



LearningWell's **Science**

2

***Teacher's
Resource Book***

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LESSON 1: DEAD OR NON LIVING

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with living and non living things.

Aim of the lesson:

Students have the concept of living and non living things. The aim of this lesson is to make them understand the difference between dead and nonliving things which seem the same apparently. In this lesson student will be able to identify dead things in the pool of nonliving things.

Learning objectives:

In this lesson students will know:

- Dead living things which were living once.
- Non living things that were never living

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**

Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk

- **Other links:**

Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

- <https://www.google.com.pk/webhp?hl=en#hl=en&q=dead+or+non+living+things>
- http://utahscience.oremjr.alpine.k12.ut.us/sciber06/3rd/stand_2/html/2_1b.htm

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

In class, check the level of understanding of your students through brainstorming exercise they have done in the book. To develop their interest in the lesson, you may ask:

- Are we living things or non living things?
- What are qualities that living things show?
- What happens if we do not eat and drink for 5 days?
- What happens if we do not water plants?
- Does your teddy bear eats and drink?

(Note: There are more questions to ask. Try to involve every student in answering regardless of correct answer.)

Discussion:

Arrange different pictures of living and nonliving things. Ask students to sort them into living and nonliving things. Here student should know the difference between living and nonliving things. You may ask the characteristics of living things. Students should tell the characteristics of living things that nonliving do not have, such as eating, growing, reproducing, etc. Once they refresh their concepts, tell them that if animals, plants and human beings, do not eat, they will die. Once living things die, they are called dead. It means that dead things were living once.

Non livings, as they do not live, grow, eat and drink, they do not die. Hence, non living things can never be called dead as they were never living.

Exercises given in the textbook and activity book will help students remember the difference between nonliving and dead things.

In class, let the students read the lesson aloud and underline difficult and the key words.

Key words	Common words
Dead	Move
Alive	Oxygen
Grow	Carbon dioxide
Die	Hunting
Reproduce	Play
Breathe	Watering plants

Summarizing:

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Summarize the lesson in points and make sure that students have understood the concepts. You may summarize as:

- Living things are those that need food and water, grow and change, move and have their young once.
- Nonliving things do not need water and water. They do not grow and change. They do not have their young ones.
- Living things stop growing, eating, and reproducing when they die.
- Dead things are those that were living things once.
- Nonliving things are not like dead things. Non-living things were never alive.

Assessment:

Once you find that discussion is complete, test the concepts of your student. e.g., you may ask:

- Why living things are different from nonliving things?
- What are the key features of living things that nonliving things do not have?
- A broken leaf on the ground is dead or non living things?
- Collect some non living things.
- Collect some dead things.

Interpreting

Think and write

1. Living things stop growing when they die. Non living never live and hence never die.
2. Living things stop growing and non living things were never growing.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 2 LIVING THINGS (CARE FOR YOUNGONES)

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.



Start this lesson in progression with living things.

Aim of the lesson:

The aim of this is that living things survive and grow much better with the help of their parents. Parents feed their young ones and teach them different ways to protect themselves. Through this lesson, student will know that parents are blessing.

Learning objectives:

In this lesson students will know:

- How different animals care for their young ones.
- How humans parents take care of their children.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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- **Other links:**

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Visit:

- <https://www.google.com.pk/webhp?hl=en#hl=en&q=animals+and+their+youngones>
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=living+thing+and+young+ones>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:



In class, check the level of understanding of your students through brainstorming exercise they have done in the book. To develop their interest in the lesson, you may ask:

- Do you know how a monkey helps its babies?
- Have you ever seen a cat looking after its kittens?
- Who has pigeons at home? How pigeons feed its babies?
- What does your mom do when you get ill?
- If your mom and father are not in home and you are alone in home for only 2 days, what problems you may face?

(Note: There are more questions to ask. Try to involve every student in answering regardless of correct answer.)

Discussion:

As the basic aim of this lesson is to tell the importance of the parents for their babies. This is an important act for the survival of the living things. You should discuss relation of different animals with their babies. You should play some movies that show different animals taking care of their young ones. You may take the examples of hen, cat, pigeon, lioness, elephant, kangaroo, duck, sparrow, crow, eagle, dolphin, sharks, whale, etc. all these animals are well known to children. They will enjoy telling their experience of watching them.

You should tell them the need of this care. This is because animals can survive. If parents do not take a good care, babies will die and hence the population of that animal will be vanished from the earth. If our parents leave us when we are helpless infants, we will not be able to grow and mankind will be in danger then. Discuss what happens if parents do not care for babies? Here is the time when children may realize the impotence of their parents, and start obeying them. You get it done.

In class, let the students read the lesson aloud and underline difficult and the key words

Key words	Common words
Protect	Pets
Take care	Swim
Teaches	Rain and heat
Feed	Young ones
Clean	Joey
Carry	Pouch
Guide	Cycling and riding
Hunt	Medicines

Summarizing:



Summarize the lesson in points and make sure that students have the concept now. You may summarize the lesson as:

- Animals and humans take care of their babies.
- This care makes the survival of the same kind possible.
- Animals feed and protect their babies. They also teach them how to hunt or get food.
- Humans not only feed and teach their children but help them in every field of their lives at every stage.
- We should also obey and take care of our parents.

Assessment:

Once you find that discussion is completed, test the concepts of your students. You may ask:

- Why do parents take care of their babies?
- If cat leaves its kittens when they are born, what may happen?
- How lioness helps its cubs?
- How parent birds feed their babies?
- Make a list of work that our parents do for us.

Interpreting**Think and write**

1. Kangaroo keeps its Joey in its pouch. It protects it from danger.
 - Duck keeps its ducklings in its feathers.
 - Monkey feeds and cleans its babies.
2. Our parents take us to the doctor.
 - They give us food and medicine on time.
 - They help us in studies.
 - They help us play games.
3. Animals and plants are living things. They get hurt too. They help us in many ways. We should also take care of them.
4. A good child obeys its parents and elders.
 - A good child works on time.
 - A good child is neat and clean.
 - A good child keeps the surrounding clean.
 - A good child takes care of other children, animals and plants.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 3 LIVING THINGS (LIFE CYCLE)

Start this lesson in progression with living things.

