or compresses the legs.
- Teacher will then ask the students what do cyclists,swimmers and parachutists do to reduce friction.
- Teacher will ask the students to answer the question by completing the table.

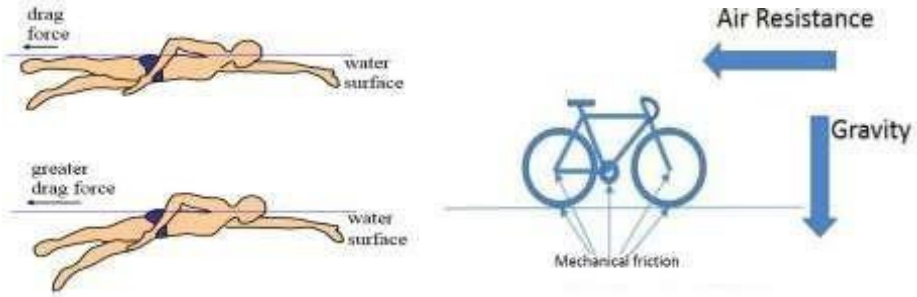
Cyclist	**Swimmers**	**Parachutists**

Elaborate

Time Duration; 05 minutes

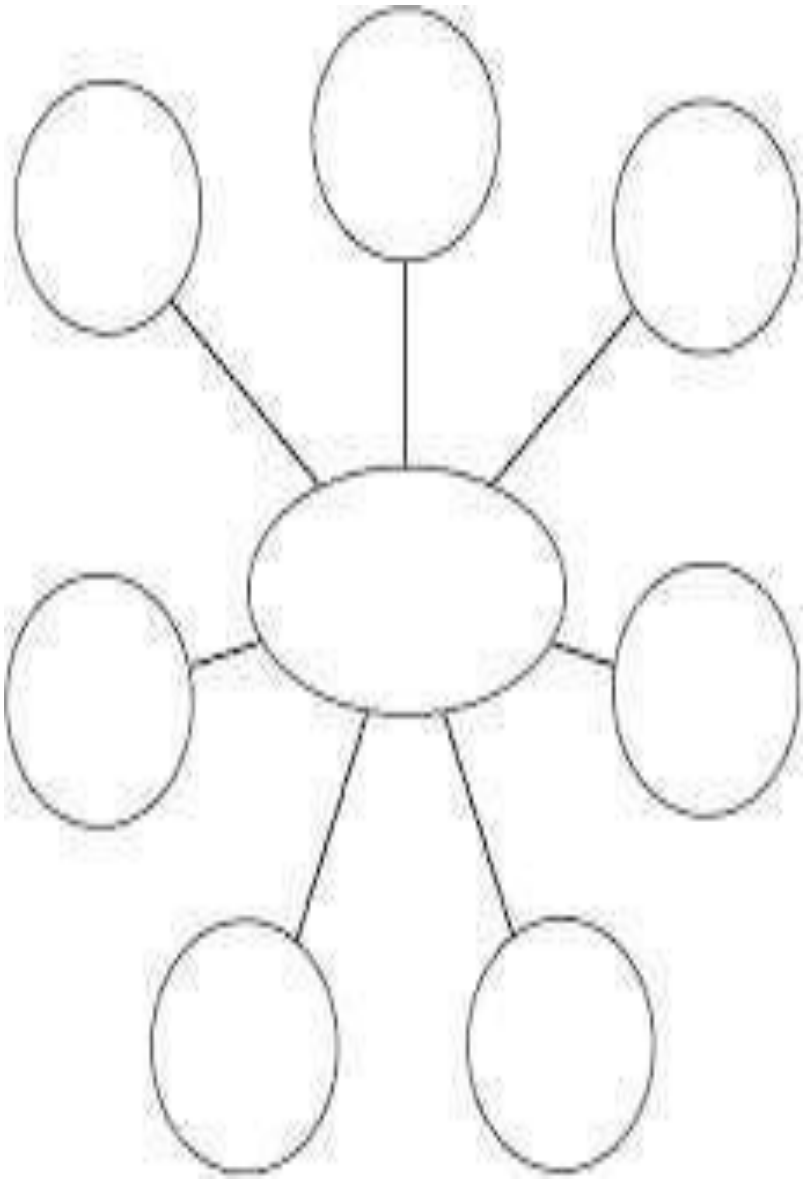
INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and tell that what do cyclists,swimmers and parachutists do to reduce friction.



- Students will work in group to complete the task.Students will see the picture chart and will write that what do cyclists,swimmers and parachutists do to reduce friction in the graphic organizer.

Graphic organizer:



Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the ways that cycists,swimmers and parachutists adopt to reduce friction.

Activity:

Q1:Write do cyclists,swimmers and parachutists do to reduce friction?
Answer:_____

_____

Extend

Time Duration ;05 minutes
INSTRUCTIONS;
Individual work will be given to students to complete their task individually in new context for further concept development.
Students will be asked to write what do cyclists,swimmers and parachutists do to reduce friction in the table given below.

Lesson Plan-5

Activity Title:	Forces and machines
Grade /Level /Subject	Grade $5^{th,}$ General Science
Time	35-40 minutes
Topic/nature of the Investigation	Gravitational force and its examples
Objectives	To explain the gravitational force using different examples

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students why do objects fall on the earth,why we do not fall on the earth while walking on it.
- Teacher will then ask the students have you ever observed that leaves,flowers and fruits from the trees fall down on the ground.
- Students will answer the questions and teacher will note the important points on the board.

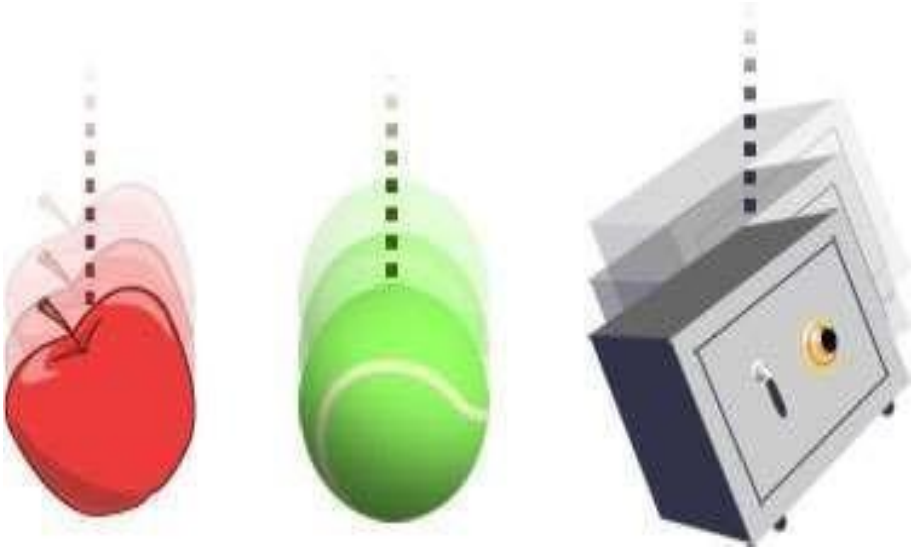
Q1: Why do apples fall on the ground from the tree?
Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will ask the students to throw different things up in the air and observe what happens.
- Teacher will ask the students to throw ball in the air,students will observe that it will come back and falls in hand.
- Teacher will then ask the students to throw their pencil upward,what will happen.
- Teacher will then show picture charts to the students.
- Students will see the picture charts and answer the questions.
- For this purpose teacher will make 5 pairs of the students.



Q1: Why do objects falls on earth when we throw it upward?
ANSWER: _____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.Teacher will ask the students:" see the picture chart and observe that why do objects fall on earth.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Activity:

