

Performance and reviews

Science

Primary Four









First Term

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Introduction

The Ministry of Education and Technical Education recognizes the importance of empowering teachers with effective tools that elevate classroom performance, enhance the quality of education, and improve its outcomes. This is a real response to the voices of teachers, interacting with the feedback channels from the educational field, and meeting the needs of teachers for flexible and comprehensive educational tools that assist them in fulfilling their noble educational mission. This book has been designed to serve as an integrated educational support for teachers, helping them in planning and executing their teaching tasks efficiently. It also facilitates continuous assessment processes. The content has been designed to offer diverse models of effective classroom performance and educational activities created based on an interactive methodology that enhances active learning. It contributes to a qualitative shift in teaching practices, clearly focusing on the student as the core of the educational process. The book includes formative and diagnostic questions, as well as purposeful learning tasks that students can complete as homework, enhancing the integration of learning inside and outside the classroom and contributing to the sustainable construction of learning for students. These tools help develop critical and creative thinking, deepen understanding, and support and enhance student motivation, giving them a sense of achievement and excellence. It also includes short weekly tests and periodic assessments, allowing teachers to measure the extent of learning outcomes and address learning gaps early, providing feedback on the initial results. The performances at the end of each month are concluded with immediate training sessions that help improve student performance. These assessments are gradual, taking into account individual differences and targeting various levels of cognitive development, within a framework of diversity, depth, and integration, preparing students for monthly tests efficiently. This book is a true translation of the Ministry's directions to ease the burdens on parents, provide supporting educational content that enriches the classroom environment, and allow teachers more time for educational innovation and productive interaction with their students. It also forms an effective tool in supporting the Ministry's direction to enhance learning outcomes, achieving a real transformation in the learning environment—from memorization to understanding, from rote learning to application, and from passive reception to active participation. When we place this work in the hands of teachers and students, we hope it will be a valuable contribution to improving academic performance, enhancing the quality of education, and becoming an additional cornerstone in building a generation that is aware and knowledgeable, equipped with the skills and competencies needed for success in a world that demands creativity and innovation. It aims to have a tangible impact in realizing an ambitious educational vision for the future of education in our beloved country.

Allah is the one sought for help, and He guides to the right path...

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CHAPTER 1: NATURE IN OUR SURROUNDING

1 - 1: LET'S FIND LIVING ORGANISMS **Week: .....**

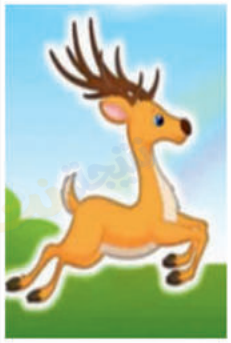
1 - 2 : HOW DO YOU OBSERVE ?

First: Classroom performance:

Discover Living Organisms and Non-Living Things:

Living organisms — such as human, animals, and plants — differ from non-living things, such as rocks, water, and air; they feed, breathe, and grow.

- Observe the following figures then classify them into living organisms or non-living things then write your classification below each figure.

			
.....	.....	.....	.....

According to your previous classification answer for the following:

1. Living organisms are distinguished from non-living things by characteristics such as ..... , ..., and .....

2. ..... and ..... are considered non-living things.

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Learning Journey:

- Observe the following Pictures then choose the correct answer:



Which of the following habitats is suitable for a fish to live in?

a. Seas and rivers
b. Dry deserts
c. Under rocks
d. Inside burrows



What does a tree provide for a bird?

a. A suitable habitat
b. Food
c. Water
d. Air



Why do some animals hide in burrows during hot weather?

a. To get food
b. To proteet themselves from sun's heat
c. To be exposed to direct sunlight
d. To get water



What does a flower provide for a bee?

a. Protection
b. Food
c. Water
d. Asuitable temperature

- Mention two needs that the habitat provides to the living organism. What would happen if we took arabbit to live in hot desert with a camel?

.....

.....

- How do living organisms live in hot and dry places?

.....

.....

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«Little Explorer»

Use the note pad in front of you to examine the following organism:

Organism Name:			
Date:	Class:	Name :	
			
Shape		Color	
Location			
Notes:			

Use the note pad in front of you to examine the following organism:

Organism Name:			
Date:	Class:	Name :	
			
Shape		Color	
Location			
Notes:			

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Second Homework

1. Complete

a. Sand, rocks, and water in the school garden are classified as .....…

b. The place where the organism lives and finds its needs is called ……

2. How do you examine a willow leaf with a magnifying glass?

……

……

……

3. Give Reason: The cat is considered a living organism.

……

……

……

4. What are the main characteristics of places that located under rocks?

……

……

……

5. Explain how a magnifying glass is used to examine a large rock?

……

……

……

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Third: Weekly Assessment **Week (.....)**

Group (A)

