Wizz World of SCIENCE

GRADE 3



E-Sample

Wizz Publishers

Aligned with Single National Curriculum

PREFACE

Wizz World of Science for grades I to 7 has been conceptualized, penned, composed and designed by professionals and educators who have vast experience of dealing with subject of science in the past. Our books lie well within the frameworks defined by National Curriculum. The newly introduced National Assessment Framework (NAF), that is now an integral part of National Curriculum Framework (NCF) has been particularly incorporated in Wizz World of Science Series to make sure that basic purpose of this initiative regarding policy and practice level to improve quality of education is actually met. The quality of education has been further made sure with holistic and cognitive approach that identifies specific areas of learning and development that a today's student requires. The series:

- Guides students in a very simple way how to solve the cognitive tasks by creating a comfortable zone.
- Encourages students to practice and apply concepts.
- Involves students in interactive exercise and activities.
- Help students to create a natural space for thinking through well-planned activities.

WHY WIZZ PUBLISHERS?

Wizz Publishers is the best choice for students because it is:

- Backed by practical experience and critical analysis for over 30 years.
- Developed, designed and printed with the latest and modern techniques.
- Available at economical prices keeping in view the recent economic melt down domestically.
- Based on well-planned activities and systematically developed exercises.
- Helpful for students to develop the 21st century life skills for a bright future.

PROJECT DIRECTOR	:	Muhammad Ahmad
PROJECT CO-ORDINATOR	:	Jawad Tahir
AUTHOR	:	Iqra Rasheed
CO-AUTHER	:	Tooba Islam
DESIGNER	:	Atta ul Mustafa Ali
GRAPHICS	:	Wizz Arts
PRINTED BY	:	Wizz Printer

Copyright © Wizz Publishers

All rights reserved with Wizz Publishers. No part of this pubication may be reproduced, including interior design, cover design and icons, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior written permssion of the copyright holder.

WIZZ PUBLISHERS

A product of AJ Stationers.

Wizz Publishers Sample

Wizz World of SCIENCE GRADE 3

CONTENTS



Unit 1
Health and Cleanliness 3

Unit 2
Habitats 18





Unit 3
Changes in Living Things 30

Unit 4
Matter and Materials 41



Unit 5
Energy and its Forms 50



Unit 6
Electricity 63

Unit 7
Environment 73





Unit 8
The Solar System 84

Publishers E-Sample

UNIT 1

Health and Cleanliness

Students' Learning Outcomes

All students will be able to:

- Recognize that healthy living requires eating a balanced diet, keeping clean, sleeping well, exercising regularly, drinking clean water and brushing teeth.
- Identify certain food groups as fruits, vegetables, grains, dairy product, eggs, meat and dry fruits and their relative proportions.
- Recognize that certain diseases are infections and vaccinations can help prevent such diseases.
- Describe how good hygiene and healthy habits can control the spread of diseases.
- Recognize people who use science in their local area, e.g., everyday use of science, restaurant chefs, dietitians, food manufacturers and dairy farmers.



Circle pictures that show healthy habits.



Healthy Habits

Healthy habits are small actions that we do everyday to take care for our bodies habits helps us live a healthy life. In short, eating habits are the building blocks of good health.

By following below given healthy habits we can stay healthy:



Eating a balanced diet with fruits, vegetables, meat, milk and cereals.



Staying clean by washing hands, bathing and wearing clean clothes.



Getting enough sleep to rest and grow.



Exercise daily to keep the body strong.



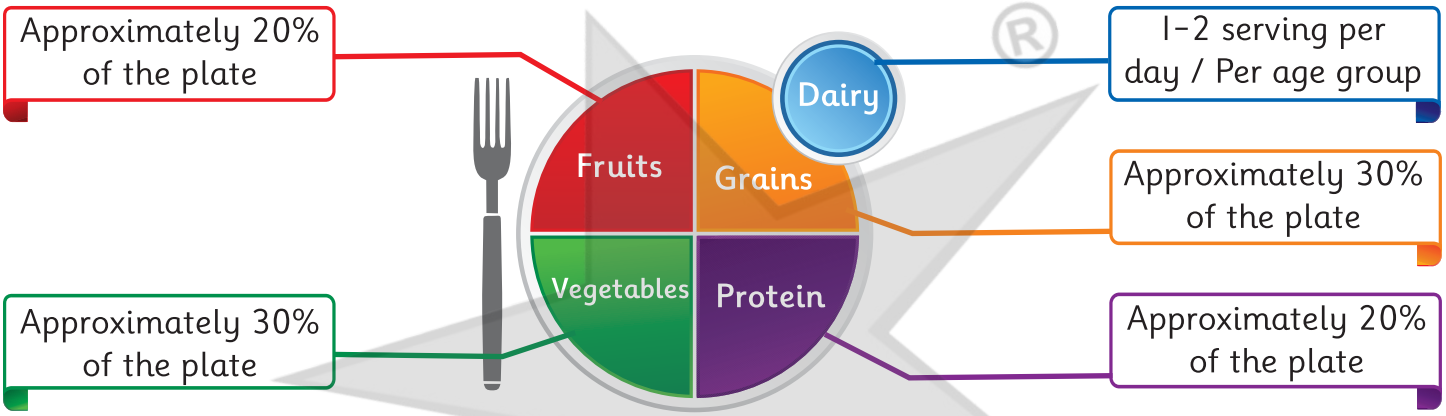
Brush teeth to maintain the oral hygiene.



Drinking clean water to stay hydrated.

Food Groups

Following image show the visual representation of food group proportion:



Visual Representation of Food Group Proportions

Foods are categorized into specific groups based on the nutrients they provide. Nutrients give us energy to grow and perform various function in the body. Understanding food groups and their recommended proportions help us make healthy food choices in our daily life. Let's explore the five main food groups:

a. Carbohydrates (Grains, lentils)

This group provides us with carbohydrates, the body's main source of energy. The food from this group contains fibre, which helps in digestion. Examples: Bread, rice and cereals, etc.



Bread



Rice



Cereals

b. Proteins

Food from meat group provides us with proteins. Proteins help repair and build body tissues and muscles. Examples: Meat, fish, beans and eggs, etc.



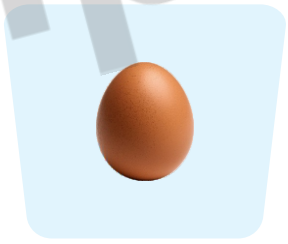
Meat



Fish



Beans



Egg

Publishers Sample

c. Fruits and Vegetables

Fruits and vegetables provide essential vitamins and minerals that help fight against diseases and keep our bodies functioning properly.



Fruits



Vegetables



Yogurt



Milk



Butter



Cheese

d. Dairy

Dairy foods are rich in minerals like calcium, phosphorus, magnesium and vitamins, which supports healthy bones and teeth. Examples: Milk, butter, cheese and yogurt, etc.

d. Fats

They provide energy and helps in keeping body temperature warm. However, consuming too much fat can be harmful. Fats are divided into good fats and bad fats.