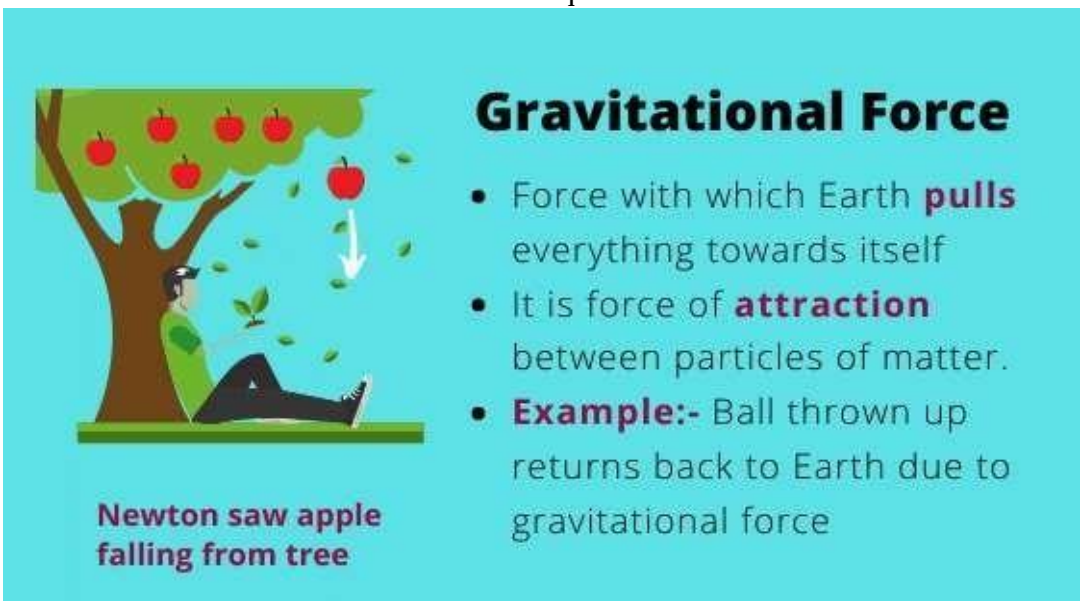
Q1: Why we cannot stay at height but come back to the ground?
Answer: _____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the methods to reduce friction.
- Teacher will define and explain gravitational force,that it is the force with which earth earth attracts all objects towards its centre.
- Teacher will explain that force of gravity is a non-contact force by which earth attracts other objects towards itself.
- Teacher will explain that we can feel the gravitional force when we are not in contact with the earth.

- Teacher will ask the students to answer the question.

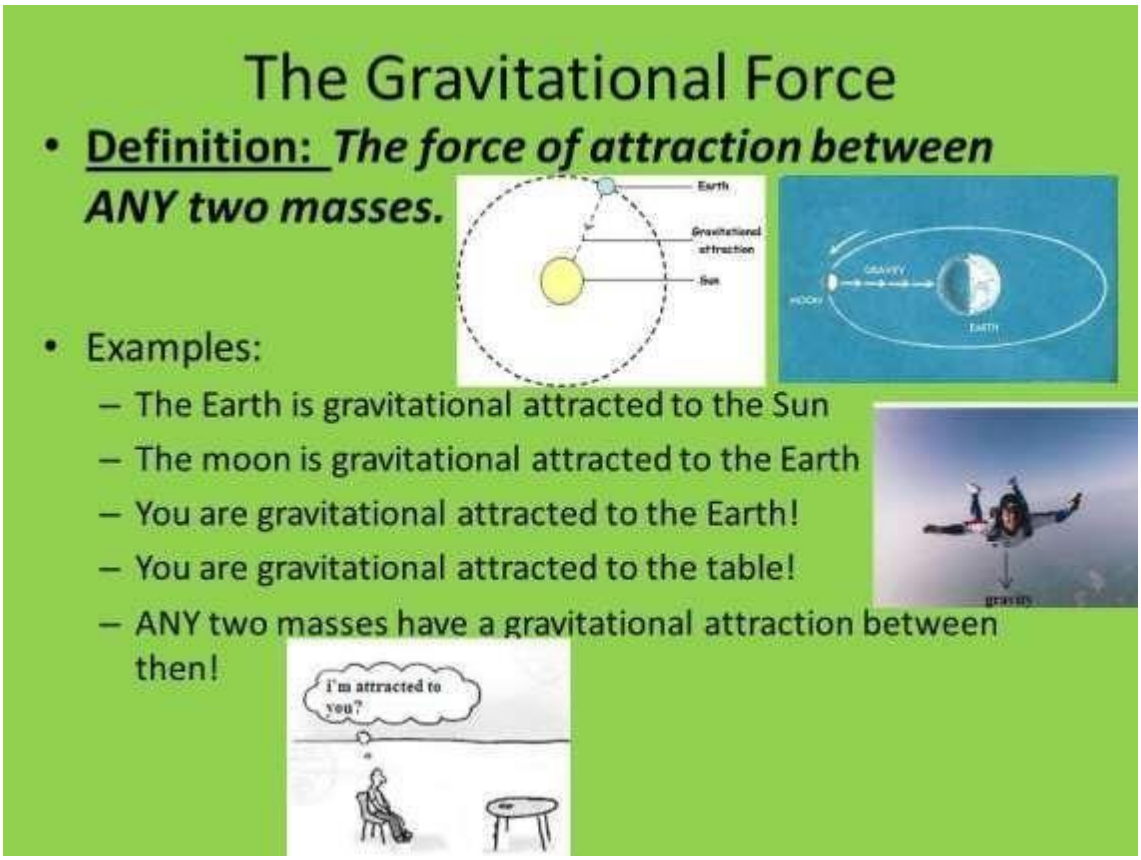


Q1:Define gravitational force?
Answer:_____

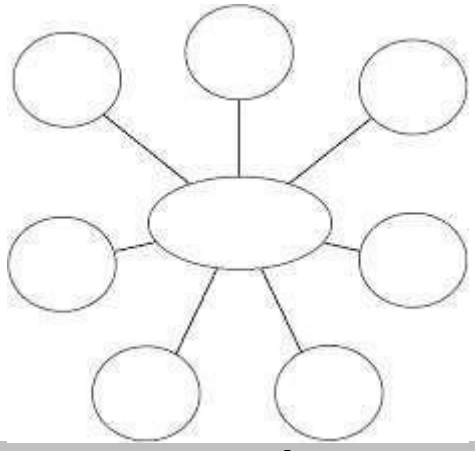
Elaborate

Time Duration; 05 minutes
INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart of gravity and write down other examples of gravitational forces.
- Students will see the picture chart while working in the groups.Group leader will present the work infront of whole class.
- Students will complete the task by writing other examples of gravitational forces in the graphic organizer given below.



Graphic organizer:



Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the definition and two examples of gravity from daily life?

Q1:What is gravity,write two different examples of gravity?
Answer:_____
_____

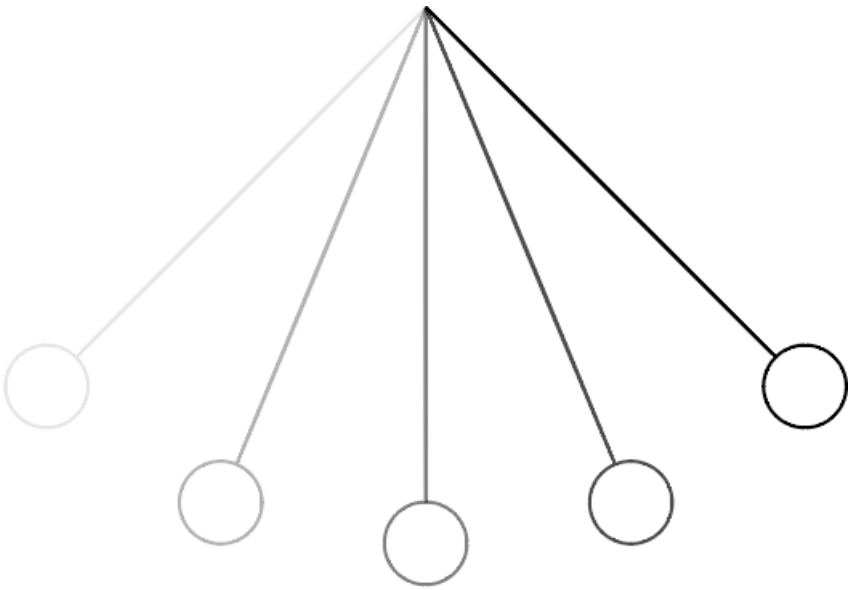
Extend

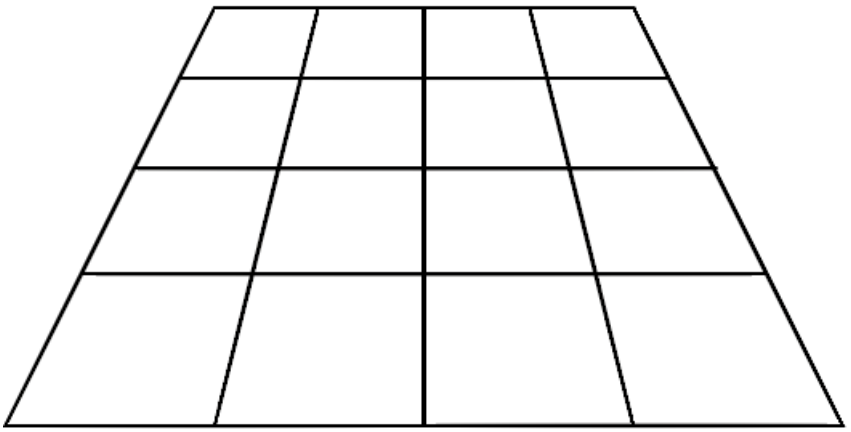
Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write examples of gravity in the web sketch given below.





