

New Amazing Science

3

Teaching Guide

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Unit 1

THE LIFE CYCLES OF PLANTS AND ANIMALS

Answer Key

1. Name the four stages in the life cycle of a plant.

- Germination
- Seedling
- Mature Plant
- Aging and Death

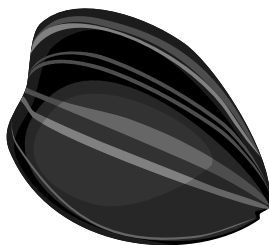
2. Mark the following as True or False.

- A tiny seed turns into a tall tree. **True**
- A caterpillar transforms into a butterfly. **True**
- Pupal is the first stage in the life cycle of a butterfly. **False**
- Seedling is the young plant. **True**

3. Match the following:

Term	Statement
Germination	Can be of different sizes and shapes
Mature Plant	The seed starts to grow
Death of a Plant	Leaves turn yellow and dry
Flowering	A stage when plants produce flowers and seeds

4. Identify the following stages:



Seed



Mature/ Flowering Plant



End of Life

Answer Key

Worksheet 2

1. Tick ✓ the correct answer:

- Baby sea turtles use light of the moon to find their way to the ocean. ✓
- Birds lay eggs. ✓
- Growth is the process of increase in size. ✓
- Animals always stay young.

2. Name the stages in the life cycle of a hen.



Egg



Chick



Growth of chick



Hen

3. Fill in the blanks:

- Salmon babies are called as **alevin**.
- Fry grows into **smolt**.
- Adult animals take care of their **food** and **shelter**.

4. Give short answers:

a. What is metamorphosis?

Ans: It is a change in an animal's form, structure, or appearance as it grows from a baby to an adult.

b. Give two examples.

Ans: **Frog , butterfly**

5. Draw and colour the caterpillar of a butterfly.



Answer key

Quick Review

1. Draw and explain life cycle of a hen.



Egg



Chick



Growth of chick



Hen

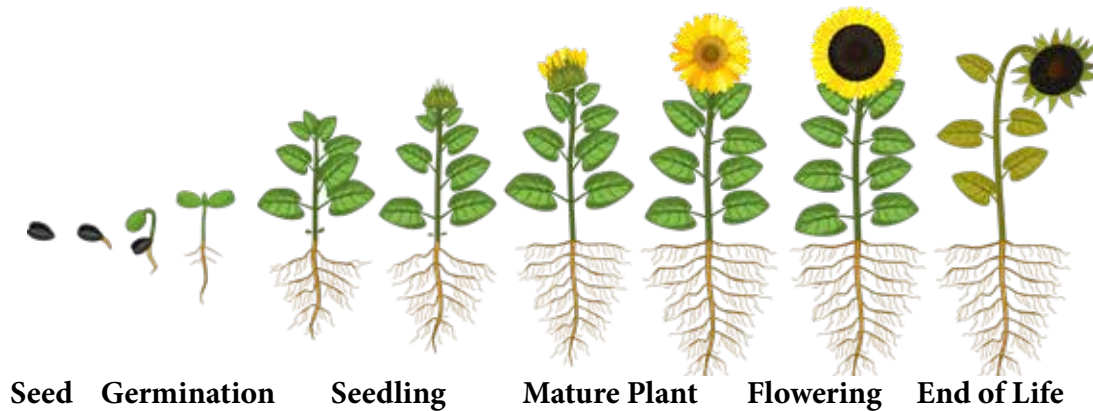
1. A Hen lays eggs
2. A Chick hatches from it after some time. The chick is covered with feathers.
3. The chick grows and becomes stronger.
4. A grown, adult chick is a hen or a rooster.