Aim of the lesson:

Living things show some characteristics. Some of the characteristics are the stages that every living thing passes through. The aim of this lesson is to give the concept of importance of a life cycle of living things that keeps their existence stable on this earth.

Learning objectives:

In this lesson students will know:

- Life cycle of different animals
- Different stages of a life cycle

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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- **Other links:**

Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

- <https://www.google.com.pk/webhp?hl=en#hl=en-PK&q=human+life+cycle>
- <https://www.google.com.pk/webhp?hl=en#hl=en-PK&q=life+cycle+of+living+things>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

In class, check the level of understanding of your students through brainstorming exercise they have done in the book. To develop their interest in the lesson, you may ask:

- Which animals lay eggs?
- Which animals do not lay eggs but give live babies?
- What is the difference a new born baby and you?
- After 10 years what would you be like?
- Does everyone have grand parents? If yes, what is their age and how do they look like? If they are not alive, what happened to them?

(Note: There are more questions to ask. Try to involve every student in answering regardless of correct answer.)

Discussion:

Students have read page 14 and also done its exercise on page 15. You have the idea now what your students have in their minds about a life cycle.

Before you tell them the meaning of a life cycle, show them different pictures of infants, childhood, adulthood and old age. Involve students in identifying the differences among all stages.

Also show the images of different stages of a butterfly, frog, etc. Tell them that every living thing is born, grow and change and becomes an adult. After sometime, this adult produces its babies and becomes a parent. When this parent ages, it dies after sometime. The stages from birth to death give a life cycle that every living thing passes through.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures of different life cycles and ask them to explain in words.

Key words	Common words
Life cycle	Lay
Born	Older
Grow	Stages
Reproduce	Condition
Age	Copies
Die	Seeds

Summarizing:

Summarize the lesson in points and observe if need further explanation. You may summarize as:

- All living things pass through their life cycle.
- Life cycle includes different stages. Stages include, birth, growth and changes, reproduction, aging and death.
- Some animals lay eggs and some animal give birth to their babies.
- Plants grow from a seed. Many seeds produce many plants.

Assessment:

Once you find that discussion is complete, test the concepts of your students. You may ask:

- What does it mean by a life cycle?
- What are the stages in a life cycle?
- Does every animal kind have a life cycle? Give reason of your answer.
- Tell the stages of a life cycle of a lizard, frog, cow, human being, tree and a butterfly.
- Why do we call these stages of a life, a cycle?

There could be more questions to ask.

Interpreting

Think and write

1. Every living things is born, grow, age and dies after sometime. This makes their life cycle. This life cycle lets living things live on earth.
2. Word cycle shows repeated stages. In a life cycle, birth, growth, reproduction, aging, death keep going on.
3. Nonliving things are not living and growing. Therefore they do not have their life cycles. egg, larva, pupa , adult.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 4 HUMANS (VARIATION IN HUMANS)

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with human body parts



Aim of the lesson:

Student knows that humans have common body parts that function as destined. They have also learnt that even having common body parts, we all look different. The basic aim of this lesson is to let students understand the variations among humans that human beings not only look different but also behave differently. Different people have different choices and different nature. Some of the things we can change in us and some cannot. In this lesson, we try to build good manners in students and live gracefully.

Learning objectives:

In this lesson students will know:

- Human are different and alike in some ways.
- Humans look different and behave differently
- Our behaviour and way of representing ourselves make us different from others.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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Visit:

- <https://www.google.com.pk/webhp?hl=en#hl=en&q=variation+in+human>
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=variations+in+human+behaviour>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

In class, check the level of understanding of your students through brainstorming exercise they have done in the book. To develop their interest in the lesson, you may ask them to fill the following chart.

(It is good if you distribute the handouts of this table in a class.)

My friend's choice

Name: _____

Colour	Subject	Dress	Indoor game	Cartoon	Day	Month	Fruit	Video game	Toy

My friend's features

Height (small/short)	Skin colour (brown/white)	Hairs	Teeth (white/yellow)	Body mass (thin/plump)	eyes	Uniform (tidy/untidy)	Behaviour (good/rude)

Every student should participate in this activity.

Discussion:

Students have learnt that we have common body parts. Through the above activity, they will know that how every person looks different and have different choices. Compare the sheets with one another and discuss different looks and choices. As the aim of this lesson is also to develop good manners, make sure that no one gets hurt by anyone on difference. Keep the control in your hand.

Tell them that the difference in looks and behaviour is called a variation. Looking at the activity chart, ask them that what things can be changed and what not. Once they tell, you should tell them how we can change our appearance by changing our dressing style, haircut, body language, etc. Also tell them that we can change our behaviour also from bad to good and good to bad, but only good behaviour is blessed. Tell them some stories of some national heroes who helped others and became heroes for the nation. You should appreciate every student for his or her good behaviour to motivate him or her towards being good with others. Ignore their previous past bad behavioural history.

In class, let the students read the lesson aloud and underline difficult and the key words.

Key words	Common words
Appearance Variation Structure Behaviour Obey	Games Sing Read Tall or short



Summarizing:

Summarize the lesson in points as:

- Variation in humans is a difference of looks and behaviour among them.
- All humans have common body parts but they look different and behave differently.
- Some people are tall or short, brown or white, skinny or plump, etc.
- Some like to play games or read books, watch cartoons or feature films, wear shorts or full pants, etc.
- Some people talk politely or rudely, some help others or avoid others, some always obey elders or disobey them, etc.
- The same person can change himself. He can change his looks and behaviour to look good.

Assessment:

Once you find that discussion is complete, check the concepts of your students. You may ask:

- What variation do you find in your mom and you?
- What does it mean by variation in humans?
- Why all humans look different?
- Can behaviour make people different from others?
- Is it possible to change our looks? How?
- If someone has habits, bad can we change him or her? How?

Interpreting**Think and write**

1. We are similar because we have similar body parts. We look different because we have different height, colour and different behaviour.
2. We can change our habits and behaviour. We can also change our hair style and dresses code.
3. Unlike animals, humans have manners to talk and to eat. Humans wear dresses and they study.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 5 HUMANS (OUR BODY: A PERFECT FRAME)

Start this lesson in progression with human body parts.