Lesson Plan-6

Activity Title:	Mass and weight
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	What is Mass and weight
Objectives	To distinguish between mass and weight

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students do you know about matter,what is matter.
- Teacher will also ask the students how many states of matter are there,why water exist in three forms i.e solid(ice), liquid (water) and gas(water).
- Teacher will then ask the students why do we measure some things in dozens and somethings in kgs,for example we use the term dozens for bananas and kilo for apples.
- Teacher will then ask the students to answer the given question.
- Students will answer the question and teacher will write it on the board.

  Q1: Why objects become weight less on moon than on earth?

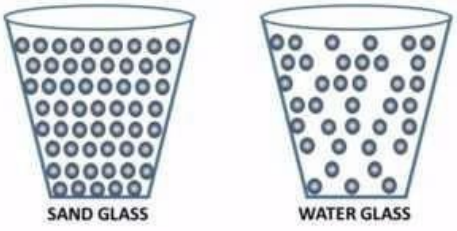
  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- Teacher will perform the following activity infront of students.
- For this purpose teacher will make 5 pairs of the students.
- Teacher will take two empty glasses of the same size.
- Teacher will fill one of them till the top with sand and the other with water.
- Teacher will then ask the students, now lift each of them one by one. Which one of the two glasses you find is heavier?



- Q1: Which of the above glass will be heavier the sand glass or the water glass?
- Answer:_____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.

Teacher will ask the students:" see the picture chart and answer the given question after observing it.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.

Activity:

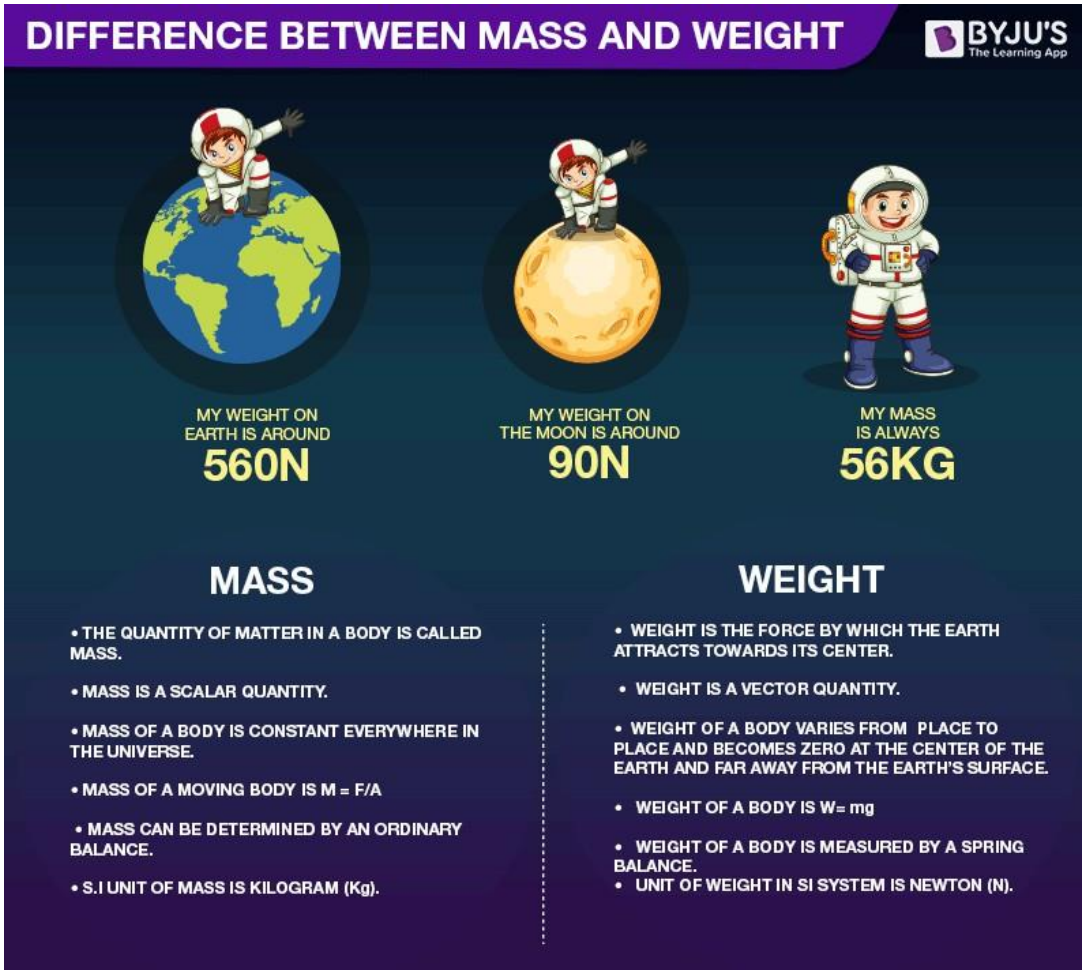
Q1: Which of the above quantity always remains same?

Answer: _____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the methods to reduce friction.
- Teacher will define and explain mass and weight that Mass is the quantity of matter in an object,mass of the objects remains sameevery where.
- Similarly teacher will define and explain weight that weight is the amount of gravitational force acting on an object,weight of an object does not remain same everywhere.
- Teacher will explain that the value of weight is different at different distances from the centre of the earth,larger the distance smaller will be the weight.
- Teacher will ask the students to answer the question.



Q1:Define mass and weight?

Mass:_____

Weight:_____

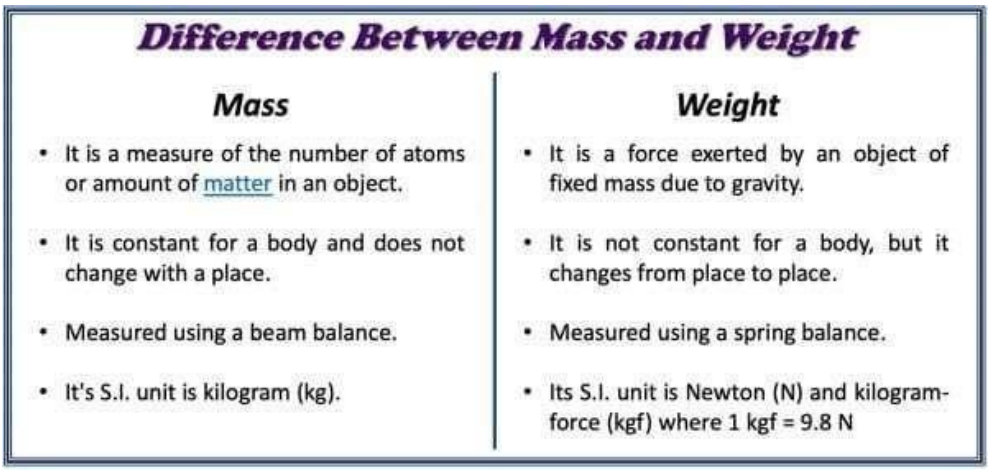
Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

Teacher will show another picture chart of the difference between mass and weight in front of students.

- Teacher will make 05 groups of students and ask them to see the picture chart.
- Students will work in the groups to complete this task.
- Group leader will present the work in front of the whole class.
- Students will be asked to differentiate mass and weight after seeing the picture chart.



Q1: What is the difference between mass and weight?
Answer:_____

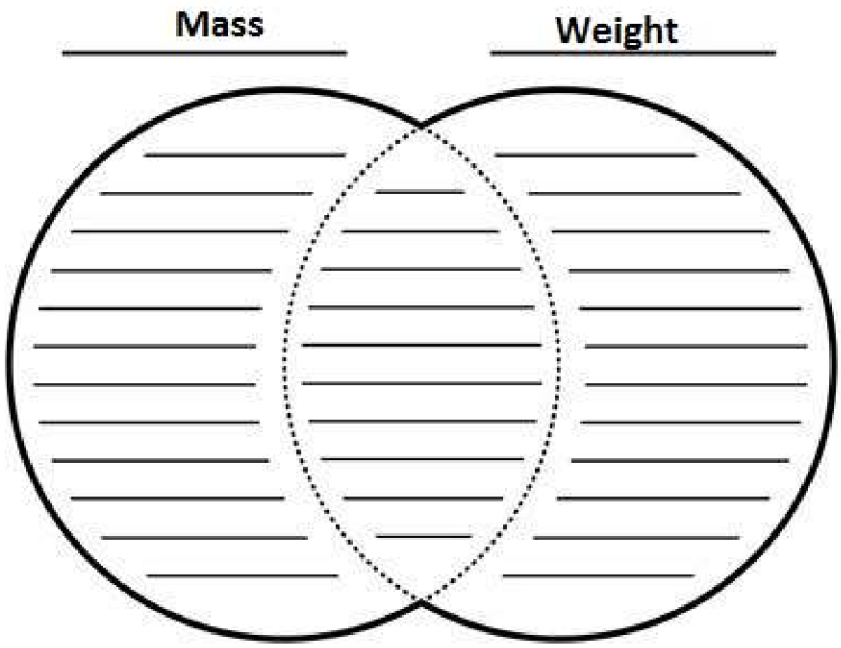
_____

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be asked to write the definition of mass and weight in the graphic organizer given below.