Good Fats



Walnuts



Flaxseeds



Nuts

Bad Fats



Sweets



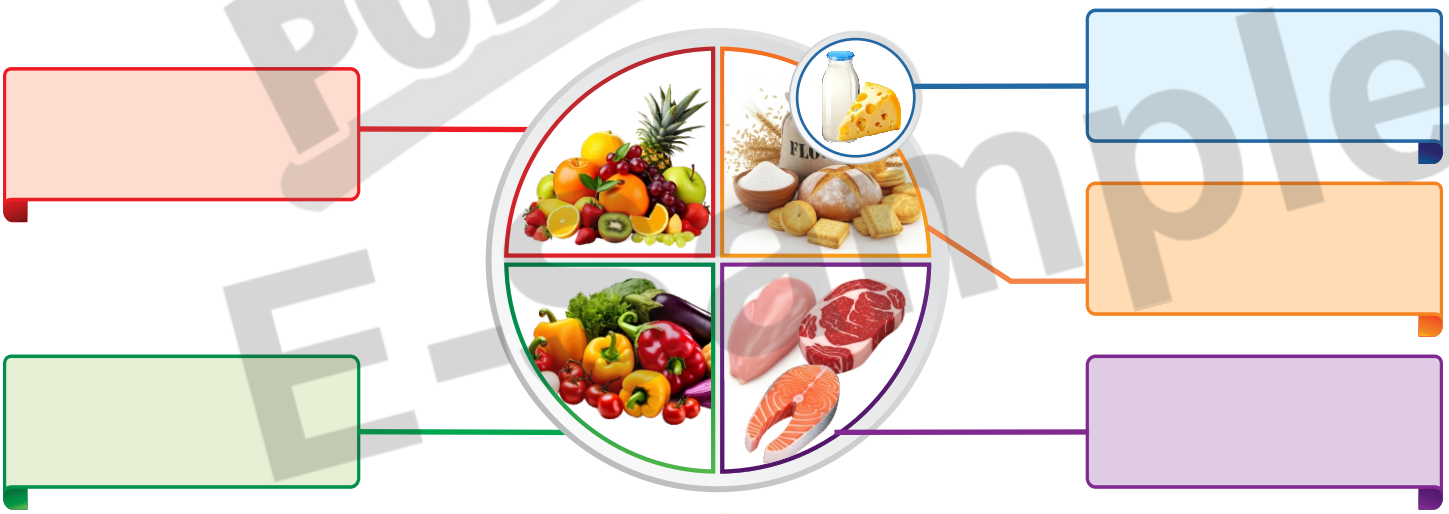
Fizzy drink



Oily items

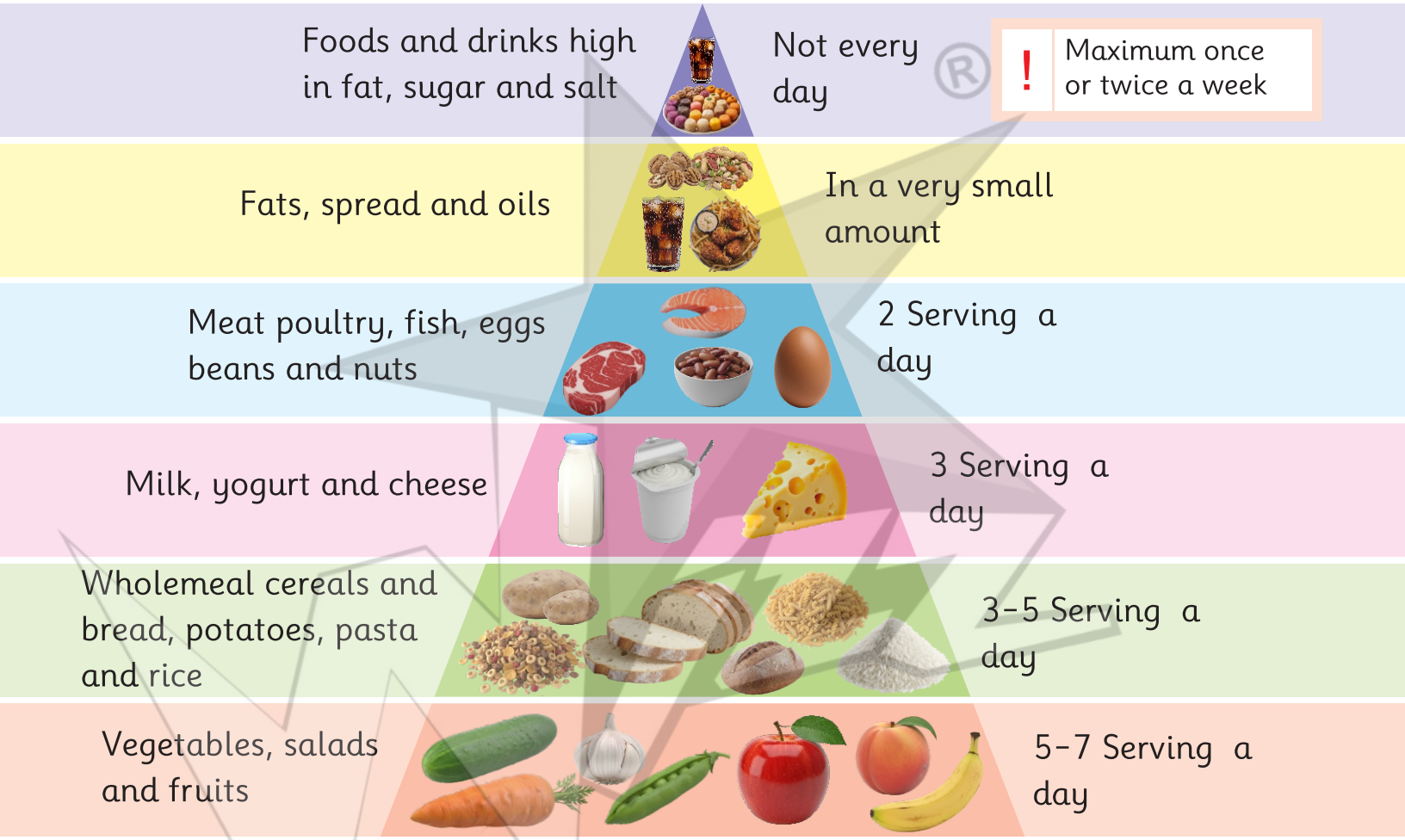
Look at the image given and name the food items shown on the plate.

The plate given below shows a combination of different food items.



Publishers Example

Healthy food for life



The food Pyramid



Drink at least 8 cups of water a day.

Note Serving varies as per age bracket.

Water is important for life. Our body consists of 70% water. All the systems in the body need water to function properly. How much water should you drink in a day?



Food pyramid shows that some foods should be eaten more, whereas some should be eaten less. It shows that the largest part of the pyramid contains fruit and vegetable servings. It means we should eat more from this group and eat less from the group at the top of the pyramid.

Publishers E-Sample

What will happen if we eat a lot of sugary and junk food?



When we consume a lot of sugary and junk food, we become overweight which in return causes heart problems, high blood pressure and other problems too.

If we want to keep ourselves healthy and fit, we should also keep check on our cleanliness, proper sleep, and exercise along with our diet.

Following are few practices which show how can we keep ourselves healthy and fit.



Jogging



Exercise

Infections

An infection occurs when tiny organisms called germs enter the body and begin to multiply, as a result they cause infections.

When germs enters the body, our body's defense system (immune system), fights back showing the following symptoms:



Fever



Coughing



Sneezing



Rashes



Fatigueness

Publishers
Example

Following are few examples of common infectious diseases:


Common cold


Flu (Influenza)


Chickenpox


Stomach Flu

We can protect our selves by using the vaccine. Vaccines are special medicines that help the body build protection against diseases.

How does a vaccine work?

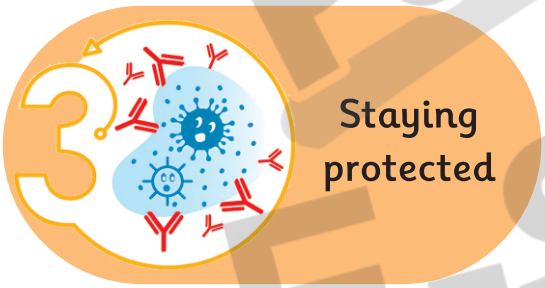
Vaccines teach our immune system to recognize and fight specific germs.



Vaccines introduce a small, harmless part of a germ to our immune system.

The immune system learns to recognize the germ and prepares to fight it in the future.





If the real germ enters later, the immune system quickly fights it off to keep us healthy.

Immune system is the body's superhero team, always on the job to protect us from germs that can make us sick.

Publishers E.Sample

Healthy habits to prevent disease spread

Maintaining good hygiene and adopting healthy habits are essential in preventing the spread of infectious diseases. Following are the healthy practices that can help to control the spread of diseases:



Wash hands frequently



Eat vegetables and fruits washed properly



Dispose off tissues properly



Cover your mouth and nose when coughing or sneezing



Keep nails trimmed and clean



Get vaccinated



Maintain a balanced diet



Stay physically active



Get adequate sleep



Bath regularly and wear clean clothes

Publishers
Sample

Science in everyday Professions

Science plays an important role in many professions. Few of them are given below:

Restaurant Chef

They use scientific knowledge to improve cooking techniques and create delicious dishes.