Aim of the lesson:

Students know that our body has hard bones inside. The aim of this lesson is to give them the concept of body frame; a skeleton which is comprised of bones and joints. Once they know that the skeleton gives shape to the body, student will be able to understand the body movements.

Learning objectives:

In this lesson students will know:

- Skeleton is the frame of human body that gives shape to it.
- Skeleton protect internal body.
- Skeleton needs joint and muscles to move.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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Visit:

- <https://www.google.com.pk/webhp?hl=en#hl=en&q=human+a+perfect+frame>
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=skeleton>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:



In class, check the level of understanding of your students through brainstorming exercise they have done in the book. To develop their interest in the lesson, you may ask:

- Where are your bones? (Students should identify bones in their body.)
- If there were no bones in our body, what could happen then?
- Why do we have bones? Would it be good if we were like a jelly?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Students know that bones are the hard part of the body, muscles are softer and joints help us twist the body.

Take students to the science lab and show them the skeleton. Demonstrate the structure of the skeleton of different parts. They should know at this stage that different structure of bones gives different make up of skeleton and hence the body shape.

In the lab show the points where two bones meet. This point makes up a joint. Joints help us to move. Show them different joints. Also show them how skeleton is wrapped up by muscles. These muscles let skeleton move freely. Through the demonstration, students will be able to understand that skeleton keeps our delicate organs safe.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
Bones	Bend
Skeleton	Frame
Muscles	Skull
Joints	Healthy diet
Organs	Exercise
	Support

Summarizing:

Summarize the lesson in points as:

- Bones make up a frame of body called skeleton.
- Muscles wrap up the skeleton.
- Joint is the point where two bones meet.
- Skeleton, muscles and joints together help our move freely.
- Skeleton gives support and shape to the body.
- Skeleton protect our delicate organs, such as brain, hearts, etc.

Assessment:

Once you find that discussion is complete, check the concepts through assessment. You may ask:

- We have a perfect body shape. What gives this shape to the body?
- What is the difference between bones and a skeleton?
- Show different joints of your body.
- If there were all straight bones with any joint, what would happen?
- Where skull and what is its job?
- Muscles not only help skeleton move but also gives beauty to us. Explain with examples.

Interpreting

Think and write

1. All bones are not equal, such has short bones of hands and feet and long bones of arms and legs.
2. Joints are the points where we can bend our body.
3. Our different body parts have different shape due to skeleton. Skeleton helps us to it, stand and move. It also protects our delicate organs.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 6: MEDICINES AND CURE

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.



Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand the students that when we get ill we have to take medicine to cure our illness. Proper use of medicine is helpful for us, it will be harmful if we misuse it.

Learning objectives:

In this lesson students will know:

- Medicines are good for us.
- Don't take medicines without doctor's prescription.
- Medicine without prescription could be harmful.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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- <https://www.google.com.pk/search?sclient=psy-ab&hl=en&site=webhp&source=hp&btnG=Search&q=medicines+care+and+cure>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- What mama take when she feel headache?
- How medicines look like?
- Should we do treatment by ourselves?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Ask some question like when you have cough or fever what your mama give you? If you have trouble in your stomach what you mother give you? If your father feel body pain what he will do? Now tell them that medicines are made to cure our illness. We feel better when we take medicine in any type of illness and with proper use of medicine our illness will completely cure.

Tell them always take doctor advice we have any problem regarding health. Do not take any medicine without doctor advice, because self medication is harmful.

Medicines are available in different forms like pills, liquid, cream etc. mostly liquid form given to the children because they easily use it.

Make pair of two student one play the role of doctor and other behaves like patient. Perform this activity by students to understanding them the role of doctor in our life. Tell them the importance of prescription and also tell how harmful self medication is.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
Prescription	Cure
Wounds	Syrup
Medicines	Sick
Treatment	Misuse
Harmful	Doctor
Dangerous	Injection
Checkup	Tablets

Summarizing:

Summarize the lesson in points as mentioned check if you know now.

- When we have any illness, we take medicines for cure.
- Medicines may be dangerous if we misuse them.
- The medicine suggested by a doctor on a paper is called prescription.
- Medicine without prescription could be dangerous and harmful for us.
- We cannot do our treatment, because we are not a doctor.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- When will you go to doctor?
- Doctor gives you a paper of medicines and that is called?
- Should we take medicines without prescription?

Think and write:

1. Medicines are good for us, when we are sick we take medicine and feel better.
2. The written instruction by the physician for the patient regarding medicines is called prescription.
3. If we buy the medicine without prescription it will be harmful for us or we can take wrong medicine too.
4. Sometimes medicines may be harmful for us when we take medicine without prescription.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 7: VARIATION IN ANIMALS



Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand the students that animals have differences among them. These differences are called variation.

Learning objectives:

In this lesson students will know:

- All animals are different and alike in some ways.
- They have different nature and behavior.
- They have different body parts.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

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- <https://www.google.com.pk/#q=+Variation+in+animals>
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=differences+among+animals>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Do all animals look same?
- Tell the name of two pet animals.
- All animals could fly?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Ask them to tell name of some animals. Ask them how you differentiate them? Listen their answers and tell each animal has different characteristics with other it means each animal is different with other. The differences between animals are called variations. Animals have variations on the bases of their colour, size, weight, habitat, body structure etc. Here we discuss some variations like some animals have beaks and some not like eagle and mouse. Some animals have shells like turtle, some have scales like fish, some have long neck and legs like giraffe, some have rough, thick skin, tusk and huge body like elephant etc. give other examples from book.

We can divide animals in two main categories that are vertebrates and invertebrates. Vertebrates have backbone or spine like humans, fishes, birds, reptiles etc. invertebrates do not have backbone or spine like insects, star fish, snail, crab, jelly fish, earthworm etc.

Show the students some flash cards or real animals like cat, dog, hen, or birds flying around them .Ask them questions regarding differences and similarities among the animals.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
Dangerous	Bones
Jungle	Shell
Wings	Human
Crawl	Sharp
Tusk	Among
Friendly	Shapes

Summarizing:

Summarize the lesson in points as:

- There are many differences among animals. This is called variations.
- All animals are different and alike in some ways.
- Some animals have shells, that keep them safe from danger.
- Animals may be vertebrate or invertebrate.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Name two animals who have wings.
- Name two animals who lives in water.
- Some animals don't have legs , how they can move?