Chapter Review

1. CHOOSE THE BEST ANSWER.

1	a
2	b
3	a

2. LABEL THE LIFE CYCLE SHOWN BELOW



Seed

Germination

Seedling

Mature Plant

Flowering

End of Life

3. GIVE SHORT ANSWERS TO THE FOLLOWING

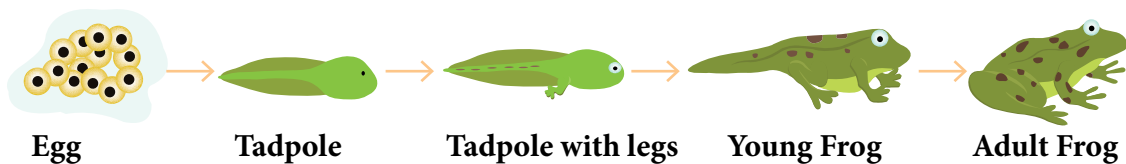
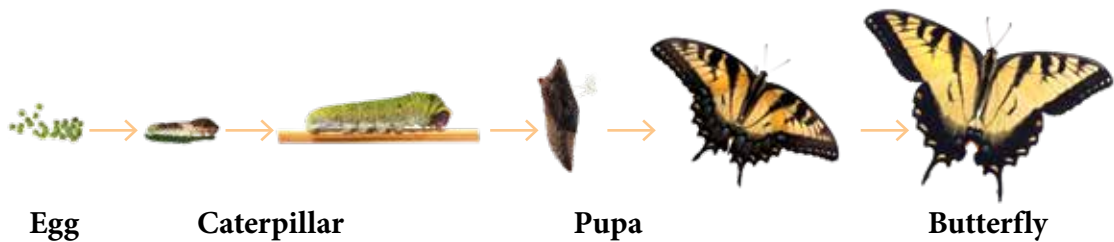
1. Ans. The different stages in the life cycle of a living thing from birth till death is called life cycle.
2. Ans. Living things age in time and the life cycle ends due to disease or mature age.
3. Ans. When the seed starts to grow, the process is called germination. The process by which a seed grows into a plant.

GIVE ONE WORD ANSWER

Number	Answer
1	Germination
2	Death
3	Mature/adulthood

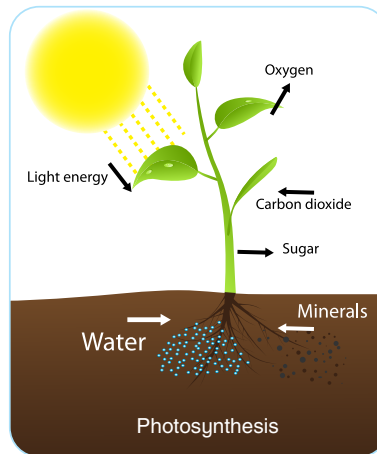
4. LABEL THE LIFE CYCLE OF THE FOLLOWING ANIMALS

Life cycle of a butterfly



Answer Key

1. Draw and label a diagram to show photosynthesis in the plant.



2. Name the essential requirements for making food in green plants.

- Water
- Air
- Sunlight

3. Match the following:

Feeding type	Definition
Herbivores	Animals that eat other animals
Carnivores	Animals that eat plants
Omnivores	Animals that eat dead animals
Scavengers	Animals that eat animals as well as plants

4. Give two examples:

- **Goats** and **cows** are herbivores.
- **Lions** and **eagles** are carnivores
- **Bears** and **Raccoon** are omnivores.
- **Jackel** and **Hyenas** are scavengers.

Answer Key

Worksheet 2

1. Name the food groups:

- Fruits
- Vegetables
- Proteins
- Dairy products
- Grains
- Dry Fruits

2. Fill in the blanks:

- Taking care of our bodies keeps us **healthy**.
- We **grow** well if we eat balanced diet.
- **Meat** provides proteins.
- Healthy people do not fall **sick** easily.

3. Name the four healthy habits:

- Eating balanced diet
- Keeping clean
- Sleeping well
- Exercising

4. Mark as True or False:

- Human growth is retarded with balanced diet. **False**
- Good food gives us energy. **True**
- Unhealthy people are always careful about their lifestyle. **False**
- Washing hands after eating keeps us safe from germs and infections. **True**

Quick Review

Imagine you have a friend who feels tired all the time. He is weak and often gets sick. What advice would you give him to improve his health?