Dietitian

They help people eat healthy food by using scientific knowledge about nutrition.



Food Manufacturer

They apply science to ensure food safety and quality.



Dairy Farmer

They use technology and science to improve for better production and animals care.



Publishers

Check Point

1 Choose and write the correct option.

i. These are the substances that provide energy for growth and perform functions:

a. Nutrients
b. Chemicals
c. Vitamins
d. Minerals

ii. It helps in food digestion:

a. Proteins
b. Carbohydrates
c. Fats
d. Water

iii. It helps to build muscles:

a. Proteins
b. Carbohydrates
c. Vitamins
d. Fats

iv. Fruits and vegetables help our body to fight against:

a. Diseases
b. Enemies
c. Germs
d. Infections

v. It helps in keeping the body temperature warm:

a. Fats
b. Dairy
c. Carbohydrates
d. Water

vi. It is the special medicine that helps our bodies fight diseases:

a. Vaccination
b. Infection
c. Antibiotics
d. Syrup

vii. Vaccines work in _____ steps.

a. four
b. three
c. two
d. five

Publishers E-Sample

viii. They use scientific knowledge to improve their cooking techniques and create new dishes:

a. Proteins
b. Carbohydrates
c. Vitamins
d. Fats

2 Fill in the blank.

i. All living things need _____ to stay alive.

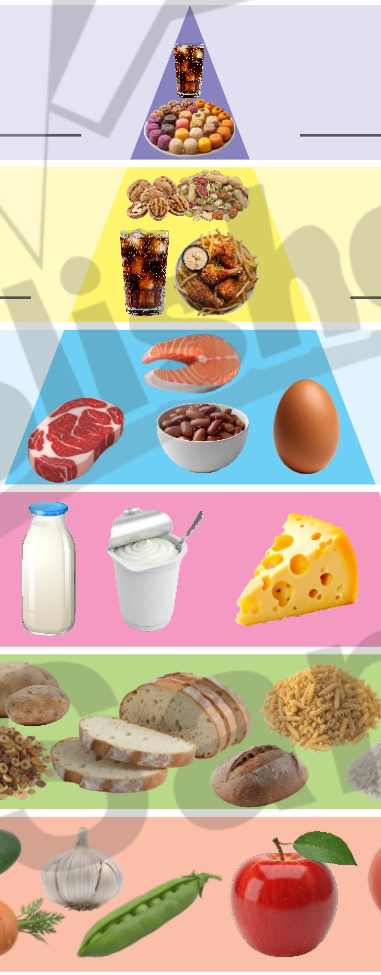
ii. _____ use modern technology for better animal care and milk production.

iii. With healthy living you can feel strong and _____

iv. _____ kill germs that can hurt us.

v. Infections are _____ and spread person to person.

3 Can you name different food groups?



_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Publishers Example

4 Draw a line to match each type of substance to its role in the body.

Substance	Role in the Body
Carbohydrates	They give us energy and maintain body temperature.
Proteins	They are the main source for repairing body tissues.
Fruits and Vegetables	They are the main source of energy for our body and helps in digestion.
Water	They help our body to fight against diseases, and save us from falling sick.
Fats	It makes 70 % of our body and helps our body to function properly.

5 Answer the following questions.

i. List five important ways to stay healthy.

ii. Define food groups.

Publishers E-Sample

iii. List three food examples for each:

Carbohydrates _____, _____, _____,

Proteins _____, _____, _____,

Fruits _____, _____, _____,

Vegetables _____, _____, _____,

Dairy _____, _____, _____,

Fats _____, _____, _____,

iv. Define infection and list three examples of infectious diseases.

_____

_____

_____

v. What is the function of a vaccine?

_____

_____

vi. Why are fats important for our health?

_____

_____

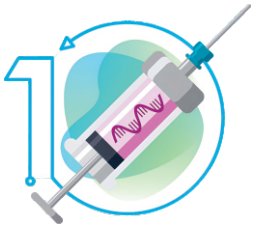
vii. Which food is an excellent source of protein?

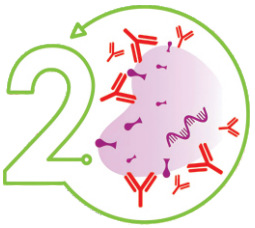
_____

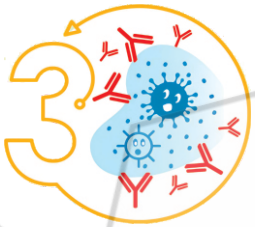
_____

Publishers E-Sample

6 Write in detail how vaccines work.









Activity

Plan a menu for one day (breakfast, lunch, dinner). Do not forget to include healthy food.

Breakfast	Lunch	Dinner

7 Answer these questions: (On note book)

i. List a few steps to stay clean and healthy?
ii. How does science help us keep our food safe and healthy?
iii. What is the importance of grains and pulses in our diet?
iv. Why exercise is important.

Publishers E-Sample

Let's Do It

Germ Detective

What we need:



- Bowl of water
- Pinch of pepper
- Dish soap

What to do:

- Ask student to work in groups and sprinkle pepper on water, it represents germs.
- Dip a finger into dish soap.
- Touch the water's surface with the soapy finger.
- Watch the pepper (germs) move away from the soap.

Question:

What does this activity show?

_____

Exploring Science in Profession

Scenario 1

- Aleena checks temperature and time to cook dishes perfectly.
- Who is Aleena?_____(Restaurant Chef/Dietitian)

Scenario 2

- Junaid creates meal plan that based on food nutrition.
- Who is Junaid?_____(Dairy Farmer/Dietitian)

Scenario 3

- Tania preserves food safely for long term use.
- Who is Tania?_____(Dairy Farmer/Food Manufacturer)

Publishers E-Sample

UNIT 3

Changes in Living Things

Students' Learning Outcomes

All students will be able to:

- Compare different stages of the lifespan of plants and animals (using pictures, observations or videos).
- Identify changes in the lifecycle of an animal and a plant.



Wizz Publishers ® E-Sample

All living things go through changes as they grow. These changes are part of a process called a life cycle. A life cycle is the series of stages a living thing goes through from birth to death. Whether it is a tiny seed growing into a tall tree, a caterpillar turning into a butterfly, or a baby growing into an adult, every living thing follows a unique path of growth and change.

Understanding life cycle is important because it helps us learn how living things grow and change.

Life Cycle of a Flowering Plant

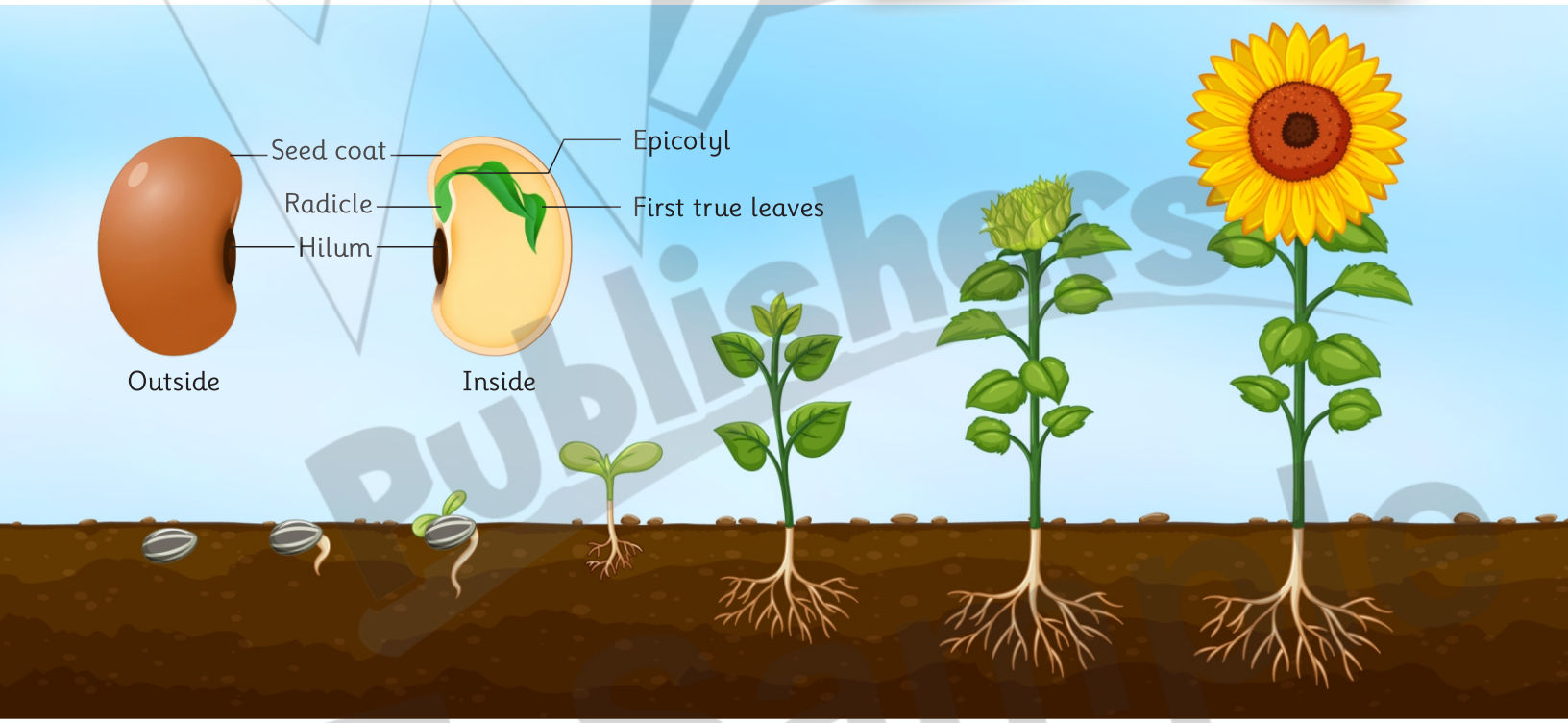
Have you ever noticed that most plants start their life as a seed?