Think and write:

1. Some animals have shell at their body it covers the whole body and safe those animal from danger.
2. Prefer student's answer
3. Prefer student's answer
4. Prefer student's answer

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON: 8 ANIMALS (EATING HABIT OF ANIMALS)

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.



Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand the students that animals eat differently and according to their eating habits they can be divided as herbivores, carnivorous and omnivorous. Animals have different types of teeth as their eating habits.

Learning objectives:

In this lesson students will know:

- Three groups of animals.
- They are named as herbivores, carnivores and omnivores.
- They all have different eating habits.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**

Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk

- **Other links:**

- Besides the Net Extra, here we mention links to other sites also which are
 - **educational kids conceptual videos and activities** for elementary students
 - to learn on the web.
 - **Visit:**
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=eating+habits+of+animals>
- <https://www.google.com.pk/webhp?hl=en#hl=en&q=herbivores%2C+carnivores+and+omnivore>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

warm up.

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning . You can start up the bundle of questions like,

- Tell the names of three animals who eat grass.
- Name one animal who have sharp teeth.
- You know human are also animals. how we eat food?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Ask students about different animals, what they eat, what humans eat, ask them what they like to eat. Then discuss... like humans, animals do have their choice and they like to eat things of their choice. Now tell them animals can be divided into three groups according their eating habits. Herbivores are the animals that eat plants or grass only like cow, goat, zebra, giraffe, elephant etc. Herbivores have flat teeth to chew grass and leaves. Some animals eat meat only these animals are called carnivores like dog, lion, cat etc. Carnivores have pointed and sharp teeth to eat meat. The animals that eat both plants and meat, are called omnivores like humans, bear etc. Omnivores have both types of teeth means flat and pointed or sharp to eat plant and meat.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
Carnivores	Scissors
Herbivores	Grain
Omnivores	Grass
Sharp	Leaves
Flat	Plant
Teeth	Animals

Summarizing:

Summarize the lesson in points as:

- Herbivores are plant eating animals.
- Herbivores have flat teeth to eat grass and leaves.
- Carnivores are meat eating animals.
- Carnivores have sharp teeth like scissors to eat small animals.
- Omnivores are plant and meat eating animals.
- Omnivores have flat and sharp teeth to eat both plants and animals.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Which type of animals have sharp teeth?
- Animals who eat plants and meat both are called?
- Animals who have flat teeth are called?

Think and write:

1. They will die because of hunger, they eat small animals with sharp teeth.
2. Herbs means plant and herbivore eats plant.
3. They have both types of teeth sharp and flat.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

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LESSON 9: ANIMALS (KNOWING HABITAT)

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand the students that a place where animals and plants live and grow easily is called their habitat.

Learning objectives:

In this lesson students will know:

- Animals have particular place to live.
- Some animal live in water and some on sand.
- All animal have different habits.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
 - www.learningwell.pk
- **Other links:**
 - Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary studentsto learn on the web.

Visit:

<https://www.google.com.pk/webhp?hl=en#hl=en&q=habits+of+animals>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=where+animals+live>

[ve](#)

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson , do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning . You can start up the bundle of questions like ,

- What does monkey eat?
- Where does fish live?
- Turkeys and hens lives in jungle?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Show flash cards of different animals and plants and ask the students about their habitat.

A habitat is the physical area or environment where the animals or plants live and have everything they need to live. Animals and plants live in different habitat according to their need. There are different kinds of habitat like grassland, sea, soil, desert, forest, mountain etc. We live on land, fishes live in water, lion, tiger, deer etc live in jungle. Camel lives and cactus grow in desert. Ask the students where earthworm, ducks, eagle, cat, live, get their answers. Take more help with the book to explain the chapter.

In class, let the students read the lesson aloud and underline difficult and the key words

Key words	Common words
Jungle	Soil
Deserts	Plant
Ponds	Farm
Habitat	Jumps
Environment	Survive
Burrows	Cactus
Spiky	Able

Summarizing:

Summarize the lesson in points as:

- The place where animal like to live is called habitat.
- Animals and plants choose their habitat if the environment is friendly to them.
- Jungle, forest, farm, grass land, desert, soil, pond and lakes are different habitats for land animals.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Tell two animals name who live in jungle?
- Where does rabbit live?
- Name one plant who lives in water.

Think and write:

1. Water, land, dessert, grass land, hills etc.
2. For all living things habitat should be friendly means they have everything need to live.
3. Cactus has spiky leaves it only survives in desert.
4. Fish live in water because it has gills through which it absorbs oxygen from water to breath.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 10: PLANTS (VARIATION IN PLANTS)

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this chapter is to understand the students that each plant is different with the other. The difference is called variation.

Learning objectives:

In this lesson students will know:

- Plants are different and similar in many ways.
- Herbs, shrubs and trees are three different parts of plants.
- Some plant give fruit and some flower.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk
- **Other links:**
 - Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

<https://www.google.com.pk/webhp?hl=en#hl=en&q=variation+in+plants>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=different+kinds+of+plants>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Do all plants have same size of leaves?
- Tell two flowering plant names.
- Mint flower is soft or hard?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Tell the students that a change in form, position, or condition is called variation. for example some plants have only leaves no flower and fruits, some have only fruits, some have only flowers. We found different types of plants around us like some plants are very tall and have very thick trunk , these are trees. Some are very small plants and do not have wood stem these are herbs. Some have stronger stem that herbs they have thin stems these are shrubs. Some have weak stem and need support to grow, these are climbers, some have thick flashy leaves, some have no leaves etc. All these examples shows the variations in plants.

Take the students to the garden or somewhere they can observe the differences and similarities in plants. Discuss with them what they think and explain with real examples.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
Herbs	Tee
Shrubs	Mint
Climbers	Money
Woody	Stems
Coconut	Flowering
Support	Leaves

Summarizing:

Summarize the lesson in points as:

- Plants also have differences among them. This is called variation in plants.
- Plants are different in size, shape, strength and colour.
- We can make many groups of similar plants.
- Some plants are climber. They need to grow along with some support.



Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Plants which are smaller in size called?
- Which kind of stems shrubs have?
- Which part of plant is biggest shrub or tree?