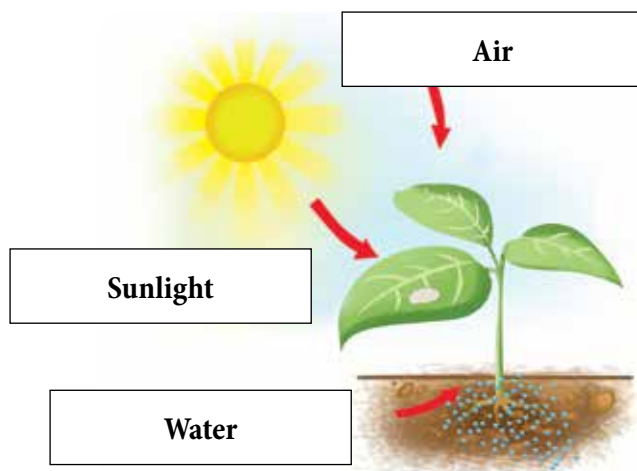
Ans: Avoid skipping meals since extended fasting causes blood sugar levels to drop. Consume more fruits, vegetables, wholegrain meals, low-fat dairy products, and lean meats to maintain a healthy diet. Have a good sleep.

Chapter Review

CHOOSE THE CORRECT ANSWER.

Number	Answer
1	b
2	a
3	a
4	a

Label the following diagram



GIVE SHORT ANSWERS TO THE FOLLOWING

1. Ans. Plants need sunlight, water, and Carbon dioxide in the presence of Oxygen to make food
2. Ans. Balanced diet is food that includes a variety of food groups in the right amount.

3. Ans. Plants make their own food through a process called photosynthesis. Plants make their own food using sunlight, water, and air.
4. Ans. Eating healthy food helps us live longer, maintain a healthy weight and reduce our risk of chronic diseases.

LOOK AT THE IMAGES BELOW AND CATEGORIZE THEM IN THE TABLE GIVEN BELOW:

Herbivores	Carnivores	Omnivores
Cow	Tiger	Bear
Goat		Raccoon
Elephant		

Unit 3

ECOSYSTEM AND HABITATS

Answer Key

1. Fill in the blanks:

- The Sun is vital for life on Earth.
- Photosynthesis is the process by which plants make their own food.
- The Sun provides us with warmth which provides heat.
- The home of an animal or a plant is known as its habitat.
- Plants and animals survive in particular habitats.