1. Complete the following statement: When you preparing an Observation card, you write ……. first.

2. Give Reason: Some living organisms prefer to live near grass and trees?

……

3. Mention an example of a living organism that lives near flower beds.

……

4. Correct the following statement: The pigeon seeks refuge in burrows or under rocks away from sunlight.

……

……

5. What are the characteristics that distinguish living orgamisms from non-living thimgs?

……

……

Group (B)

1. Complete the following statement: Animals and plants are examples of ……..

2. Give Reason: The types of living organisms you find vary depending on the location.

……

……

3. Mention an example of a living organism that lives under rocks or in rocks shadows.

……

……

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4. Correct the statement: You should write your favorite clothes colors, at the beginning of the observation record card,

.....

.....

5. Mention three basic items you should be recorded on a observation record card when observing a living organism?

.....

.....

Group (C)

1. Complete the following statement:

The place where the living organism lives is called .....

2. Give Reason: some living organisms choose to live near grasses?

.....

.....

3. Describe how to use a magnifying glass to examine a Willow leaf.

.....

.....

4. Correct the following statement:

When drawing the organism you observe on the observation recording card, you should use broad, and thick lines.

.....

.....

5. What do you thimk of the following action: Looking directly at Sun with a magnifying glass?

.....

.....

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1 -3 Colors and Shapes of Living Organisms Week: .....

1 - 4 Different Places….. Different Living Organisms

First: Classroom performance: Classify living organisms

Living organisms can be classified into groups by observing their characteristics, such as their colors, shapes, and sizes, and Finding similarities and differences between them.

You have a group of living organisms ; classify the living organisms in different ways:



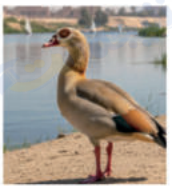
Record your observations in the following table:

By Color	.....
By Shape	.....
By Size	.....

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Learning Journey: Every Living Organism has a habitat that Suits Its Characteristics:

Observe the following pictures of organisms, then mention their suitable habitat (on the Nile river banks , desert) and the features of this habitat.

Living Organism	Its Habitat	characteristics of the Natural Habitat
		
		
		

Second : Homework

1. Complete the following statement: The change in body parts or behavior that helps a living organism survive in its habitat is called.....

2. Explain: Desert plants (such as the Acacia tree) have small-sized leaves.

.....

.....

3. Mention an example for each of the following:

a. An animal that lives in the environment of the Nile River banks.

.....

b. A plant whose habitat is the desert.

.....

c. Birds that need an environment with abundant water and moist soil.

.....

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4. What happens if:

a. The roots of an Acacia tree are short and close to the surface of soil?

.....

b. A living organism is in an environment that doesn't suit its needs?

.....

Third: Weekly Assessment Week (.....)

Group (A)

1. Complete the following statement: The Nile River banks environment is characterized by ..... soil and abundant water.

2. Give Reason: The roots of the Acacia tree grow very deep underground?

.....

3. What is meant by classification?

.....

4. What happens if: A Jerboa is moved to live in a water-abundant environment such as the banks of the Nile?

.....

5. Compare between: The Desert environment and the Nile River banks environment in terms of water abundance:

.....

Group (B)

1. Complete the following statement: Fennec fox and Jerboa are animals that are adapted to live in a ..... environment.

2. Give Reason: Animals and plants possess special characteristics and behaviors called adaptation'?

.....

.....

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3. What is meant by adaptation?

.....

4. What happens if: you plant an orange tree in a dry, water-scarce desert environment?

.....

5. Explain briefly: the steps for classification living organisms?

.....

Group (C)

1. Complete the following statement: A plant that grows in abundant water and moist soil is called ..... plant.

2. Give Reason: Frogs and water fowl cannot live in the dry desert?

.....

.....

3. What adaptations helped Acacia plant to live and survive in the desert environment?

.....

4. Classify the following organisms in two different ways

(Lotus - Acacia - Fennec fox - frog)

- Lotus: .....
- Acacia: .....
- Fennec fox: .....
- Frog: .....

5. Compare between: the Desert environment and the Nile River banks environment in terms of soil dryness:

	Desert environment	The Nile River banks environment
	.....	.....
	.....	.....
	.....	.....

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1 - 5 : DESERT LIVING ORGANISMS Week: .....

First: Classroom performance: "The Right Organism in the Right Place"

In Egyptian deserts, living organisms possess body characteristics and living ways that help them to adapt to harsh environment.

Complete the following table:

Desert Organism	Changes in the living organism	Reason
		
		

Imagine you are an engineer working on designing a «modern desert boot» for explorers in the Egyptian desert.

Inspiration by the adaptations of (the Fennec fox) and (the jerboa) draw two features to apply in the boot design to help the explorer withstand the heat and move easily:

a. First Feature (is inspired by the sole of the Fennec fox's foot)

.....

b. Second Feature (is inspired by the jerboa's hind legs)

.....