Graphic organizer:



_____

Extend

Time Duration ;05 minutes
INSTRUCTIONS;
Individual work will be given to students to complete their task individually in new context for further concept development.
Students will be asked to write the difference between mass and weight in the table given below.

Mass	**Weight**

Lesson Plan-7

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Balanced and unbalanced forces
Objectives	To differentiate between balanced and unbalanced forces

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students have u ever seen the physical balance at the shops,how do shopkeepers use it for measuring weight?
- Teacher will then ask the students have u ever sat on the see-saw,when does it move,when does it stop.
- Students will answer the questions and teacher will note the important points on the board.

  Q1: Do you experience arm wrestling competition?

  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this purpose teacher will make 5 pairs of the students.Teacher will take rope and ask the students to play tug of war.
- At the first time teacher will arrange the students in such a way that 4 students are at one end of the rope and 5 students are at the other end of the rope.
- Then teacher will repeat the activity for another group,teacher will arrange the students with equal number of students at both end of the rope.
- For these different activities,teacher will ask the students to note the observations.
- Teacher will ask the students whether we have equal or unequal forces in these activities.

  Q1: What happened when there were unequal number of students at both ends of the rope?

  Answer:_____

Explore

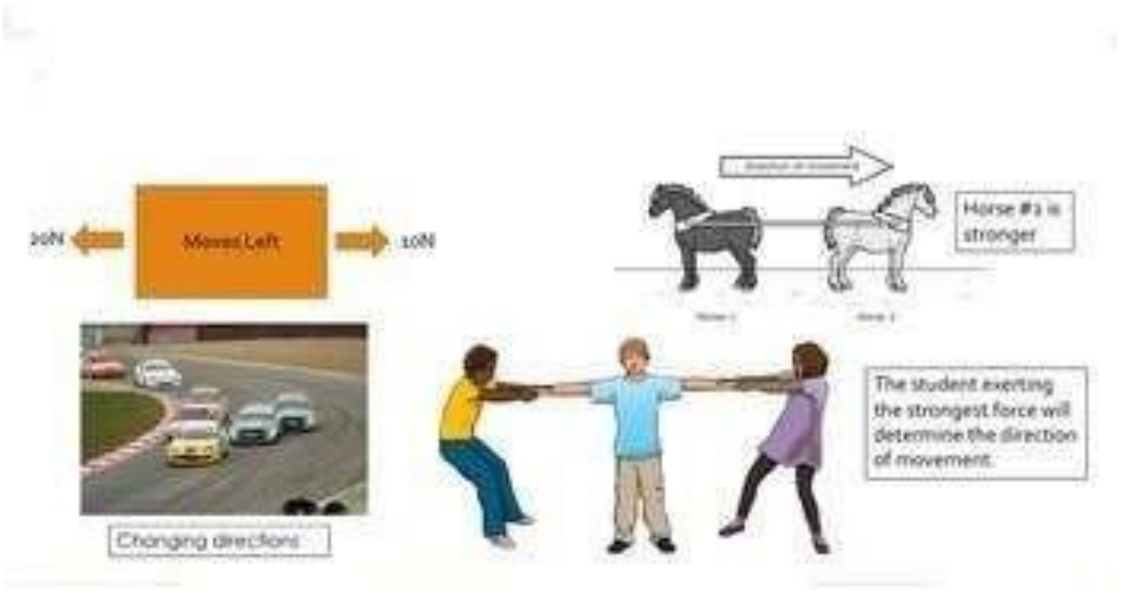
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.

Teacher will ask the students:" see the picture chart and observe two different types of forces acting in the same and opposite direction.

- Students will see the pictures and complete the given task in given table.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.



Q1: What happens when equal and unequal amount of force is being applied on the same object?

Answer:_____

_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain balanced and unbalanced force.
- Teacher will define that the forces which are being applied in equal amount and in opposite direction,cancel each other and these forces are called balanced forces.
- Teacher will then give the examples of balanced forces that racing car,tug of war,vase or things on the tables are examples of balanced forces.
- Teacher will then define unbalanced forces that the forces which are not being applied in equal amount and opposite direction are called unbalanced forces.These forces does not balanced each other.
- Teacher will then give the examples of unbalanced forces that if there is greater forces in one direction and less force in other direction,they will be unbalanced forces.
- Teacher will ask the students to answer the question.

Q1:Define balanced and unbalanced forces?

Balanced forces:_____

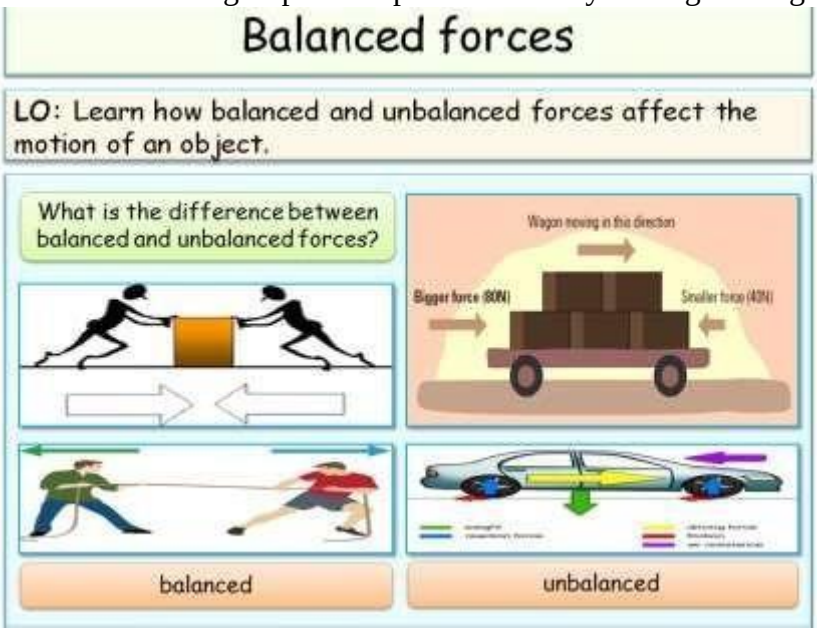
Unbalanced forces:_____

Elaborate

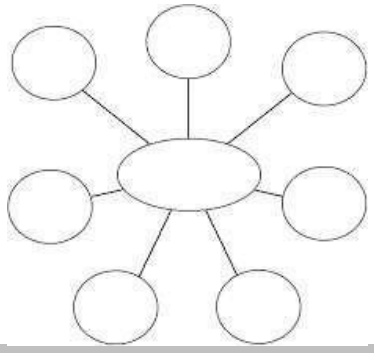
Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and write the examples of balanced and unbalanced forces.
- Students will work in group to complete the task by writing in the graphic organizer.



Graphic organizer:



Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the definition and two examples of balanced and unbalanced forces from daily life?

Balanced forces	**Unbalanced forces**

Extend

Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write the difference betweeen balanced and unbalanced force in the table given below.

Balanced forces	Unbalanced forces

Lesson Plan-8

Activity Title:	Forces and machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Inertia
Objectives	To describe the term inertia

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students when we throw a ball on the floor why does it stops after sometime.
- Teacher will then ask the students why do moving objects get stop after a certain period of time.
- Teacher will then ask the students that when you drop a coin on the floor it stops after few seconds why.
- Students will answer the questions and teacher will note the important points on the board.
  Q1: Why a passenger standing in a bus falls backward when the bus starts all of a sudden?
  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the students.
- Teacher will take empty jam jar or drinking glass,a card,(to cover glass jar),a five rupee coin.
- Teacher will place a thick card (square shaped) on empty jar/glass.
- Teacher will then flick the card with finger.
- Teacher will ask the students what did you observe?

- Teacher will ask to students to answer the given question No 1.
  Q1:The card moves fast and coin drops into the glass why?
  Answer:_____

Explore

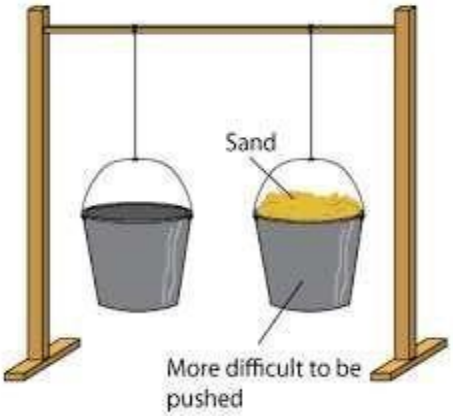
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.

Teacher will ask the students:" see the picture chart of the object with different conditions.