2. Recognize the habitat in the following:



Polar Region



Desert



Forest



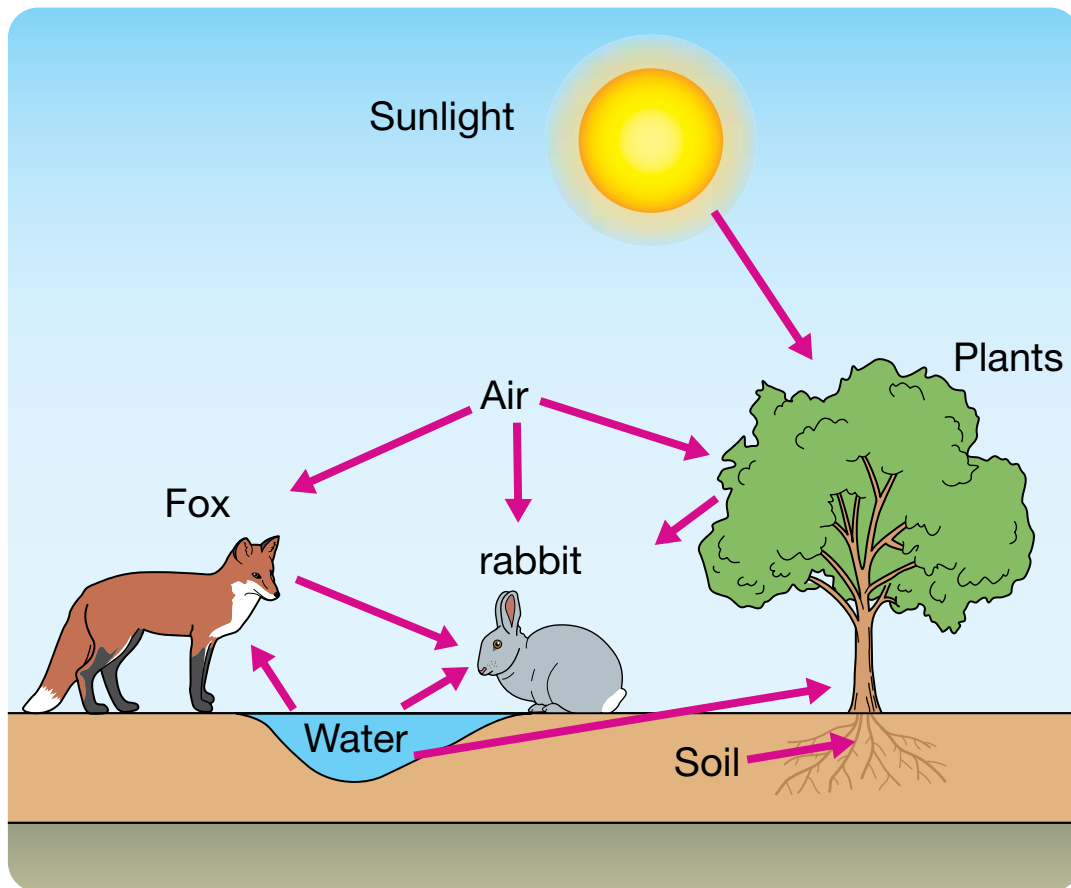
Aquatic

3. Match the following:

Habitat	Examples
Aquatic	Grey wolf, ferns
Forest	Seaweed, dolphins
Desert	Arctic fox, Antarctic lichens
Polar	Cactus, scorpion

Answer key

1. Draw a diagram to show how ecosystem works.



2. Mark as True or False:

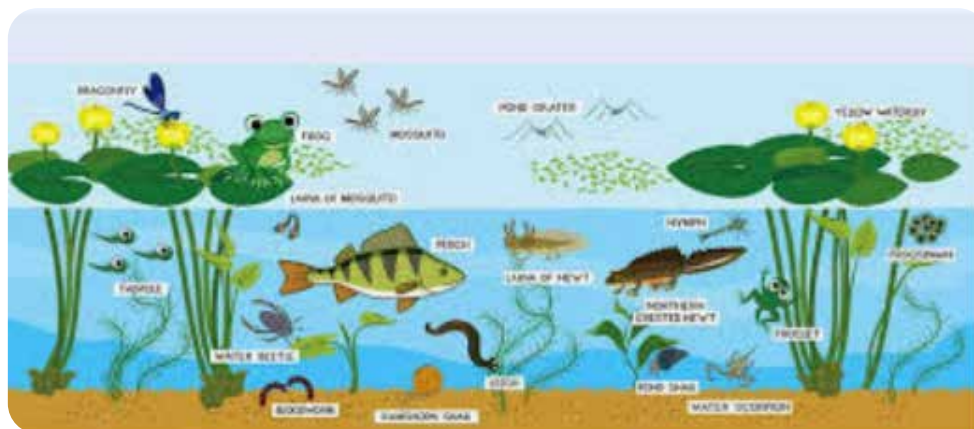
- An ecosystem works by the interaction of all living organisms. True
- Only non-living things are part of an ecosystem. False
- Air has oxygen for breathing. True
- Plants need animals for food. False
- Light allows animals to see. True

3. List down three activities by which human activities are affecting habitats.

- Cutting down trees
- Building cities
- Pollution

Quick Review

Draw your own ecosystem and label the parts. Include at least one plant, one animal and one non-living thing. Also draw arrows to show how they work together in an ecosystem.



Match the following:

It allows animals to see	Water
Snow hare lives in this kind of place	Light
It is used for drinking	Cold

Chapter Review

Choose the correct answer

Number	Answer
1	a
2	b
3	b
4	a

Give one word answer

Number	Answer
1	Desert
2	Tundra
3	Sun
4	Camel
5	Plants

Draw lines to connect the animal to its correct Habitat. Write the name of the animal and its habitat.

Draw an animal that you find in aquatic ecosystem. Point out the features that help them survive



Gills, scales, fins, a flexible back bone (clown fish)

Answer Key

Fill in the blanks:

- Matter is all around us.
- Matter occupies space.
- Things around us have weight.
- Gas is a state of matter with no fixed shape or volume.

Name the states of matter of the following:

- Rocks solid
- Air bubble Gas
- Honey liquid
- Glaciers Solid
- Hot air balloon gas

Draw diagrams to show objects as example of solid, liquid and gas.