Think and write:

1. Some plants have weak stem they cannot stand they need support. Like money plant.
2. Plants are of three types. Herb is the small plants with thin stem, for example mint, green corriender etc. Sherbs are also small plants but taller than the herbs. They have thin woody stem or branches. Sherbs are also called bush, for example aela vera, rose, jasmine etc. Trees are tall with a strong woody central stem, for example neem, mango etc.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 11: GERMINATION IN PLANTS

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this lesson is to make students understand that germination is the process of growing new plant from a seed.

Learning objectives:

In this lesson students will know:

- Tree grows from seed.
- The process is called germination.
- Seed receive temperature and right amount of water and starts germination.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**

Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk

- **Other links:**

- Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

<https://www.google.com.pk/webhp?hl=en#hl=en&q=germination+in+plant>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=how+to+germinate+a+plant>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- What are the needs of plants?
- What are the qualities of a good planter?
- Have you ever give water to plant?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Each plant grows from a seed. Seed has the ability to produce a new plant. The process of growing new plant is called germination. The process of germination has some steps:

1. Sow seed into soil.
2. Make sure that seed receive right amount of water and temperature.
3. Seed gets swells and bigger with proper watering.
4. Seed covering get rupture when seed received proper air, water and sunlight.
5. A small root grows from seed to absorb water underground.
6. Shoot appears above the ground.
7. Leaves appear on the shoot.
8. Leaves start making food for the new germinated plant.

Bring some grams, seeds and beans ask students to keep them in water bottle, keep the bottle in the classroom and observe till it sprouts .Then explain them Germination.

Tell the students that if you want to become a good planter you should give proper water to your plants, remove weeds properly to maintain the soil, composting the plants on time.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
plucked	seeds
germination	rocks
temperature	sunlight
weeds	soil
compost	root
manure	planter
maintain	soak



Summarizing:

Summarize the lesson in points as mentioned **check if you know no:**

- Development of a new plant from the seed is called germination.
- Germination takes place in sunlight, air and water.
- Germination starts when there is right amount of water and temperature.
- Good soil and space to grow is also important for germination.
- A good planter gives water to his plants daily. Keeps soil free from weeds, maintains the soil with manure and compost..

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- What produce a new plant?
- What is germination?
- How seeds start growing?
- Root becomes stem and stem becomes?
- We keep soil free from what?
- Which part of the plant makes food for the whole plant?
- What is the difference between root and shoot?
- What is the seed coat?

Think and write:

1. A seed receives right amount of water and temperature and starts soaking water from soil then the seeds start growing.
2. Plants are living thing and they need water to stay alive.
3. Qualities of a good Gardner:
Gives water to plant. Keep soil clean.
4. Seed needs space for air and water to grow well.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 12: MATERIAL USED AROUND

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand the students that we have different materials around us. We use it according to our need. Materials are of two types natural and manmade.

Learning objectives:

In this lesson students will know:

- We use materials for different purpose.
- Material has two types.
- Natural material and manmade material.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**

Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk

- **Other links:**

- Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary studentsto learn on the web.
- **Visit**
:<https://www.google.com.pk/#q=materials+around+us>
<https://www.google.com.pk/webhp?hl=en#hl=en&q=different+materials>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Why children like to play with plastic toys?
- Can you cut wood?
- Your clothes are made of?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Students should be made clear the uses of different material and which ones are natural and, man made.

In our daily life we use different things made up of different materials like wood, rubber, plastic, fabric, paper, glass etc etc. All these materials are used to make different things. Material is used to make an object according to the purpose for which object is made.

Materials are natural or manmade. For example wood, metal, iron, cotton etc are the materials that we found naturally and glass plastic etc are the materials that are manmade.

Now we discuss some materials and their source from where we get them. For example rubber is a natural material and we get it from trees then process it to make useable. We use leather that is obtained from animals then processed it to make it use able. We use it for making jackets, shoes, gloves etc. etc. We get cotton from plants and process it to make fabric through which we make different dresses.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
material	wood
plastic	glass
manufactured	manmade
cement	cotton
leather	object
marble	source
	people

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Choice of material depends on the purpose of object.
- There are two types of materials, natural and manufactured.
- Manufactured material is made by man by treating natural material.
- Natural material is mostly refined before using.
- Plastic and glass are the manufactured materials.
- Rubber, wood, wool, leather, cotton, marbles, gold are natural materials.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- What is material?
- How many types of materials we used?
- Manufactured materials made by man and natural material made by?
- Materials have different properties like soft, hard, rough and flexible. Absorbent. Tell one material of each property.
- Tell two common man made material and two natural materials.
- Name some manmade materials.
- Name some natural materials.

Think and write:

1. It's true that every material comes directly or indirectly from natural sources. For example marble, sand, coal etc are the materials that we directly use while glass, paper, plastic are man made materials. They are not directly available in nature. We change natural sources like sand, oil and wood to make glass, paper and plastic respectively.
2. If we waste paper, we may lose plants is true because paper is made from trees.
3. Prefer student answer.
4. Prefer student answer.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 13: INVESTIGATING FORMS

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this lesson is to make students understand that matter is anything that occupies space. Matter has three states that are Solid, Liquid and Gas. We in our daily life use many things which are matter; some of them are Solid (comb, toothbrush and cup), some are Liquid (water, tea and milk) and some are Gases (deodorant, perfume and Sui-Gas).

Learning objectives:

In this lesson students will know:

- Anything that occupy space we called material.
- There are three forms of matter.
- Solid, liquid and gas.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
 - www.learningwell.pk
- **Other links:**
 - Besides the Net Extra, here we mention links to other sites also which are **educational kid's conceptual videos and activities** for elementary students to learn on the web.
 - **Visit:**

<https://www.google.com.pk/webhp?hl=en#hl=en&q=materials+forms+solid+liquid+and+gas>

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Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning . You can start up the bundle of questions like,

- What we take when we are thirsty?
- When we breath we take air in and out. Air is?
- Anything which occupy space called?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

All the above discussed things are matters as they occupy some space. We can understand the states of matter by following examples.

SOLID: The wood block is solid. Solid has a certain size and shape. Wood block does not change its size and shape by itself as it is a solid object.