Most plant begin life as seeds. A seed has a tiny baby plant inside. When it gets sunlight, air, water and nutrients, it germinates and grow into a seedling. The whole process, where a seed grows into a new plant, is called germination.

SciByte

Flower is the reproductive part of a flowering plant.





Teacher's Note:

Explain students that all living things have a life cycle. They possess the ability to reproduce and the life cycle continues.

Publishers E-Sample

1. The life cycle starts with a seed. The seed contains a tiny baby plant inside. When seed gets the right amount of water, sunlight, air and nutrients, it starts to germinate.

2. A small root grows down into the soil and a shoot grows upward.

3. The young plant called a seedling, grows leaves and becomes stronger.



4. The seedling grows into an adult plant with more leaves, stems and roots. It is now ready to make flowers.

5. The adult plant produces flowers. Flowers are important for making seeds.

6. Flower produces fruits.

7. Fruits produces seeds. Seeds starts a new life cycle again.



Activity

Circle the things you think a plant needs to grow:


Umbrella


Rain



Fertilizer


Extra seeds


Sleep


Sunlight


Soil


Fresh air

Explain what happens to plants as they grow. How do they use the things you have encircled?

Publisher's E-Sample

Life Cycle of Animals

Like plants, animals also have life cycles. Animals start life in two main ways:

a. From Eggs

Some animals lay eggs. The baby develops inside the egg hatches and then grows into an adult. These babies often look different from their parents at birth.
Examples: Hen, frog, fish and butterfly, etc.


Hen


Butterfly


Frog

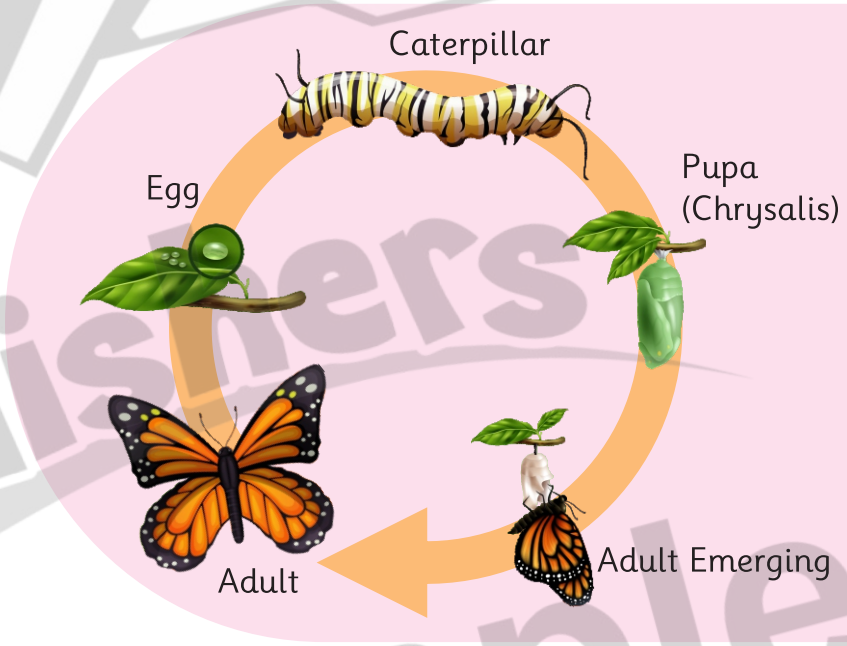

Fish

Life Cycle of a Butterfly (Four staged life cycle)

A butterfly goes through four main stages in its life cycle: It lay eggs and the baby changes a lot before becoming an adult.

a. Egg

The butterfly starts its life as an egg. The mother butterfly lay eggs on the underside of leaves.



b. Larva (Caterpillar)

When the egg hatches, a caterpillar comes out. This stage is called the larva. The caterpillar eats lot of leaves, grows fast and sheds skin many times.

c. Pupa (Chrysalis)

When the caterpillar is fully grown, it forms a hard shell around itself called a chrysalis or pupa. Inside the pupa, it changes into a butterfly.

d. Adult butterfly

The chrysalis breaks open and an adult comes out. It dries its wings and flies away to start the life cycle again by laying eggs.

Publishers E-Sample

Life Cycle of a Grasshopper (Three staged life cycle)

The life cycle of a grasshopper has three stages:



Eggs Nymph Adult

a. Egg

Female grasshopper lay eggs in the soil, usually in pods containing many eggs.

b. Nymph

The egg hatches into nymph, which look like small, wingless adult. It keep on growing by shedding its skin many times. With each molt, it look more like an adult grasshopper.

c. Adult

After final molt the grasshopper has fully developed wings. It can now fly, reproduce and begin a new life cycle.