Solid



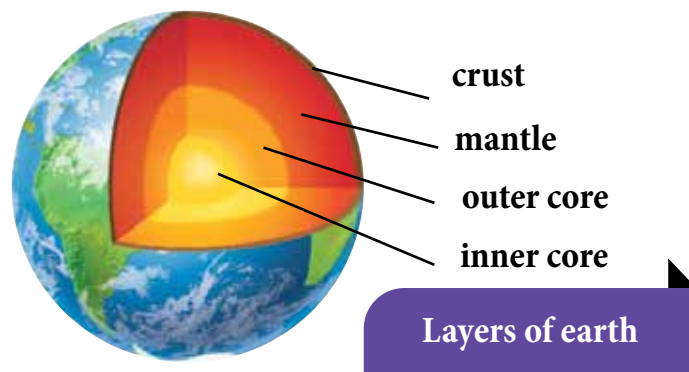
Liquid



Gas

Answer Key

1. Draw and label a diagram to show layers of Earth.



2. Name the three states of matter.

- Solid
- Liquid
- Gas

3. Match the following:

Water	Heated or cools, changes state
Matter	Found in all three states
Solid	Ice lollies
Freezing Juice	Are mostly liquid
Oceans	Changes into liquid by heating

Answer Key

Quick Review

1. Mention which states the following matter is found in.

Matter	State
Steam	Gas
Leaf	Solid
Milk	Liquid
Soup	Liquid
Cup	Solid
Water Vapour	Gas

Quick Review

Decide which state of matter is in the pics below:



Solid



Liquid



Gas

Chapter Review

CHOOSE THE CORRECT ANSWER

Number	Answer
1	a
2	b
3	b
4	a

Give short answers

1. Liquid, gas
2. Gas
3. Solid
4. Crust, mantle, inner core, outer core

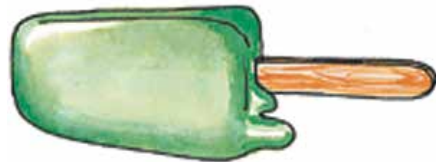
Write correct state of the matter in the blank

1. Water **liquid**
2. Balloon **gas**
3. Juice **liquid**
4. Stone **solid**
5. Air **gas**
6. Ice **solid**

DRAW AND NAME STATE OF THE MATTER BELOW WHEN IT IS COOLED OR HEATED



Heated →



liquid



Cooled →



Solid



Heated →



gas

Answer Key

1. Fill in the blanks.

- The energy that comes from a **light** source helps us to see.
- **Sound** energy enables us to hear.
- **Heat** energy makes things warm.
- Devices work due to **electrical** energy.

2. Look at the following images, name the objects, and recognize the type of energy.



Candles produce heat and light



Fireflies produce light energy



Sun produces light and heat



Flute produces sound

Mark as **True** or **False**.

- Hydroelectric energy is produced by wind. **False**
- Certain jellyfish in the oceans produce their own light. **True**
- To run a mobile phone, we need to charge it with electrical energy. **True**
- A turbine turns wind energy into electrical energy. **True**
- Animals use sunlight to produce their food. **False**

Answer Key

Quick Review

It is used to make hydroelectric power	Natural Gas
It is a black liquid used to make fuel	Water
We burn it to make ourselves warm	Coal
It comes from our stoves	Wood
It is old plant matter	Sun
Solar panels use its energy	Oil

Chapter Review

1. CHOOSE THE CORRECT ANSWER

Number	Answer
1	a
2	b
3	b
4	a

2. GIVE SHORT ANSWERS

- Ans. Natural gas is used to power stoves and gas heaters.
- Ans. Sun provides energy in the form of sunlight to plants due to which they can make their own food.
- Ans. Hydroelectric power is generated by the dams which is then used to run our home appliances.
- Ans. Light helps us to see.
- Ans. We use energy for heating and cooling our homes. e.g., electricity is used to run fans and electric cookers.

3. WRITE SHORT NOTE ON:

- **Coal:** Coal is an energy resource burned to generate electricity. In coal-fired power plants, heat is produced, which converts water into high-pressure steam, which drives turbines to produce electricity.
- **Oil:** A primary source of energy that comes from burning oil to generate electricity and power. From oil, transportation fuels, heat and light are produced which are useful energy for all of us.
- **Water:** The primary form of energy, harnessed in hydroelectric power, which is generated by the movement of water, (in the liquid state) through a turbine, e.g., dams and rivers.