- Teacher will ask the students that if we have two buckets,one is empty and other is filled with sand and we want to push these buckets.Which of the bucket will be difficult to push the empty one or the other with sand.
- Students will see the pictures and answer the questions given at the end.
- Teacher will make 25 PAIRS; they will discuss and complete it in pairs.



Q1: Which of the above bucket will be difficult to push empty bucket or the bucket filled with sand?

Answer:_____

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain balanced and unbalanced force.
- Teacher will define that it is the tendency of all objects to resist any change in their state of motion or rest.
- Teacher will also explain that in order to move an object that is at rest,enough external force must be applied to overcome the object's inertia.
- Teacher will then explain that the heavier a still objects is, the more force is required to move it.
- Teacher will ask the students to answer the question.

Q1: Define the term inertia?

Answer:)_____

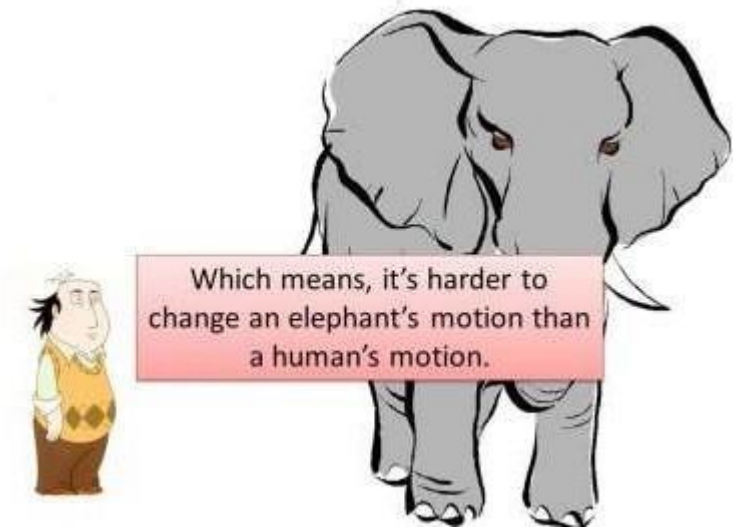
Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and write the examples of inertia.

- Teacher will ask the students which of the following will be difficult to stop,a man or an elephant.
- Students will work in group to complete the task and will ask the students to answer the given question.



Q1: Which will be harder to move or stop a man or an elephant?
Answer:_____

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to see the picture and answer the question.

A lot of inertia! The large train resists changing its motion.

Very little inertia

The small baby carriage has very little resistance to changes in motion.

Q1: Which of the above object has more inertia the lighter or the heavier one?
Answer:_____

Extend

Time Duration ;05 minutes
INSTRUCTIONS;
Individual work will be given to students to complete their task individually in new context for further concept development.
Students will be asked to write the definition and example of inertia.
Q1: Define inertia give two examples?
Answer:_____

Lesson Plan-9

Activity Title:	Simple machines
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Wedge and inclined planes
Objectives	To demonstrate how wedge and inclined plane are used to move the objects.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students have you ever seen car lifting at the service station.
- Teacher will then ask the students how cars are lifted up from the road?
- Teacher will then ask the students how heavy machinery cars,motor bikes and vehicles are loaded from one vehicle to the other.
- Students will answer the questions and teacher will note the important points on the board.

  Q1: Why do we use axe?

  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the students.
- Teacher will take a toy truck/house, cardboard,toy wheel chair,bike or car toy.
- Teacher will use the card board to make an inclined plane.
- Teacher will demonstrate its use to lift the toy wheel chair,bike or car.
- Teacher will ask the students what did you observe?
- Teacher will ask to students to answer the given question No 1.

  Q1: What is the shape of the ladder/stairs?

  Answer:_____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.

Teacher will ask the students:" see the picture chart of the machines.

Teacher will ask the students to see the pictures and identify different types of machines.

- Students will see the pictures and answer the questions given at the end.
- Teacher will make 25 PAIRS; they will discuss and complete it in pair.

Q1:See the above pictures and separate the cutting and lifting machines?

Cutting machines	Lifting machines

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain wedges and incline planes.
- Teacher will define that wedge is a simple machine,which is triangular in shape and thin one one side and thick on the other side.It is used to separate different objects.
- Teacher will then define and explain inclined plane that it is a simple machine that is used for lifting objects to a height.It consist of a plane surface that makes an acute angle with the ground.
- Teacher will ask the students to answer the question.

Q1: Define wedges and incline plane?

Wedges	**Inclined plane**

Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

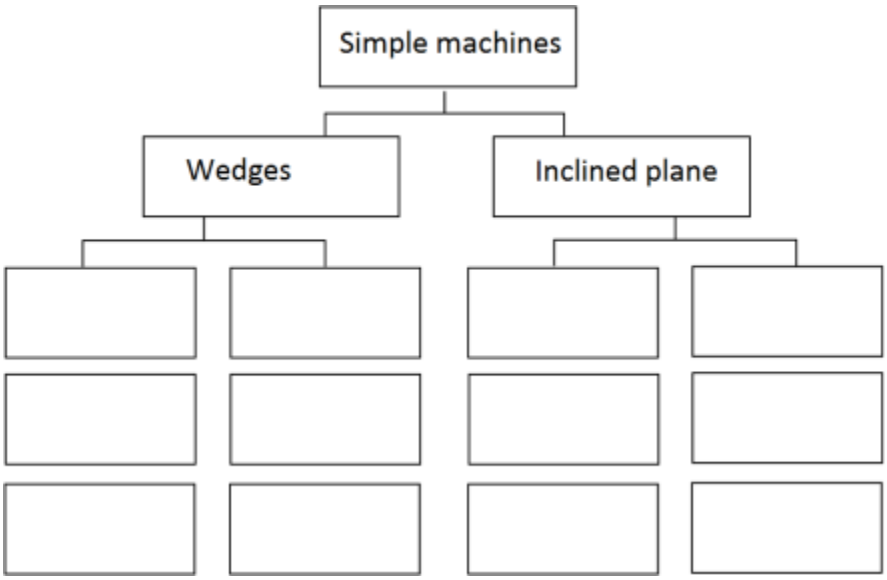
- Teacher will make 05 groups of students and ask them to see the picture chart and identify wedges and inclined plane.
- Teacher will guide the students while working in the group to separate wedged and inclined plane.
- Students will work in group to complete the task and group leader will present the work infront of the class.

Q1: Identify wedges and inclined plane from the above pictures?

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Teacher will ask the tudents to write the examples of wedges and inclined plane in the graphic organizer given below.
  Graphic organizer



Extend

Time Duration ;05 minutes
INSTRUCTIONS;

- Individual work will be given to students to complete their task individually in new context for further concept development.
- Students will be asked to write the difference between wedges and inclined plane with examples?

Wedges	Inclined plane

Lesson Plan-10

Activity Title:	Levers and its types
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Lever and kinds of lever
Objectives	To compare three kinds of levers using examples.

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what is machine and how machines helps us in our daily life?
- Teacher will then ask the students how machines are making our work easier.
- Teacher will then ask the students is there any machine in your home,can you tell the names of some machine from your home.
- Students will answer the questions and teacher will note the important points on the board.

  Q1: Why are machines,give some examples of machines from our daily life?
  Answer:_____

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the students.
- Teacher will take wooden ruler,piece of foam board,thin piece of wood,a large binder clip,different weights or objects.
- In the first step teacher will set the ruler,wooden board over the binder clip in the middle so that board is balanced.
- Teacher will then place weight on one end and ask the students to note what happens to each end.
- Teacher will then place a lighter weight or object on the other end and ask the students to note the observations.
- Teacher will then ask the students to lift a heavy object with a lighter one and repeat the activity by using pencil,eraser and sharpener.