Second : Homework

1. Complete: The thick fur on the soles of a Fennec fox's feet helps it to.....
2. Explain: Many desert animals are active at night and rest during the day in cool burrows.

.....

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3. Mention an example of a desert animal rarely drinks water and gets most of its water needs from its food

.....

4. What happens if: The hind legs of a Jerboa were very short?

.....

5. Mention one importance of:

a. The big ears of Fennec fox.

.....

b. Desert living organisms have special body characteristics.

.....

Third: Weekly Assessment Week (.....)

Group (A)

1. Choose the correct answer: from the physical characteristic that helps Jerboa to adapt in desert, the presence of .....

A) Small ears.

B) Long hind legs.

C) Thick foot sole fur.

D) Water storage inside the body.

2. Give Reason: Fennec fox has large ears and fur on the soles of its feet.

.....

3. Mention an example of a smart way or behavior that desert animals use to avoid the intense heat of Sun during the day.

.....

4. What happens if: the Fennec fox's feet lack thick fur on the soles while walking on hot sand?

.....

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5. Compare between: The jerboa and the Fennec fox (in terms of: ear size):

Jerboa	Fennec fox
.....	.....
.....	.....
.....	.....

Group (B)

1. Choose the correct answer:

Desert animals hide during the day in cool underground burrows in order to:

A) Search for food and hunt.

B) Escape extreme solar heat and retain body moisture.

C) Compete with other animals for shelter .

D) Practice very fast jumps.

2. Give Reason: The hind legs of a Jerboa are long.

.....

3. Mention an example of an organism that can live in the desert, depending on the presence of water in its food

.....

4. What happens if: Living organisms in Egyptian deserts didn't possess physical or behavioral characteristics suited to the harsh desert environment.

.....

5. Compare between: Jerboa and Fennec fox (in terms of: their legs' characteristics)

Jerboa	Fennec fox
.....	.....
.....	.....
.....	.....

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Group (C)

1. Choose the correct answer:

Jerboa rarely drinks water but it gets most of needs of water from ……..

A) its food like plants and seeds.

B) rain water which is collected inside burrows.

C) drinking large amount of water once and storing them inside the body.

D) daily migration to oasis and water resources.

2. Give Reason: The Jerboa moves in rapid, successive leaps over hot desert sand.

……

3. Mention an example of a structure that helps the Fennec fox cool its body and get rid of excess heat.

……

4. What happens if: Desert animals searched for food during midday instead of at night?

……

5. Compare between: the ears of the fox that live in the forests and the ears of the Fennec fox: (in term of size)

Forest fox	Fennec fox
…… …… ……	…… …… ……

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CHAPTER TWO: HOW INSECTS GROW?

2 - 1 Eggs and Larvae Week: .....

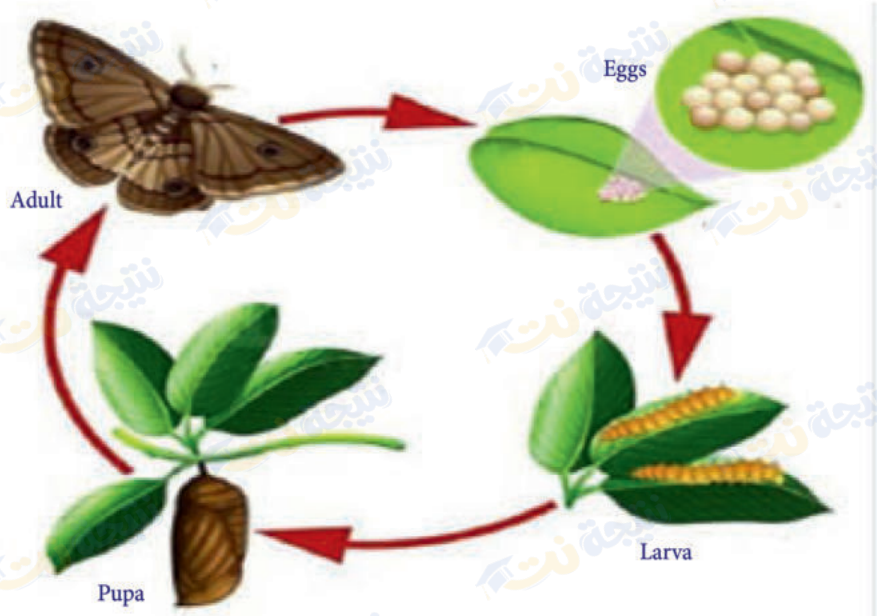
2 – 2 Pupa and Adults

2 - 3 Body structure of Adults

First: Classwork performance (Classify and know)

In front of you a figure represents the butterfly life cycle.