Unit 6

NATURAL RESOURCES

Answer Key

1. Match the following:

Natural Resource		Use
Water	/	Breathing
Air	/	Drinking
Soil	/	Building
Minerals	/	Plant Growth

2. Fill in the blanks:

- Dams are constructed to produce **electric energy** through the power of water.
- **Stones** and **metals** are found in land.
- Life is impossible without **air**.
- **Deforestation** is a big danger to plant and animal life.
- We get **meat** and **eggs** from chicken.
- Animals and plants will **die** without water.
- Some species of plants and animals can go **extinct** with overuse.

3. Look at the images and label.



Deforestation (limiting homes for animals and plants)



Building cities (affect natural resources)



Tap water (Overuse of natural resources)



Quarry (Changing the land)

Answer Key

1. Define pollution.

Ans. 'Pollution is when harmful things go into the air, water or ground and make them dirty.'

2. Name the types of pollution.

- Air
- Water
- Land
- Noise
- Light

3. Write any four ways to reduce pollution.

- Reduce, Reuse, Recycle
- Usage of public transport or carpool
- Avoid use of public transport
- Energy saving measures

4. Identify the image and name the endangered species.



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Snow Leopard



Indus River Dolphin



Black Buck



Green Turtle



Forest Dormice

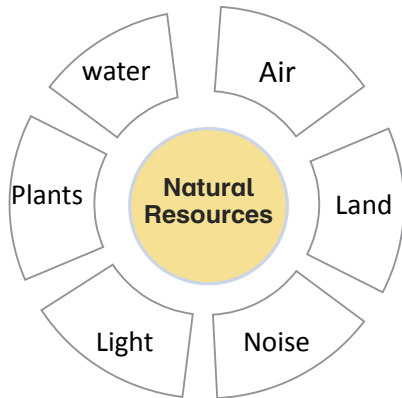
5. Name any two extinct animals.

- Dinosaur
- Do do bird

Answer Key

Quick Review

1. Fill in the names of natural resources.



Quick Review





1. Look around the surroundings of your home or school. Can you identify any kind of pollution?
Noise pollution is prevalent in my locality.

Chapter Review

1. CHOOSE THE CORRECT ANSWER

Number	Answer
1	b
2	c
3	a
4	a

2. MATCH THE IMAGE WITH THE DESCRIPTION

Help plant grow	✗	
Deforestation	✗	
Use wind to make electricity	✗	
National animal of Pakistan	✗	

3. FILL IN THE BLANKS

Number	Answer
1	Furniture
2	Light
3	Sun
4	Littering
5	Asthma
6	Carbon dioxide

ANSWER BRIEFLY

Ans.

Conserve water

Use renewable energy

Ans.

Indus River Dolphin

Markhor

Ans. 'Extinct animals are species of animals that have completely died out and no longer exist.'