b. From Direct Birth

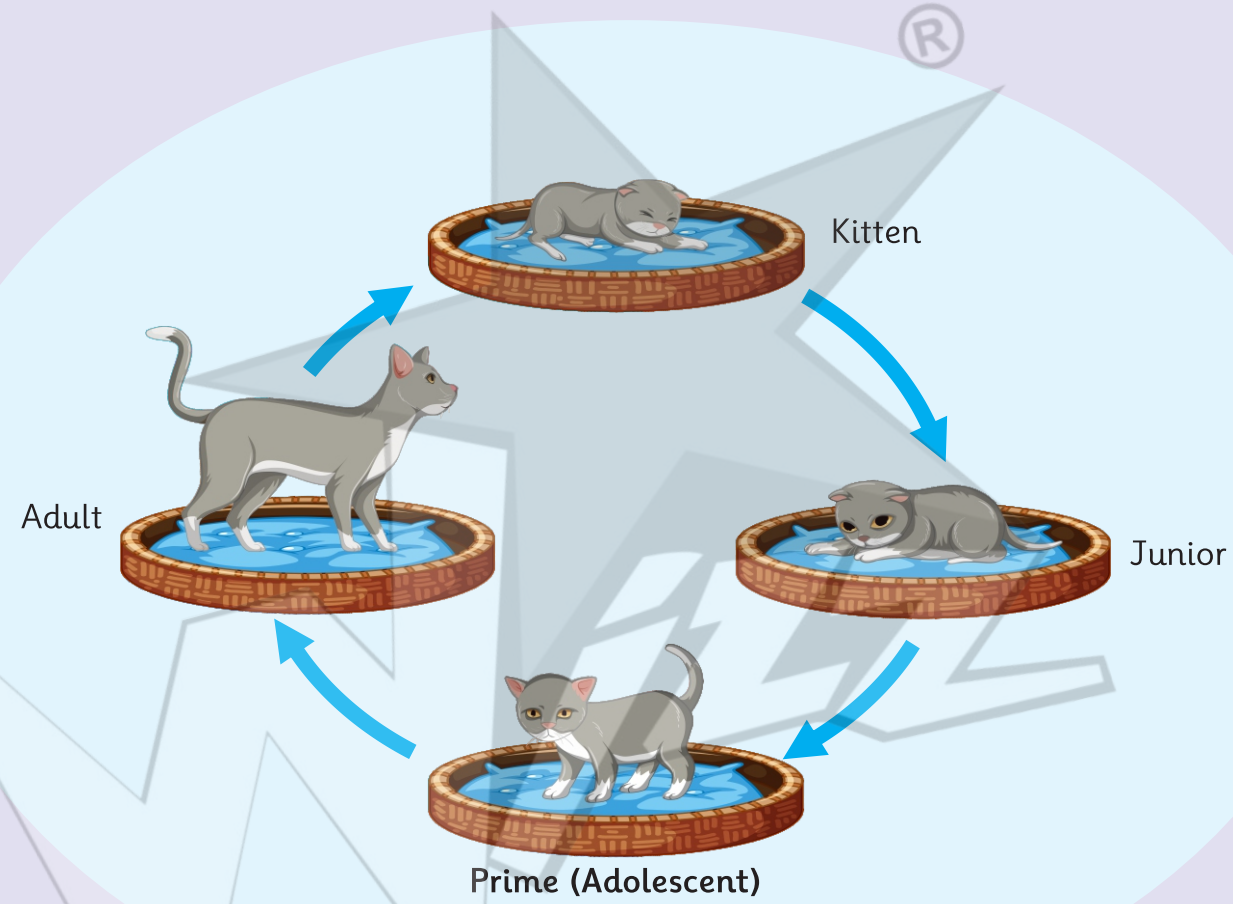
Some animals give birth to young ones that look like their parents. Examples: Humans, cats, lions, etc.



Humans Cats Lions

Publishers Sample

Life Cycle of a Cat



a. **Kitten (Baby cat)**

Kitten is born small and needed its mother's care. If grows strong by feeding on its mother's milk.

b. **Prime (Adolescent)**

After a few months a kitten start eating solid food, playing and learning to hunt. By around 6 months, it starts looking like an adult cat.

c. **Adult cat**

At about 1 year old, a cat is considered an adult. Adult cats can have kittens and live independently.

Publishers
E-Sample

Check Point

1 Choose and write the correct option.

i. A series of changes from birth to death is called:

a. Life cycle
b. Cell cycle
c. Life line
d. Food cycle

ii. The process through which a seed develops into a new plant is called:

a. Germination
b. Reproduction
c. Respiration
d. Breathing

iii. Which of the following is the reproductive part of a flowering plant?

a. Fruit
b. Roots
c. Leaf
d. Stems

iv. The young plant is called:

a. Node
b. Root
c. Bud
d. Seedling

v. When a butterfly egg hatches, the stage is called:

a. Larva
b. Pupa
c. Nymph
d. Moth

vi. The hard shell of a caterpillar is called:

a. Larva
b. Chrysalis
c. Nymph
d. Moth

vii. Which animal has three stages in its life cycle?

a. Butterfly
b. Grasshopper
c. Beetle
d. Mosquito

Publishers E-Sample

2 Read each statement and number it in correct order.

i. The life cycle starts with a seed. The seed contains a tiny baby plant inside. When seed gets the right amount of water, sunlight, air, and nutrients, it starts to germinate. ( )

ii. The seedling grows into an adult plant with more leaves, stems, and roots. It is now ready to make flowers. ( )

iii. Seeds inside fruits starts a new cycle again. ( )

iv. The young plant, called a seedling, grows leaves and becomes stronger. ( )

v. The adult plant produces flowers. Flowers are important for making seeds. ( )

vi. A small root grows down into the soil, and a shoot grows upward. ( )

vii. Flower develops into fruits. ( )

3 Draw a line to match each word and picture.

Words	Pictures
Butterfly	
Chrysalis	
Caterpillar	
Egg	

Publishers ® E-Sample

4 Sort the following animals into correct column.



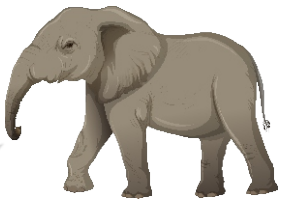
Fish



Butterfly



Frog



Elephant



Duck



Rabbit



Tiger



Goat

Animals that hatch from eggs	Animals that born directly

5 Answers the following questions.

i. Write down the stages of the life cycle of the following:



Butterfly	Grasshopper 

Publishers E-Sample

ii. Define life cycle. Why is it important?

iii. What is germination?

iv. Search and write why do butterflies lay their eggs on leaves?

6 Answer these questions: (On note book)

i. Define life cycle.
ii. Explain life cycle of plants.
iii. In how many days the chick comes out from the egg?
iv. How do the tadpoles breathe?

Publishers E-Sample

Let's Do It

Life cycle hunt

Every living thing goes through a life cycle, from birth or germination to adulthood. Today, you will explore nature to find and record different life cycle stages of plants and animals.
Look carefully and document what you find.

What we need:



- Notebooks
- Pencils and clipboards
- Magnifying glass

What to do:

- Take students outdoors to a schoolyard, garden or park.
- Ask them to search for evidence of life cycle stages, such as:
  - ✓ Plants: seeds, seedlings, growing plants, flowering plants.
  - ✓ Insects: eggs, larvae, pupae, adult insects.
  - ✓ Birds/Other Animals: nests, eggs, young animals.
- Students document their findings by taking photos or sketching what they see.
- Encourage them to classify their observations by identifying which stage of the life cycle they belong to.
- Back in the classroom, discuss their findings and compare different life cycles.



UNIT 5

Energy and its Forms

Students' Learning Outcomes

All students will be able to:

- Recognize that energy is required to do work.
- Identify natural sources of energy (sun, flowing water, wind, wood, coal, oil and gas).
- Inquire that sources of energy are used for many things (move an object, heating, lighting, transportation, electric appliances, etc.).
- Demonstrate that energy is present in all matter and in forms like sound, light and heat.



What do we need to work?

To do any kind of work, we need energy. Energy makes everything move and work. It gives us the strength to life objects, run, jump and much more.



A man pushing a cart



A man lifting a box



Children running and jumping

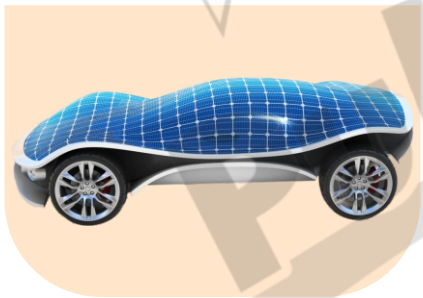
Energy and work go hand in hand. This means that without energy, no work can be done. Let's explore where energy comes from.

Sources of Energy

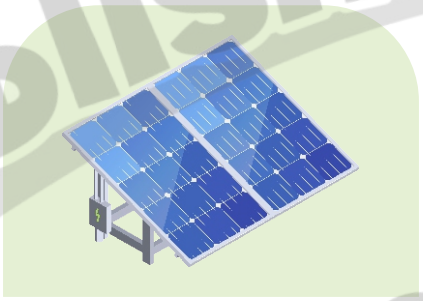
Sources of energy are places or things from which energy is obtained. Common sources include:

a. Solar energy

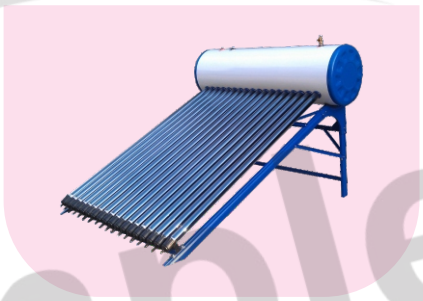
Solar energy comes from the sun. The sun gives us both light and heat. Without it, life on Earth would not be possible. Plants use sunlight to make food, whereas animals and humans get energy by eating plants. Solar energy also powers cars, heaters and solar panels that make electricity.