LIQUID: Milk is a liquid as it has volume which means it takes up space. Liquid do not have a definite shape but it takes the shape of its container. When you pour milk in a glass it takes the shape of that glass whether the glass is round, square or of any shape.

GAS: Gases are all around us. Gases occupy those spaces which are left by solids and liquids. You can feel the wind when it blows and you can breathe oxygen which is in the air, this wind and oxygen are form of gases.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
breath	solid
mountain	liquid
container	matter
crush	building
occupies	transport
properties	clothes
pour	transport

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Anything that occupies space is called matter.
- There are three states of matter; solid, liquid and gas.
- We use our senses to describe solids, liquids and gases.
- Solids have fixed shape.
- Liquids do not have their own shape.
- Gases take the space left by solids and liquids.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- What are the three states of matter?
- Does solid can change its shape?
- Can we see the gases?
- Does liquid have its own shape?
- Which material travel smoothly?
- Give some examples of solid, liquid and gas that we are using other then the book.
- How we can change the shape of balloon?

Think and write:

1. When we open fizzy bottle the gas in the bottle will spread out.
2. Yes mostly solids do not change their shapes for example a box of playing blocks, packet of toffees, a carton of juices boxes etc.
3. Yes we easily change the shape of a paper bags and knobby bouncy ball because they are soft and easily bend.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 14: CHANGING MATERIALS

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this lesson is to make students understand that matter can change their shapes and sizes if we apply force on them. Forms of matter can be changed through heating and cooling also.

Learning objectives:

In this lesson students will know:

- We can change the form of material.
- Increasing and decreasing temperature can change the form of material.
- Heat changes solid into liquid and freezing changes liquid into solid.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
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Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- A squashed can come into its original shape?
- Name two things that you make with the play dough.
- How water turn into ice?

((Note: There are more questions to ask. Try to involve every student in discussion.))

Discussion:

We can understand this phenomenon through following examples;

- Water evaporates and turns into gas form when it is boiled. Here heat is that force which is changing the form of water from liquid to gas.
- If we take a bowl filled with water and put it in freezer after some hours the water converts into ice. Here cooling is that force which is changing the form of water from liquid to solid ice.

Students must bring a rubber band, a drink can, and playing dough then show them how the materials change because of applied force of pushing, squashing, and stretching etc. Also show them melting of ice.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
freezing	shape
melting	dough
bending	forces
stretching	rubber band
squashing	effect
twisting	low
increasing	original
decreasing	empty

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Materials change their shape, size and form due to some force or temperature.
- Heat makes many solids, especially metals, softer and easier to shape.
- Freezing is the process that causes a substance to change from a liquid to a solid.
- Sometimes changes are permanent or temporary.
- Some material get back to the same position again and some remain the same after a force applied.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- A empty squashed can will retrurn into its original shape?
- How solid material turns into liquid?
- When a temperature is high what will happen to the material?
- How we can change the shape of a metal?
- Which changes are occur when applying force on materials?
- What happen when we bend, squeeze any metal?
- How liquid changes into solid form?

Think and write:

1. Balloon will change its shape and size.
2. A plastic bottle can change its shape when we applying force on it and it change its form when bring it on high temperature.
3. Prefer students' answer.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 15: UP ABOVE THE SKY

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this lesson is to make students understand that the sun, moon and stars never fall down because they are held in the sky due to a force of attraction that is gravity.

Learning objectives:

In this lesson students will know:

- Sun, moon and stars are the materials of sky.
- All objects at sky are hold up by gravity.
- Earth spin around the sun.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
 - www.learningwell.pk
- **Other links:**
 - Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.
 - **Visit:**
 - <https://www.google.com.pk/webhp?hl=en#hl=en&q=materials+at+sky>
 - <https://www.google.com.pk/webhp?hl=en#hl=en&q=sun+moon+stars>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Why we say it's a daytime or night?
- What happen if you stand outside in a sunny day?
- How sun look like?
- Can we see moon at day times?
- What you see on the sky at night?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Earth is revolving on a path around the sun that is called orbit. Sun is a huge hot ball that release gases all the time. The day light which we see is the light of sun.

For better understanding of the formation of day & night we can use computer animation in which students will be shown a sun and an orbit around it on which earth is revolving while rotating on its axis. The part of earth which is facing sun is having day time and the other half is having night.

Explain more details with the help of book.

Take the students to planetarium and show them these realities of space.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
astronomers telescope mysteries spherical solar eclipse dwarf stars giant stars rotation	light energy stick fall down device orbit sunlight satellite axis darker

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Sun is the star of the Earth. It is hot burning ball of gases.
- Earth and other planets move around the Sun on their path called an orbit.
- Moon is airless satellite with a very less water.
- Stars are the big ball of hot gases.
- Some stars are so small called dwarf stars and some are so big called giant stars.
- We experience day and night due to the Earth's rotation.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Why sun, moon and stars are hanging up on the sky?
- Which device is used to see the objects on the sky?
- All the planets move around which objects?
- What is the star of earth?
- What are the movements of planets around the sun called?
- What is the path called on which planets move?
- Does moon have its own light?
- How much time earth takes to complete its one orbit?
- Big stars are called?
- What do you know about the movement of earth?

Think and write:

1. Everything in the sky does not fall because of force of gravity hold them.
2. Sun is nearer to the earth as compare to other stars so it look bigger than other stars.
3. Moon does not have life because there is no air or oxygen.
4. We do not see moon and other stars on the sky on daytime because the light of sun is too much bright and it dim all the stars and their lights.
5. Day and night make due to rotation of earth.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.



LESSON 16: WEATHER CHANGING

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to make students understand that as the earth is revolving we experience different seasons and weather.

Learning objectives:

In this lesson students will know:

- There are four different seasons.
- Summer, winter, autumn, spring.
- Weather changes due to the temperature of sun.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
 - www.learningwell.pk
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 - **Visit:**
 - <https://www.google.com.pk/webhp?hl=en#hl=en&q=different+weather>
 - <https://www.google.com.pk/webhp?hl=en#hl=en&q=weather+changes>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- In which season we feel shivery?
- In which season we feel sweaty?
- Which is the most pleasant season?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Ask students about different weathers, what's their favorite weather and why?.Students can be shown flash cards as well with different weathers and more brainstorming may be done.