Answer Key

Worksheet 2

1. Write three ways tools are helpful for us.

- Building houses
- Cooking tools
- Used as weapon

2. Look at the following images and name the simple machine..



Pulley



Lever



inclined plane

3. Name the following vehicles from the past.



Bullock cart



Tonga



Bicycle

4. Name and draw a vehicle that can carry 5 people.



Car

Answer Key

Quick Review

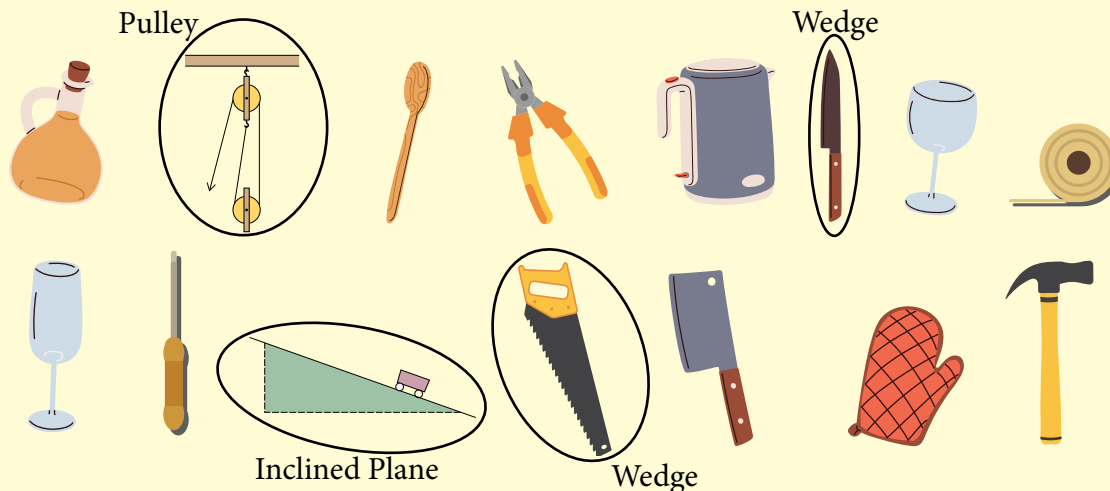
Ans. Teacher will ask students to create a story to help out people in difficult situations with extraordinary efforts and smart use of the forces.

Hints:

- A child hanging from a balcony
- A traffic accident about to happen

Quick Review

Circle the simple machines and write the names of the type of simple machines in the picture given below.



- Students to colour.
- Names of machines:
- Bicycle, ladder, wheelbarrow, wedge, Tools(various) like scissors, screw, can opener, nails, stapler, hammer, plier, nuts, and bolts

Vehicles of the past	Vehicles of present
People used their strength to move the vehicles	Machines help move things faster
Simple machines were used, like pulley, wheel and axle	The machines help us move faster and are less tiring

Chapter Review


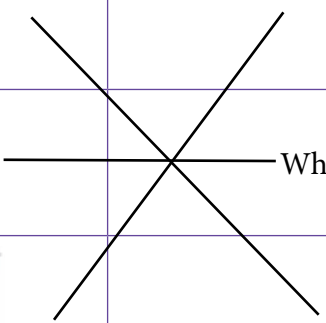



1. CHOOSE THE CORRECT ANSWER

Number	Answer
1	b
2	a
3	b
4	a

2. FILL IN THE BLANKS

Number	Answer
1	Motion
2	Pulley
3	Force
4	Fuel/Electricity

3. MATCH THE PICTURES OF SIMPLE MACHINES WITH THEIR NAMES

		Lever
		Wheel and axle
		Pulley
		Inclined plane

4. ANSWER THE FOLLOWING

1. Ans. Simple machines are tools that make work easier by changing the force needed or the direction of the force.
2. Ans, Lever is a bar that rotates on a fulcrum, while the inclined plane is a sloping surface used to lift heavy objects by distributing the force over a longer distance.
3. Ans. Old transport was about animals like buffalo, donkeys, camels, etc. In modern transport, we have cars, bikes, ships, and trains. In comparison to past ones, modern transportation is significantly faster, more convenient, accessible and safe.

Answer Key

1. State whether True or False.

- Our Sun formed in a solar nebula. **True**
- The Sun is located in the centre of the solar system. **True**
- When light hits an object, it always passes through it. **False**
- The light travels in irregular lines. **False**

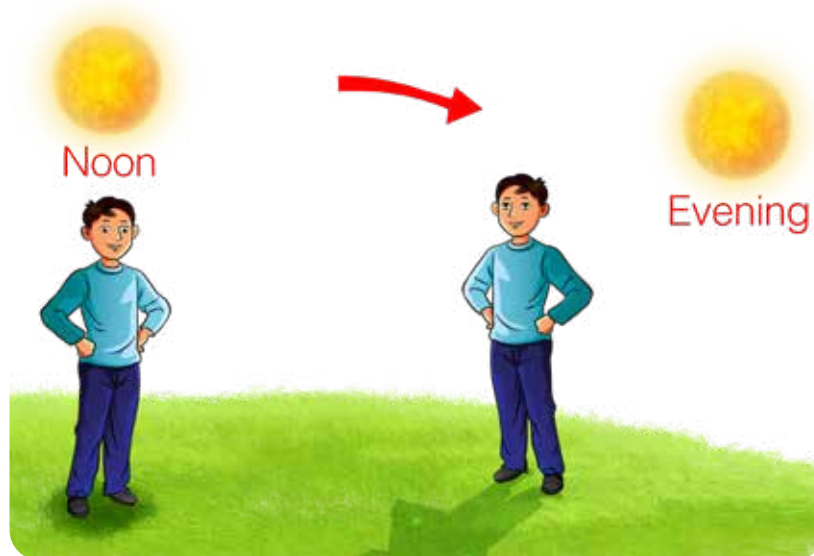
2. Complete.