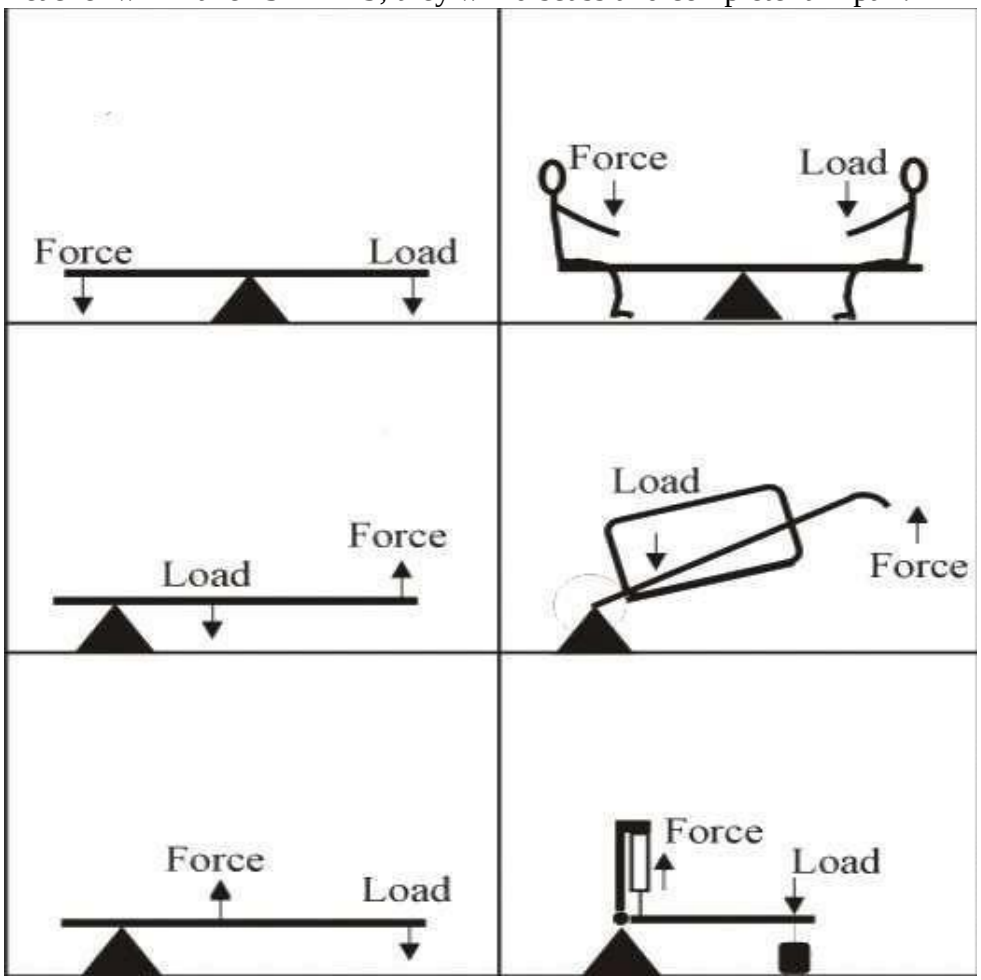
Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.

- Teacher will ask the students:" see the picture chart and observe the positions of force and load.
- Teacher will ask the students to see the pictures and also observe the difference in the mid positions.
- Students will see the pictures and answer the questions given at the end.
- Teacher will make 25 PAIRS; they will discuss and complete it in pair.



Q1: See the above pictures and tell the position of force and load in the ist,second and third stage respectively?

S.No	Ist Stage	2nd Stage	3rd Stage
Force			
Load			
Centre			

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain lever and its main kinds.
- Teacher will define that lever is one of the simplest machine which helps us to do work more easily.
- Teacher will explain that simple lever consist of a rigid ro or bar,which turns about a fixed point called the Pivot or Fulcrum.
- Teacher will then explain that the fulcurum turns when a force called Effort is applied .
- Teacher will explain that the resisting force is called load.
- Teacher will then explain the that there are three kinds of levers.

First class: Fulcurum is between the effort and load.(scissors,sea saw,claw hammer)

Second class: Load is between the fulcurum and effort.(bottle opener,paper cutter etc)

Third class: Effort is between the fulcurum and load.(broom,tongs,human arms)
Teacher will then ask the students to answer the given question.
Q1:What is lever,how many kinds of lever are there?
Answer:_____

Elaborate

Time Duration; 05 minutes
INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and identify the kind of lever.
- Teacher will guide the students while working in the group to separate the kinds of lever.
- Students will work in group to complete the task and group leader will present the work infront of the class.

_____

_____

_____

_____

Q1: Identify kind of lever from the above pictures?

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Teacher will ask the tudents to write the kind of lever infront of each example and complete the table given below.

Examples	Ist kind	2nd kind	3rd kind
Pliers			
Bottle opener			
Scissors			
Paper cutter			
Claw hammer			
Broom			
Human arm			
Nut cracker			
Tongs			
Stapler			
Sea saw			

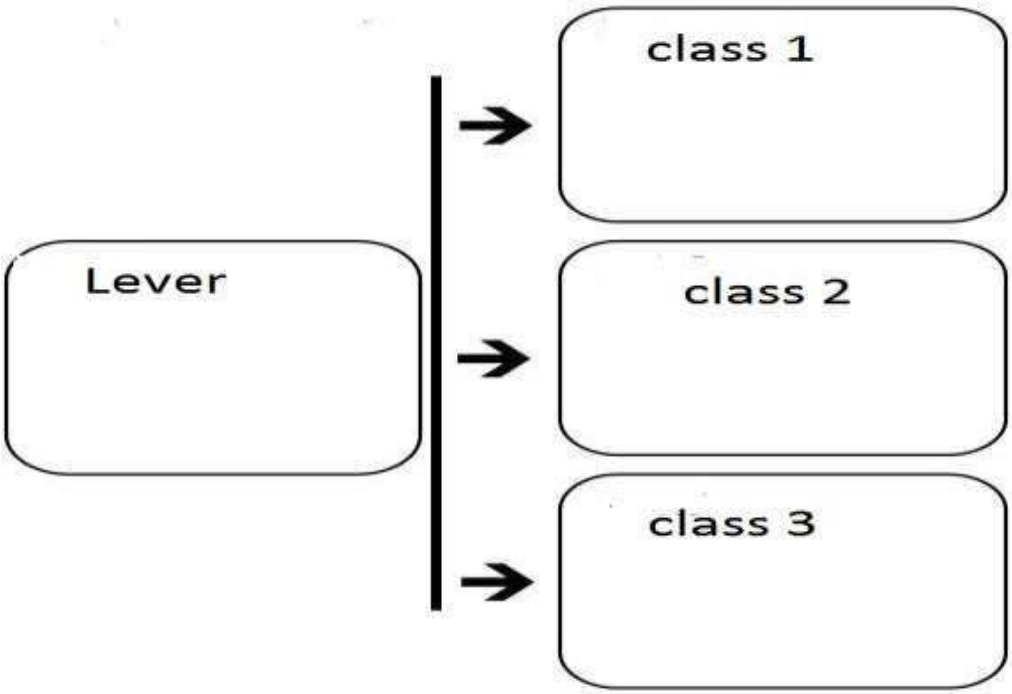
Extend

Time Duration ;05 minutes
INSTRUCTIONS;

- Individual work will be given to students to complete their task individually in new context for further concept development.
- Students will be asked to write the definition and kinds of lever with one example?

Q1: Define lever?
Answer:_____

Q2:Write the examples of three kinds of lever in the graphic organizer?
Graphic organizer:



Lesson Plan-11

Activity Title:	Lever and its work
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Uses of lever in daily life
Objectives	To describe how lever makes work easier by giving examples of its uses from daily life

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the previcious knowledge of the students.
- Teacher will ask the students what is machine,what do you think that how machines make our work easier in daily life.
- Teacher will then ask the students is it easy to lift the car by hand,if No then how car will be lifted for washing purpose.
- Teacher will then ask the students how large trees are being cut down,what thing is used for cutting large trees.
- Teacher will then ask the students why do we use scissor and knife is it easy to cut meat from hand or from knife.
- Students will answer the questions and teacher will note the important points on the board.
- Teacher will then ask the students to tell the name of some cutting and lifting machines from our daily life.

Cutting machines	**Lifting machines**

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the students.
- Teacher will take some devices from the daily life for example knife,scissor,claw hammer,bottle opener,tin opener,paper cutter,broom,stapler,and tongs.
- Teacher will then take the soft drink bottle and will open the lid of the bottle with the help of bottle opener.
- Teacher will then take nut opener and will open the nut with the help of it.
- Teacher will then ask to one group of students to take the paper cutter and cut the papers in proper shape.
- Teacher will then ask another group of students to bind the papers by using stapler.
- Students will do this teacher will then ask the students what did you observed how these things e.g stapler,bottle opener has make our work easier.
- Teacher will ask to students to write the uses of the devices given in the table below.