Now tell them normally we have four seasons in a year all over the world. All the seasons we face are because of the movement of earth, when earth tilt towards the sun we have long hot days and short nights, when earth tilt away from the sun we have short cold days and long nights.

Earth is surrounded by air. We feel hot, cold, dusty and dry because of the change in temperature and humidity in air.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
shiver	dull
sweaty	cloud
autumn	snowy
spring	hot
summer	shower
winter	blooming
raining	swing

Summarizing:

Summarize the lesson in points as mentioned **check if you know now.**

- Weather changes due to the heat of the Sun.
- Seasons are formed by the Earth's movement around the Sun.
- In summer Earth tilts towards the Sun.
- In winter Earth tilts away from the Sun.
- In springs new plants grow.
- In autumn leaves get dry and fall.



Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- How many seasons are there in a year?
- Which season you like most? Give reason.
- When we have long days and short nights. In Summer or in winter?
- In which season leaves fall off?
- If there is no sun weather can change?
- Which weather is suitable for outside condition?
- Name the four seasons.
- How seasons are formed?

Think and write:

1. We have same season and weather throughout the year. Human and plants cannot survive longer.
2. Weather is the daily and immediate change temperature, humidity, wind speed, amount of sunshine etc, Season is the long term geographic condition in an area normally over a 3 month period.
3. Spring.
4. Weather is influenced by the earth's rotation and by its tilt towards or away from sun. Air keeps on changing its behavior due to heat of the Sun. Sometimes it is warm, sometimes it is cool, sometimes its dry, sometimes it humid. These continuous changes cause different weather.
5. In autumn days are short so the leaves do not get the sufficient amount of sunlight to make the food for plants and get weak and fall down.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 17: UNDERSTANDING MOVEMENT

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous grade.

Aim of the lesson:

The aim of this lesson is to understand students that change in position is known as movement and each movement needs force.

Learning objectives:

In this lesson students will know:

- Movement is the change of position.
- Things moves due to force.
- Amount of force affect the movement.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at
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 - <https://www.google.com.pk/webhp?hl=en#hl=en&q=effect+of+force+on+movement>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Name two things that can fly.
- If we want to open the door what we do push it or pull it?
- Can we drive toy car smoothly on a bumpy road?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Objects can change their positions if we apply force on them. It means that we can move things by force. Displacement of change in position depends upon how much force is applied over an object. Movement varies with amount of force, surface and friction relatively.

Give examples from the class room, or bring things along...Like open a container, push the door open, open or close the book etc .explain by applying less or more force to push or pull.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
dropping	surface
swinging	heavy
bouncing	lighter
jumping	position
movement	affect
friction	pushing
quickly	pulling

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Movement is the change of a position.
- Things move and change their position when we push or pull them.
- Heavy things need bigger force to move or stop.
- Light things need lighter force to move or stop.
- Surface affects the movement.
- Friction is the opposite force between two objects.



Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- How air resist us?
- When the surface have solid grip it has low friction or high friction?
- How surface affect the movement?
- How an object can change its position.
- If two surfaces grip each other it shows high friction or low friction.
- What is friction?
- Define low friction.
- Define high friction.

Think and write:

1. *Writing paper we write fast and on a rough paper (like sand paper) we write slowly.*
2. *Force makes things move. If we applying more force anything move fast and if applying less force anything move slowly.*
3. *Yes surface effects the movement. Rough and bumpy surface slow down the speed of vehicles while a smooth surface speed up the vehicle.*
4. *Prefer students' answer.*

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 18: NATURAL FORCES

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this lesson is to make students understand that there exist some natural forces on earth that are wind, water and gravity which keep working all the time in our surrounding.

Learning objectives:

In this lesson students will know:

- Natural forces found in nature.
- Forces can change direction and shape of anything.
- Some powerful natural forces are water, wind, gravity, Frightening water.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

The Net Extra.

Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk

Other links:

Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

<https://www.google.com.pk/webhp?hl=en#hl=en&q=natural+forces>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=effect+of+natural+forces>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- What happens when we trough the ball in the air?
- Can we walk on space?
- Name one movie name in which you see water destroying thing.

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Tell them wind, water and gravity are some natural forces that keep working all the time in our surrounding. Water force can cause tsunami and flood which can destroy villages and cities.

Wind force can create huge tornadoes or hurricanes which can destroy things around them.

Gravity is a force because of which everything on earth remains on its place. Without gravity earth would be like space where astronauts float in air as there is no force which can pull them towards any surface.

Discuss the strength of wind and sea .Show the students some videos of hurricane and floods and other disasters so that they can easily grab the point.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
wrecked	storm
destroying	wind
frightening	grown
hurricane	breeze
tornadoes	pleasant
gravity	village
spiraling	natural

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Natural forces are found in nature.
- Water moves sea animals to the beach, moves logs and boats, pushes soil and stones along the river.

- Breeze is the pleasant wind. It gently moves things.
- Wind is stronger than breeze.
- A hurricane is a huge storm. It has strong spiraling wind.
- Tornadoes are the powerful rotating air in sea or land. It can also destroy things around.
- Gravity of the Earth pulls all objects towards the ground.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- Where natural forces are found?
- Name one powerful air in the sea or land.
- Hurricane is a huge storm what will happen when it comes?
- Gravity is the force of earth what does it do?
- Why we cannot survive on space?
- What is the difference between breeze and hurricane?
- How natural force sometimes destroys things?
- What is tornadoes?

Think and write:

1. We cannot see air but we can see things are moving due to wind. We cannot see gravity but we can walk on earth due to gravity.
2. Without gravity earth would be like space where astronauts float in air as there is no force which can pull them towards any surface?
3. Sometime friendly water become frightened and destroys cities and villages. Like tsunami and flood which can destroy villages and cities, huge tornadoes or hurricanes which can destroy things on earth.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 19: ELECTRICITY: THE POWER FLOW

Time required: **180 minutes** or **3 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The aim of this chapter is to make students understand that electricity is a form of energy that operates electrical devices/appliances.