A solar car



A solar panel

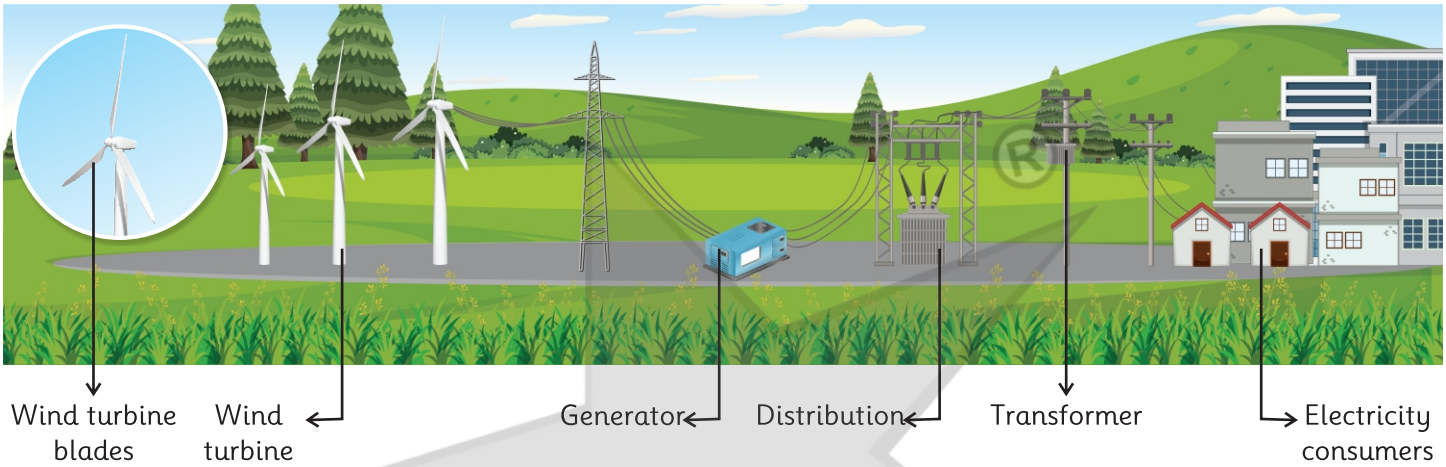


A solar heater

b. Wind energy

Wind energy comes from moving air, which we call wind. When the wind blows, it has power. Wind turbines use that power to spin their blades to generate electricity. Wind turbines are tall machines with large blades. As the blades spin, the movement is converted into electrical energy.

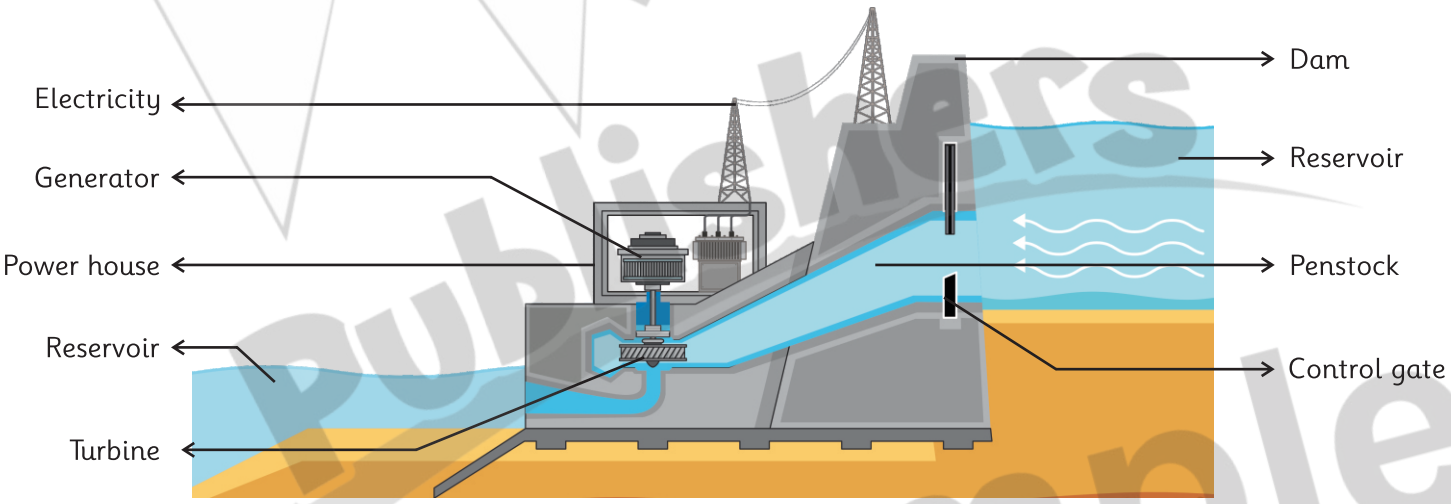
Publishers
E-Sample



c. Water energy (Hydro energy)

It is the energy that comes from moving water in rivers, waterfalls, or dams. This is also known as hydro energy.

Dams are built near moving water and store large amount in a reservoirs. A dam is a big wall that holds a lot of water in one place (a reservoir). When the water is let out, it flows down very fast and falls on the turbines with the force. As a result of force the turbine start to move to generate electricity. This kind of power is called hydroelectric power.

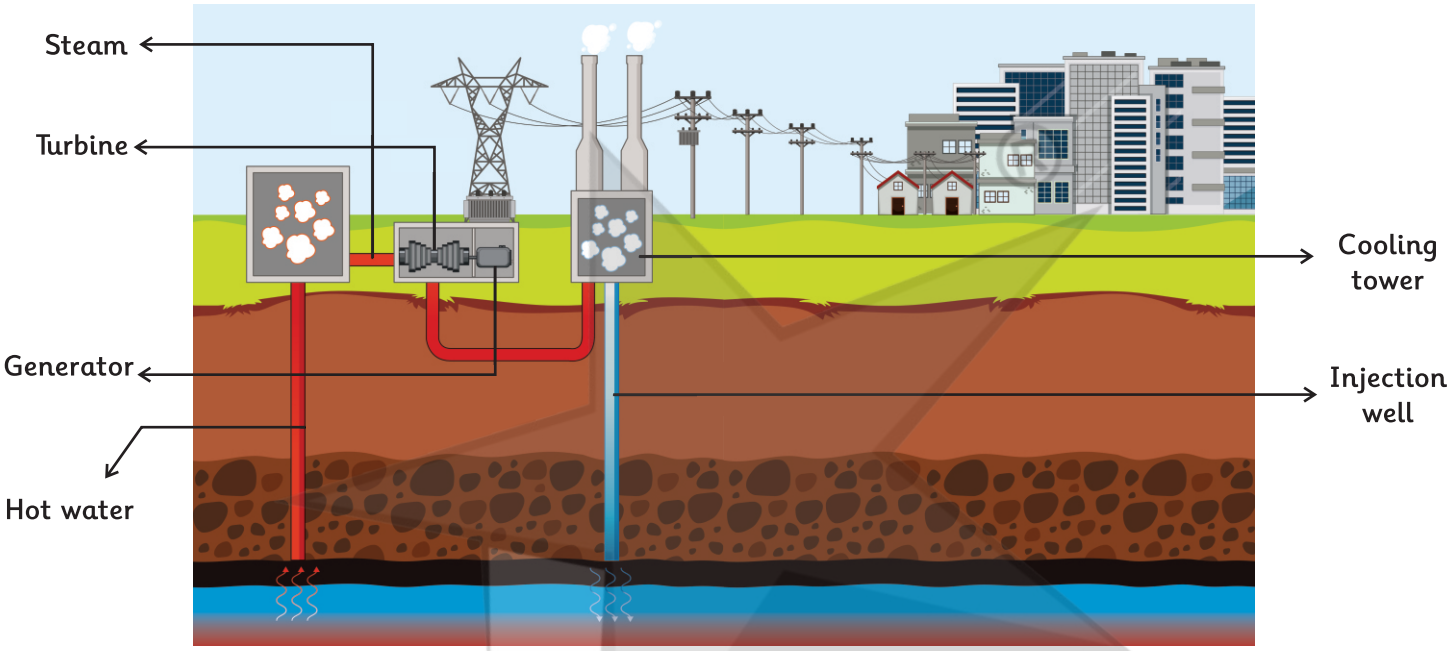


A dam with water flowing onto turbines to produce electricity.

d. Geothermal energy

Geothermal energy is the heat energy that comes from inside the Earth. "Geo" means Earth and "Thermal" means heat. This heat comes from deep underground. It is used in geothermal power plants to make electricity and in some places to warm.