Device	Uses
Stapler	
Broom	
Bottle opener	
Scissor	

Explore

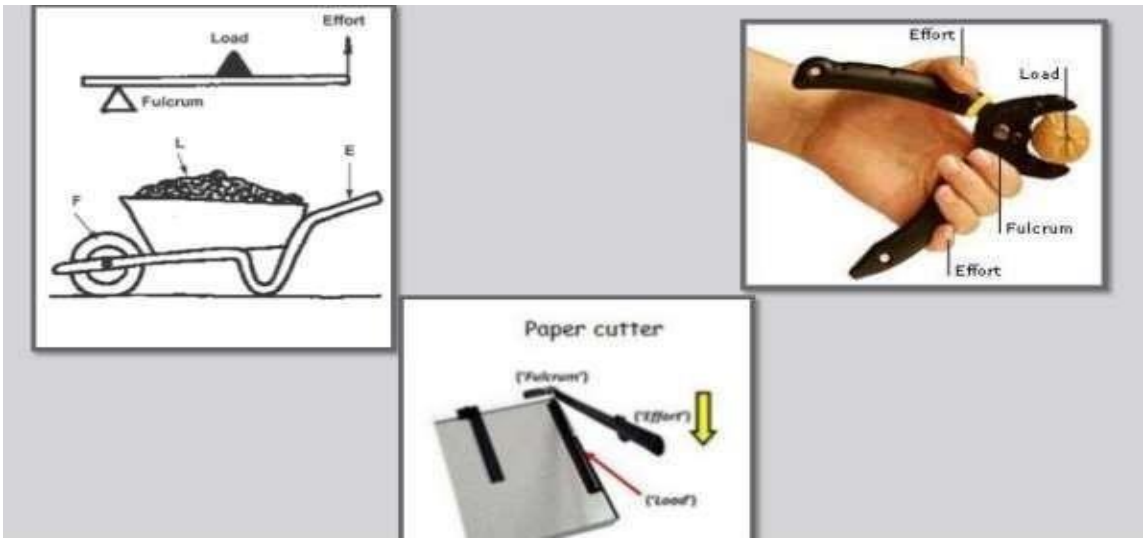
Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

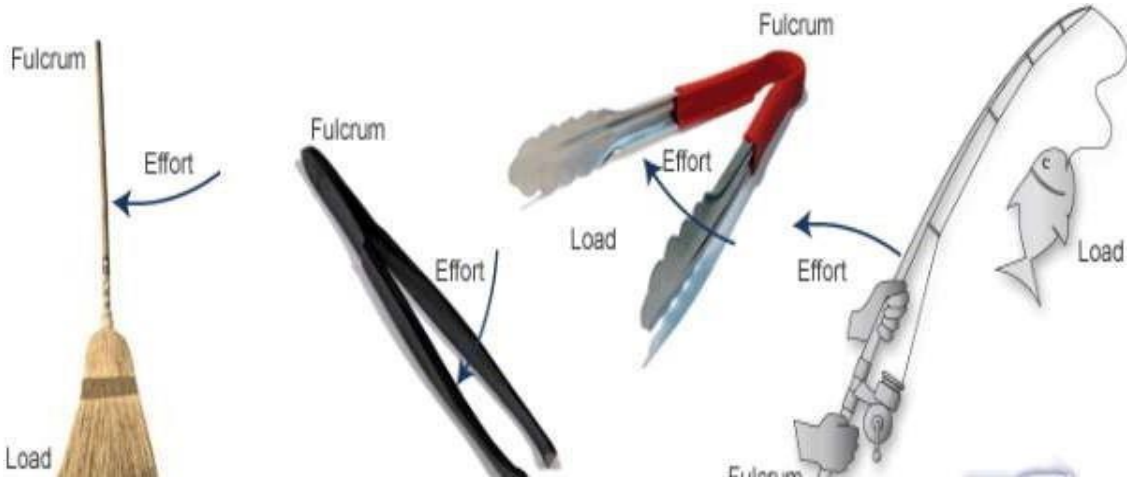
For this activity teacher will present another picture chart infront of students.

Teacher will ask the students:" see the picture chart of the objects nad write their use.

- Students will see the pictures and complete the task by working in the pair.
- Teacher will guide the students during the group work.
- Teacher will make 25 PAIRS; they will discuss and complete it in pair.



Q1:See the picture chart and write the uses of the given simple machines?



Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain the uses of lever and hoe lever makes our work easier.
- Teacher will explain that lever is a simple machine that makes our our work easier in our daily life.Like other machines, a lever makes work easier by changing the force applied to the machine or the distance over which the force is applied.
- Teacher will then explain that there are three classes of lever,by changing the position of fulcurum,load and effort we can change one class of lever into other.
- Teacher will explain that every class of lever has its own uses and it makes our life easier.For example hammer which belongs to class one is used for striking the nail into objects and also pulling out nail.
- Similarly bottle opener which belongs to class two is used for opening the lids of soft drink bottles.
- And broom which belongs to class three lever is used to clean floor.
- Teacher will then explain other examples of lever from daily life along with their uses.

Q1: Write the examples of three classes of lever from our daily life in the table given below?

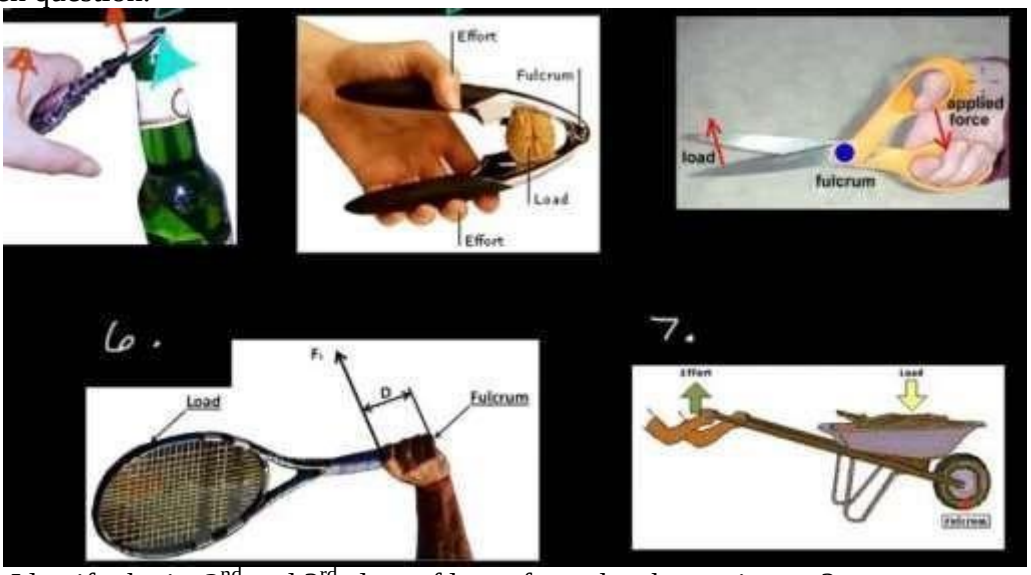
Class 1	Class 2	Class 3

Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and write the uses of lever from our daily life.
- Teacher will ask the studentshow lever is making our life easier.
- Students will work in group to complete the task and will ask the students to answer the given question.



Q1: Identify the ist,2nd and 3rd class of lever from the above pictures?

Evaluate

Time Duration ;05 minutes

Individual work will be given to students to complete their task.

INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to write the uses of ist second and third class of lever from our daily life?

S.No	Levers	Uses
01	Hammer	
02	Broom	
03	Knife	
04	Scissor	
05	Tongs	
06	Stapler	
07	Fishing rod	
08	Human arm	
09	Nut opener	
10	PSaper cutter	

Extend

Time Duration ;05 minutes

INSTRUCTIONS;

Individual work will be given to students to complete their task individually in new context for further concept development.

Students will be asked to write the example and uses of lever from our daily life.

Uses of class one lever

1:

2:

3:

Uses of class two lever

1:

2:

3:

Uses of class three lever

1:

2:

3:

Lesson Plan-12

Activity Title:	Wedges and Inclined plane
Grade /Level /Subject	Grade 5th, General Science
Time	35-40 minutes
Topic/nature of the Investigation	Uses of wedges and inclined plane
Objectives	1-To demonstrate how wedges and inclined plane are used to move the objects

Planning Stages Within the 7-E Inquiry Model

Elicit

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ELICIT STAGE;

- This stage is related to the elicit the prior knowledge of the students.
- Teacher will ask the students do you know about simple machines what are machines.
- Teacher will ask the students what is use to separate two objects for example teacher will ask the students how the trunks of large trees are separated into two parts.
- Teacher will then ask the students have you ever seen any lifting machine in your daily life.
- Teacher will then ask the students to write the uses of some cutting and lifting machines from our daily life.

Machines	**Uses**
Axe	
Slide	
Stairs	
Knife	
Scissors	

Engage

- Time Duration; 05 minutes

INSTRUCTIONS FOR INTRODUCTORY ACTIVITY FOR ENGAGE STAGE;

- For this activity teacher will make 5 pairs of the students.
- Teacher will take some devices from the daily life for example knife,scissor,axe,fork,stapler,zipper,claw hammer,screw,bottle opener,etc.
- Teacher will take a card board,pencil and ruler and will make a temporary surface that is used to lift objects from downward to upward directions.
- Teacher will then ask to one group of students to other cutting objects from daily life.
- Teacher will then show pcture chart to the students and ask them to write the uses of the simple machines shown in the chart.

Q1: Write the uses of the above simple machines in our daily life?

1: Axe_____

2:Knife_____

3:Stairs_____

4:Inclined surface_____

Explore

Time Duration 05 minutes;

,INSTRUCTIONS FOR ACTIVITY OF EXPLORE STAGE;

For this activity teacher will present another picture chart infront of students.
Teacher will ask the students:" see the picture chart of the simple machines and observe their uses in our daily.