- **Morning:** The Sun is **low** in the sky.
- Shadows are **long** and stretch towards the **West**.
- **Noon:** The Sun is **high** in the sky.
- Shadows become **short** and they appear directly **beneath** the objects.

3. How is shadow formed?

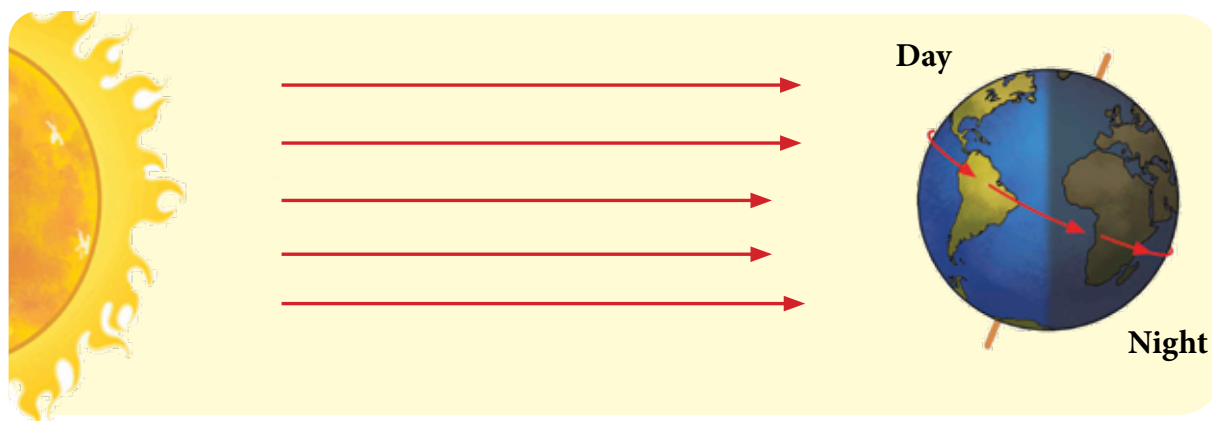
Ans. When light shines on an object, but cannot pass through it a shadow forms. The object blocks the light so there is a dark shape behind the object where the light does not shine.

4. Draw a diagram to show shadow formation at noon time and evening time.



Answer Key

1. Draw a diagram to show the rotation of the Earth.



2. What are cardinal directions?

Ans. There are four main directions known as cardinal directions. They are North, South, East and West.

3. Match the following.

Directions	Facts
Cardinal directions	The Sun rises in this direction
East	Help find our way
West	Its opposite to South and East is on the right
South	The direction where Sun sets
North	East is on the left and West on your right

Answer Key

Chapter Review

1. CHOOSE THE CORRECT ANSWER

Number	Answer
1	a
2	a
3	a
4	b

2. WRITE TRUE OR FALSE

Number	Answer
1	True
2	True
3	True
4	False
5	True

3. ANSWER THE FOLLOWING QUESTIONS IN DETAIL 4. ANSWER THE FOLLOWING

1. Ans. Shadows are dark areas formed when light falls on an object but cannot pass through it. The object blocks the light thus there is a dark shape behind the object where the light does not shine. This dark shape is known as shadow.
2. Ans. The Sun gives us light and heat which are essential for life. The Sun helps plants grow by providing the energy they need for photosynthesis. It also affects weather and seasons. Without Sun life is impossible.
3. The time of the day can be estimated by observing the direction and length of shadows. For example: In the morning, The Sun is low in the sky and shadows are long and stretch towards West, so with the help of sundial we can estimate time by looking at the shadow.



Sunset

West



South



North



East