Learning objectives:

In this lesson students will know:

- Electricity is the type of energy.
- It gives heat, light, sound and movement.
- Electricity generates from coal, natural gas, sun's energy, wind or water.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

- **The Net Extra.**
 - Net extra is especially designed for the teachers and the students. Here you can find not only the text material but also the related information, activities and exercises. You can guide your students to use net extra for more information. Log on to net extra account at www.learningwell.pk
- **Other links:**
 - Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

<https://www.google.com.pk/webhp?hl=en#hl=en&q=electricity>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=electricity+generated+from>

Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- Do the batteries need cable or switches.
- All batteries come in same size?
- Name two electric appliances that need cable and switches to run.

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

Turn off the lights and fans of the class for a while. Then ask the students to think about the other uses of electricity.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
lightening	plug
electricity	heat
appliances	cable
switches	power station
socket	source
batteries	energy
leaking	thousand

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Electrical appliance cannot run without electricity.
- Coal, natural gas, Sun, wind or water are the sources of electricity.
- We get electricity from mains and batteries.
- Main electricity needs power cables and switches.
- Main electricity comes from power stations.
- Batteries are portable and safer than mains electricity.
- We should be careful while handling or moving nearby the electricity.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- What is electricity?
- From where main electricity comes?
- How batteries are safer than main electric?
- Name three sources of electricity.
- How electronics devices are operated?
- What are the two manmade sources to get electricity?
- How can we get main energy from power station?
- What happen if there is no electricity?

Think and write:

1. Lightning in the sky during heavy rain is the best example of natural electricity.
2. Electricity and heat produce heat and sound like heater, electrical stove, speakers, loud speakers etc
3. Following are some safety precautions:
 - Never touch broken cable or leaking batteries.
 - Never put too many switches in one board.
 - Do not mix liquid into electricity.
 - Never put batteries into your mouth.
4. Batteries are safer than main because they do not need power cables, plugs and switches.
5. Coal, natural gas, sun, wind and water are the sources through which we generate electricity.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

LESSON 20: LET'S MAKE A CIRCUIT

Time required: **360 minutes** or **6 hours** with Activity book and revision of the lesson.

Start this lesson in progression with previous lesson.

Aim of the lesson:

The path of flow of current is called circuit. There are two types of circuit that are; Open Circuit and Close Circuit.

Learning objectives:

In this lesson students will know:

- Electricity travels in a path circuit.
- Electricity needs a complete circuit to work.

Learning objectives:

In this lesson students will know:

- Electricity is the type of energy.
- It gives heat, light, sound and movement.
- Electricity generates from coal, natural gas, sun's energy, wind or water.

Helping tools:

Teacher resource book will give you an ample support in teaching. Further, to prepare you for the lesson, visit the following sites:

The Net Extra.

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Other links:

- Besides the Net Extra, here we mention links to other sites also which are **educational kids conceptual videos and activities** for elementary students to learn on the web.

Visit:

<https://www.google.com.pk/#q=electrical+circuit>

<https://www.google.com.pk/webhp?hl=en#hl=en&q=how+to+make+a+circuit>



Before you start a lesson in a class, give reading task of the lesson in homework to your students. This reading task will help them understand the lesson and evaluate their level of understanding through brainstorming exercise.

Warm up:

It's time to plough. Before start a lesson, do brain storming of students from their own observations things that they already know. Let them enthusiastically involve in creative thinking and active learning. You can start up the bundle of questions like,

- If you want to turn bulb of your room what will you do?
- If your toy car has no battery will it run?
- Electrical circuit travels from?

(Note: There are more questions to ask. Try to involve every student in discussion.)

Discussion:

When we study about current we need to know that there are conductors and insulators. Conductors are those materials which let the current flow through them and insulators are those materials which never allow the current to pass through them. Current moves on a path that is called circuit, each circuit have negative and positive terminal and current flows from positive to negative terminal. Basically we use wires to make circuits and these wires are mostly made up of copper (conductor) and are covered with rubber/plastic (insulator).

Show the real circuit to the students. Make them do it themselves, how to open and close the circuits.

In class, let the students read the lesson aloud and underline difficult and the key words. Show them the pictures and ask them to explain in words.

Key words	Common words
switch	bulb
buttons	click
circuit	path
travels	wires
battery	holder
holder	support
device	clips
electricity	connect

Summarizing:

Summarize the lesson in points as mentioned **check if you know now:**

- Electricity travels in a path that is called a circuit.
- Electricity needs a complete circuit to work.

- Switches disconnect or connect the circuit.
- Conductors let the current pass through them.
- Insulators do not let the current pass through them.

Assessment:

Once you find that discussion is completed, test the concepts of your student. e.g., you may ask:

- If circuit has no battery, the bulb will open?
- When the switches disconnect to circuit?
- When the switches connected to circuit?
- How current flows in a circuit?
- What is a circuit?
- What is the difference between conductor and insulator?
- Give some examples of insulators.
- Give some example of conductors.

Think and write:

1. Switches play an important role in electrical devices because they allow current to flow or stop.
2. Electricity needs a complete circuit to work because electrical circuit travel from positive to negative.
3. Circuit is called a path because it is a only way through which current flow.
4. Yes conductors may be harmful for us when if they are not covered because it allow current to pass through it easily.
5. Wood is an insulator because it not allow current to pass through it.

Note for a teacher

Make sure students write answers themselves. You should check their concepts as well as their writing skills. It will help you and English language teacher to understand your students where they are weak at and what to improve now.

For grade 2 students, answers should be simple and not be with complicated grammar structure.

Lesson Planner
G. Science (Class 2)

Chapters	Time -min	Description	Total time min
Dead or Nonliving	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Care for young ones	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Life cycle	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Variations in humans	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Our body: A perfect frame	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Medicine and cure	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Variations in animals	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Eating habits of animals	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Knowing habitats	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	
Variations in plants	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	

Lesson Planner
G. Science (Class 2)

Chapters	Time	Description	Total time
Germination in plants	90	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Materials used around	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Investigating materials	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	
Changing materials	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	
Up above the sky	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	
Weather change	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Understanding movements	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	
Natural forces	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Electricity: The power supply	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	180
	45	Discussion and assessment	
	45	Observatory + Think and write + Check if you know now	
	45	Activity book exercises	
Let's make circuit	45	Warm up, brain storming (with the help of You will need) and exercise given in book.	360
	90	Discussion and assessment	
	90	Observatory + Think and write + Check if you know now	
	135	Activity book exercises	