- Students will see the pictures and complete the task by working in the pair.
- Teacher will guide the students during the group work.
- Teacher will make 25 PAIRS; they will discuss and complete it in pair.

Q1:See the picture chart and write the uses of the given simple machines ?

Explain

Time Duration 05 minutes;

- In this phase teacher will define and explain that how wedges and incline plane are used to move the objects.
- Teacher will explain that An inclined plane is a flat supporting surface tilted at an angle, with one end higher than the other, used as an aid for raising or lowering a load and it is much safer way to lower heavier objects and it is use to carry objects from low to high place and vice versa.
- Teacher will then give some examples of inclined planes from daily life for example stairs,wheelchair ramps,slide,water slides etc.
- Teacher will then explain that wedge is used to separate objects. Some examples of wedges that are used for separating are shovel, a knife, an axe, a pick axe, a saw, a needle, scissors, or an ice pick. But wedges can also hold things together as in the case of a staple, push pins, tack, nail, doorstop, etc.
- Teacher will then explain other examples of wedges and inclined plane from daily life.
  Q1: Write three examples wedges and inclined plane from our daily life in the table given below?

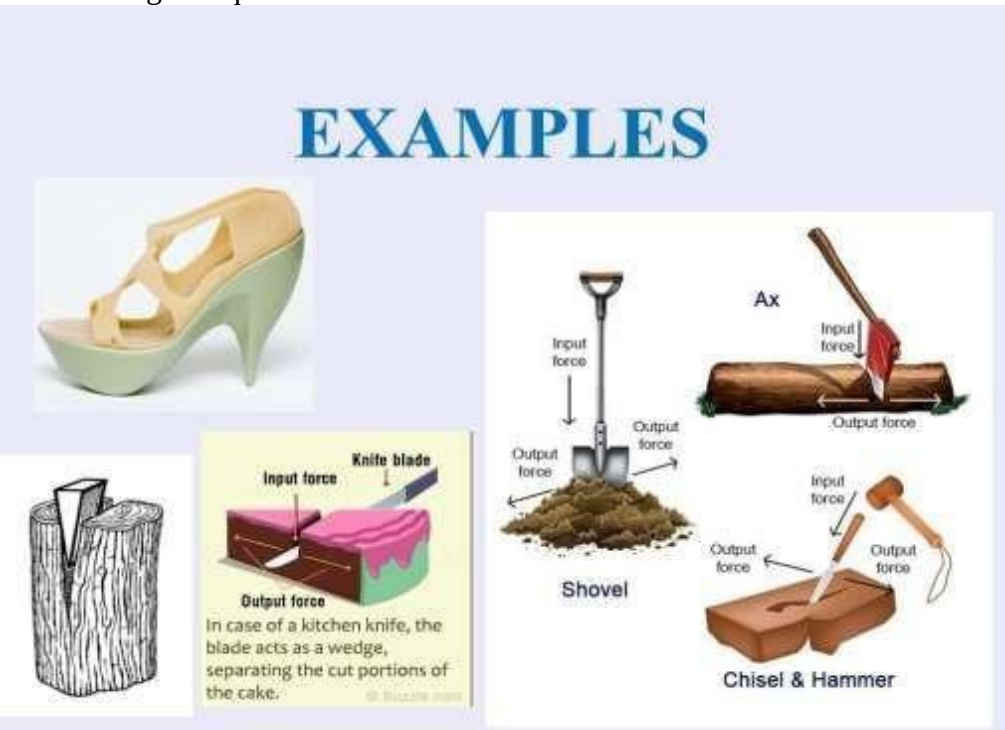
Wedges	**Inclined plane**

Elaborate

Time Duration; 05 minutes

INSTRUCTIONS:

- Teacher will make 05 groups of students and ask them to see the picture chart and write the uses of wedges and inclined plane from our daily life.
- Teacher will ask the students to identify how wedges and inclined plane are used to move the objects.
- Students will work in group to complete the task and will ask the students to answer the given question.



Q1:Identify wedges and inclined plane from the above pictures?

Wedges	**Inclined plane**

Evaluate

Time Duration ;05 minutes
Individual work will be given to students to complete their task.
INSTRUCTIONS;

- Students will be asked to complete their task individually.
- Students will be ask to define wedges and inclined plane?
- Students will be asked to write how wedges and inclined plane are used in our daily life and write the examples of wedges and inclined plane in the graphic organizer given below.

Q1: Define wedges and inclined plane?

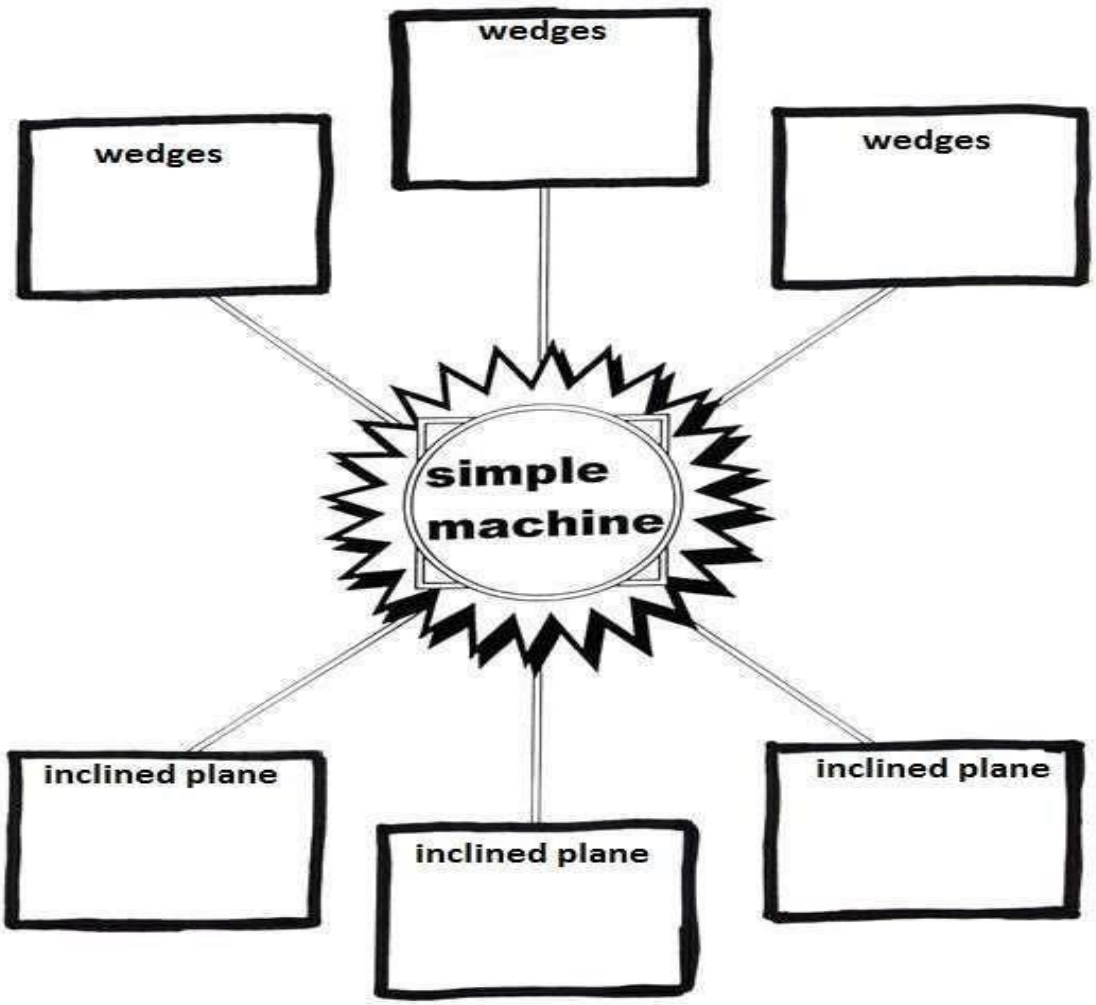
Wedges:_____

Inclined plane:_____

Q2:Write the examples of wedges and inlined plane in the graphic organizer ?

Answer:_____

Graphic organizer:



Extend
Time Duration ;05 minutes INSTRUCTIONS; • Individual work will be given to students to complete their task individually in new context for further concept development. • Students will be asked to write the example and uses of wedges and incline plane from our daily life.

Wedges	**Uses**	**Inclined plane**	**Uses**
Hammer		Stairs	
Scissors		Wheelchair ramp	
Axe		Slide	
Shovel		Water slide	
Knife		Car lifter	

Tactile learning Strategies;

Tactile learning strategies are key plan in development of science lesson plan for grade 5th level and helpful for teaching learning process, you can down load for implementation of grade -5 level students .