Publishers
E-Sample



A geothermal power plant with steam rising.

e. Chemical energy

Chemical energy is stored in food, fuel and batteries. When these things undergo change or reaction (like burning or digestion), the stored energy is released and converted into other forms of energy.



Batteries give energy to toys, flashlights and remote controls.



Fuels like wood, coal, oil and gas gives heat and power.



Food gives energy to people and animals.

Uses of Energy

Energy appears in many forms and each helps us perform different types of work in daily life. Let's explore some in daily life:



Heat energy makes things warm. We use it to cook food and boil water.

Publisher E-Sample

- Light energy helps us see things. We get light from the sun, bulbs, lamps and flashlights.



- Plants also use sunlight to grow.



- Sound energy is produced by vibrations.



A bell ringing to produce sound.

- Electrical energy powers appliances like TVs, refrigerators, computers and fans.









- Mechanical energy is the energy of movement. When you ride a bike, you are using mechanical energy.



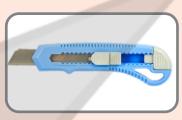
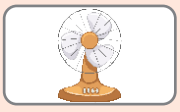
- Solar energy comes from the sun. Solar panels can change sunlight into electricity.



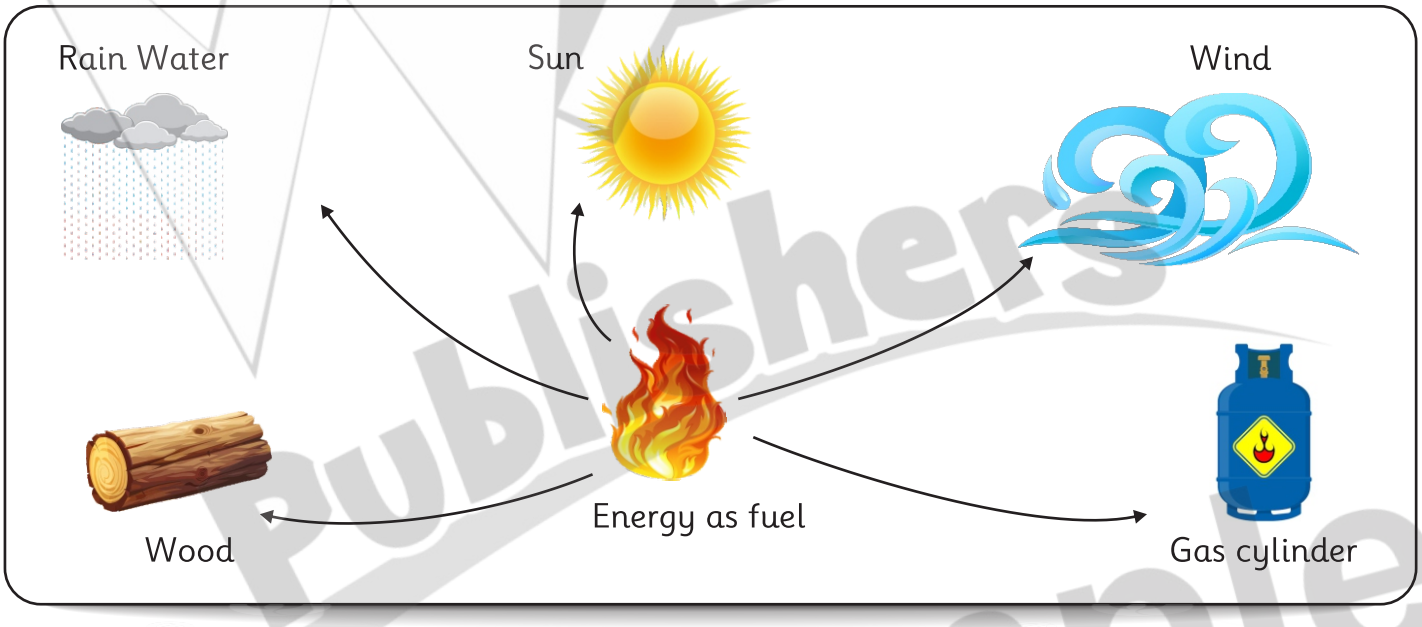
E-Sample

Activity

Where does the energy come from?

Battery	Electricity	Fuel	Sun	Man
				
				
				

Think and answer:



i. We use solar panels to get energy from the _____.

ii. We use hydroelectric power stations to get energy from the _____.

iii. We use wind turbines to get energy from the _____.

iv. We use _____ in fireplaces or campfire to warm our places.

v. We cook food in restaurants to get energy form _____.

Publishers E-Sample

Check Point

1 Choose and write the correct option.

i. Which of these needs energy to happen?

a. A rock sitting still
b. A book on a shelf
c. A fan spinning
d. A closed door

ii. What is the main source of energy for Earth?

a. Water
b. Sun
c. Moon
d. Coal

iii. Which one is a source of energy that comes from moving water?

a. Solar energy
b. Wind energy
c. Hydro energy
d. Gas energy

iv. What do we need to do any kind of work?

a. Water
b. Energy
c. Air
d. Food

v. What source of energy is used to turn windmills?

a. Sun
b. Coal
c. Water
d. Wind

vi. The stored energy inside the Earth is called:

a. Geothermal energy
b. Wind energy
c. Hydro energy
d. Chemical energy

Publishers E-Sample

2 Fill in the blanks.

i. All machines work with _____.

ii. A machine is _____ without ample supply of energy.

iii. The energy produced by Sun is called _____.

iv. _____ energy is the heat energy that comes from Earth.

v. Electrical energy _____ appliances like T.V, fans etc.

3 Match the source given in Column A with its use in Column B.

Column A (Source)	Column B (Use)
Cooking food	Sun
Turning windmills	Wind
Running trains	Coal
Producing electricity	Flowing water

4 Answer the following questions.

i. Write down two uses of wood.

_____

_____

ii. Write downs the names of two renewable sources of energy.

_____

_____

Publishers E-Sample

iii. Which energy is a self generated energy?

iv. What do you know about dam?

v. What is geothermal energy.



Activity

Think and Answer:
From where do we (the human bings) get energy?

5 Answer these questions: (On note book)

i. What is Energy? What happens when three is no energy to do work?
ii. How many types of natural sources of energy? Name them.
iii. What is hydro energy?
iv. How do we use energy in our homes every day?

Publishers
E-Sample

Let's Do It

Study the pictures and complete the table given below. list all the ways that energy is being used. Also write where the energy comes from in each case. One has been done for you.

a



b



c



d



e



	Energy use	Where the energy comes from?
a.	Chemical energy	Fuel
b.		
c.		
d.		
e.		

Publishers E-Sample

6 Find the 8 hidden words related to energy in the puzzle given below. Words may go up, down, sideways or diagonal.





s	u	n	e	l	e	c	t	r	i	c
w	i	n	d	g	a	s	o	i	l	y
a	o	e	n	e	r	g	y	d	f	h
t	o	a	t	u	r	n	l	i	g	h
e	l	c	o	a	l	t	r	a	i	n
r	h	e	a	t	v	e	h	b	z	j
p	b	i	k	e	i	l	f	l	o	w
o	d	r	y	t	l	u	a	p	t	k
w	a	t	e	r	l	t	n	g	s	w
e	l	i	g	h	t	b	r	i	g	h
r	e	a	d	r	a	d	i	o	u	e

Publishers ® E-Sample

7 Who Am I?

I can rush like a river. I can roll like a wave. I am pretty powerful. You build a dam to hold me. I flow down, get out of may way!

_____

I can be a breeze. I can be some kind of strong typhoon. I can dry your clothes if you hang them. I am what you call renewable, happy and free!

_____

I make light bulbs light and TV to turn on. I make air conditioning hum and flashlights turn on.

_____

How do humans receive the Sun's energy trapped in plants?

_____

_____

_____

_____

_____

_____

_____

Publishers E-Sample

Let's Do It

Candle experiment

- Use match box and carefully light the candle.
- Record the energy stored. _____
- Remember to blow out the candle before you move on to the next experiment.





Battery operated torch

- Switch the torch on and off.
- Record the energy stored. _____

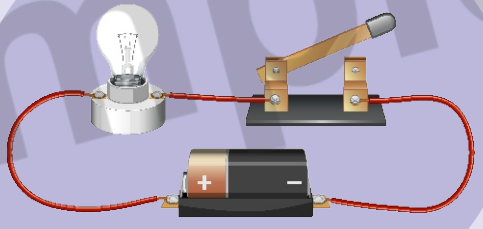
Hair dryer experiment

- Switch the torch on and off.
- Record the energy stored. _____



Simple circuit with a switch experiment

- Use the switch to light up the bulb.
- Record the energy stored. _____
- Remember to switch it off before you do the next experiment.



Publishers
ESample

UNIT 7

Environment

Students' Learning Outcomes

All students will be able to:

- Define the term pollution.
- List different types of pollution (water, air, land and noise).
- Suggest ways to reduce pollution using the 3R's.
- Identify endangered animals of Pakistan (e.g., Indus Dolphin, Markhor, Blackbuck).
- Identify extinct animals.
- Suggest ways to protect endangered animals.
- Predict what could happen if natural resources were completely used up.



Look at the image below. What do you think could be the reason the fish might have died?

The fish may have died because of pollution. Pollution is when harmful things are added to the Earth, that make the air, water and land dirty. Pollution is harmful for people, animals and plants.



Types of Pollution

Pollution can be of different types:

a. Water Pollution

Water pollution happens when harmful substances like garbage, oil, soap or chemicals go into rivers, lakes or oceans.

It is caused by throwing trash into the water, oil spills from ships and dirty water from homes and factories.

Water pollution is harmful because fish and sea animals may get sick or die, people and animals cannot drink the water and plants may stop growing.





b. Air Pollution

Air pollution happens when the air becomes dirty with smoke, dust or harmful gases.

It is caused by smoke from cars, buses, trucks, factories and also by burning garbage or wood.

Air pollution is harmful because it makes hard to breathe, makes humans and animals sick and damages trees and crops.

Publisher Sample

c. Land Pollution



Land pollution happens when people throw garbage, plastic, or waste on the ground.

It is caused by littering in parks, roads, and fields, dumping waste in open areas, and not recycling or reusing materials.

Land pollution is harmful because it makes the Earth dirty and can hurt animals if they eat trash.

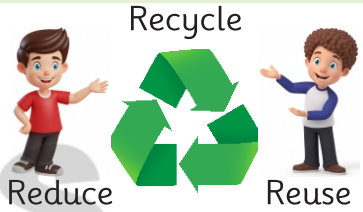


d. Noise Pollution

Noise pollution is caused by too much loud sound.

It is caused by loud music, honking cars, heavy traffic, machines and construction work. Noise pollution is harmful because it can damage hearing, scare animals and make it hard to sleep or concentrate.

What is meant by 3Rs?



The 3Rs stand for: Reduce, Reuse, and Recycle. They are smart ways to take care of our Earth and reduce pollution.

3R	Reduce (Use less)	Reuse (Use again)	Recycle (Make something new)
Meaning	To reduce waste	Use items more than once	Turn old things into something new
How?	• Turn off lights, fans when not in use. • Don't waste water. • Bring your own water bottle • Use cloth bags instead of plastic.	• Use old jars for storage. • Use both sides of paper. • Make rags from old clothes. • Donate old toys/ books.	• Put waste in the right bin. • Clean items before recycling. • Sort paper, Plastic and metal. • Reuse first, then recycle.

Publisher ESample

Images			
			 Plastic Paper Metal and glass

What is a species

A specie is a group of animals or plants that are the same kind and share common traits/ features.



All dogs are the same species.



All cats belong to another species.

Endangered Animals

Endangered animals are animals that are at risk of disappearing forever. There are only a few left and they need our help. Examples of endangered animals in Pakistan are:



Indus River Dolphin



Markhor



Blackbuck



Himalayan Brown Bear



Peregrine Falcon

Publishers Sample

Extinct Animals

Extinct animals are animals that are no longer exist anywhere in the world. There are none left alive. Examples of extinct animals are:



Dinosaurs



Dodo



Caspian Tiger

Why animals go extinct?

- **Over hunting:** When people hunt animals too much, their numbers go down very quickly.

- **Habitat destruction:** Forests and building roads destroy animal's home.





- **Pollution and climate change:** These make it harder for animals to survive. If these problems continue and no animals of that kind are left, the species becomes extinct, meaning it is gone forever.



Esample

Protecting endangered animals

We can protect endangered animals by:

- Keeping the Earth clean.
- Protecting natural habitats.
- Not hunting or harming animals.
- Being kind to all creatures.

Natural Resources

Natural resources are the things we get from nature to us live, grow and stay healthy. They come from the Earth, sun, air and water.



Water



Trees



Air



Soil



Sunlight



Fossil fuels (coal, gas, oil)

If all the natural resources were gone, life on the Earth would be very hard.

- Without water, people, animals, and plants would not be able to survive.
- If there were no trees or plants, we would not have fresh air to breathe and many animals would lose their homes.
- Without soil, we could not grow fruits, vegetables, or grains, so we would not have enough food.
- If we used up all the oil, gas, and coal, we would not have fuel for cars, buses, or electricity for our homes and schools.

Everything we use in our daily lives comes from nature, so we must take care of our natural resources and use them wisely. If we don't, the Earth could become a place where it is very hard to live.

Publisher's Sample

Check Point

1 Choose and write the correct option.

i. What is pollution?

a. Cleaning the Earth
b. Making the Earth dirty
c. Planting trees
d. Drinking clean water

ii. Which is an endangered animal of Pakistan?

a. Elephant
b. Markhor
c. Zebra
d. Giraffe

iii. Which type of pollution makes rivers dirty?

a. Noise
b. Air
c. Land
d. Water

iv. What happens if we use all the natural resources?

a. More air
b. No problems
c. Life becomes difficult
d. Animals will be happy

v. What is one way to reduce pollution?

a. Throw garbage on the road
b. Reuse old things
c. Cut trees
d. Burn plastic

2 Fill in the blanks.

i. The new inventions also have a _____ impact on our environment.

ii. Anything that is making the environment dirty and unhealthy is called _____.

Publishers E-Sample

iii. Unplanned usage will result in shortage of _____.

iv. We should adopt, reduce, reuse and _____.

v. _____ means no more available.

3 Mark X for endangered animals and Y for extinct animals.











4 Match the column.

Item		Source
Gold Watch	○	○ Sheep
Bread	○	○ Tree
Wool	○	○ Gold
Wooden Chair	○	○ Wheat
Butter	○	○ Cow

5 Identify the recycling bins, for which kind of garbage they are used for?





Green _____ Yellow _____ Orange _____

Publishers E-sample

6 Match the pollution to its type.









- Water Pollution
- Land Pollution
- Noise Pollution
- Air Pollution

7 Answer the following questions.

i. Define pollution.

ii. What is meant by natural resource?

iii. List the four types of pollution.

Wizz Publishers E-Sample

iv. What is the difference between extinct and endangered?

v. What are the 3R's? How do they help the environment?

vi. What would happen if we used up all natural resources? Write a short paragraph.

vii. Write two facts about dodo bird.



Publishers
E-Sample

Let's Do It

Use of 3Rs

No-Sew T-shirt Bag

What we need:

- Old t-shirt
- scissors
- Yarn/string (to decorate, if desired)



What to do:

- Cut sleeves off of t-shirt.
- Cut neck out of t-shirt.
- Cut slits at bottom of t-shirt
- and tie knots.
- Tie yarn, string or ribbon on
- handles to decorate.



Reuse Pencil Holder

What we need:

Steel can or glass jar, magazine pictures, glue, paint brush, scissors



What to do:

- Choose pictures from old magazines or calendars.
- Cut out pictures.
- Use paint brush to apply glue to cut-out pictures.
- Glue pictures onto can or jar to decorate.



Publishers E-Sample