Study it then answer:



Complete :

1. The shape of butterfly changes from an egg to the final stage through .....

2. Answer: «The butterfly undergoes a magical transformation during its growth.»
Provide an evidence for this statement:

.....

.....

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Learning journey (A journey of life)

In front of you, the stages of the butterfly life cycle:

1- Arrange the stages and write the name of each stage beneath its figure:



(.....)



(.....)



(.....)



(.....)

1- Write the name of stage that match with the following descriptions:

a. It is Oval, plump, and smooth shape (.....)

b. It has a head, thorax, and abdomen, legs, and 4 wings (.....)

c. The stage that eats the most extensively (.....)

Compare between Larva and Pupa:

Comparison Point	Larva (Caterpillar)	Pupa (Chrysalis)
Nutrition		
Next Stage		

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Science Application Fun :

In front of you a Spider Observation Card, study the figure carefully then Complete the card:

Organism Name:	
Date: Class: Name :	
	
Number of legs	
Presence of antennae	
Presence of wings	

Answer:

Is a spider considered an insect? Prove your answer.

.....

From your previous study of insects and according to the spider observation cards, Compare between the honey bee and the spider according to (Presence of wings / Presence of antennae / Number of legs).

Comparison point	Honey Bee	Spider
Presence of wings		
Presence of antennae		
Number of legs		

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Second : Homework

1. Complete: In the butterfly life cycle, the stage that hatches from the egg is called ……...

Compare between: the Larva and pupa stages according to (Feeding- Next Stage):

Comparison point	The larval	The pupa
Feeding		
Next Stage		

3. Define Molting:

… … … …

Third: Weekly Assessment **Week (.....)**

Group (A)

1. Choose the correct answer: Most insects usually lay their eggs on:

a) Dead and dry tree trunks.

b) The lower surface (back) of plant leaves.

c) Very high mountain peaks.

d) Dry rocks in open deserts.

2. Explain: Newly hatched larvae eat large amounts of food rapidly.

... .

... .

3. write the number representing :

- Number of legs on a bee .....
- Number of body parts of a butterfly .....

4. What happens if: The larva cannot undergo molting process to replace its skin during continuous growth?

... .

... .

5. Compare: The adult insect stage and pupa stages in terms of : movement ability and feeding

	Pupa	Adult insect
Movement ability		
Feeding		

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Group (B)

1. Choose the correct answer: A tiny insect that has just hatched from the egg is called the :

a) Adult or Complete insect.

b) Larva.

c) Pupa .

d) Egg.

2. write the number representing :

- Number of wings on a bee .....
- Number of antennae on a butterfly .....

3. Give an example of: A safe place where insects seek refuge to protect their eggs.

.....

4. What happens if: An insect egg hatches in a dry environment and lacking food and plants suitable for their feeding?

.....

5. Are all insect eggs similar (Yes / No)? Explain your answer.

.....

Group (C)

1. Choose the correct answer: The process of molting in insects primarily means:

a) Laying eggs abundantly on leaves surfaces.

b) Searching for huge amounts of food to store.

c) Shedding its old skin and replacing it for a larger body

d) Entering a long hibernation period under the soil.

2. write the number representing:

- Number of stages of bee life cycle .....
- Number of eyes of butterfly .....

3. Give an example of: A transitional stage of the insect life which characterized by a rapid growth and high food consumption.

.....

4. What happens if: The larva grows rapidly without its exoskeleton expanding?

.....

5. State three characteristics of the butterfly's body:

.....

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CHAPTER THREE: HOW PLANTS GROW

3 – 1 Seed Germnation Week .....

3 – 2 after Germnation

3 – 3 flowers and fruits

3 – 4 the plant body

FIRST: Classroom Performance :(Sow today, reap tomorrow's bounty)

In front of you a variety of dry seeds:

(Chickpeas, fava beans, yellow lentils, kidney beans) in order from top to bottom

Examine the figures, and then complete the following table:

Seed	Color	Size (large/medium/small)	Texture (rough/smooth)
			
			
			
			

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Learning Journey: The Seed's Journey:



Make your own germination «passport» booklet and write on the

First page «Seed Data,» for example (My name: corn seed; My home: warm soil; My size: medium), pasting the real seed on to this page.

Second page (Germination): Draw the seed split open with a small radicle emerging from it, then write the «crossing condition.»

Third page (small Seedling): Draw a small plant above the soil surface with small leaves. Write: «My leaves have appeared, and I need sunlight to make my food.»

Fourth page (Flowers): Draw the plant grown large, with flowers blooming on it. Write: «I grew and made colorful flowers to attract the bees.»

Fifth page (The Fruit): Draw the fruit with new seeds inside it. Write: the flower turned into a delicious fruit carrying seeds to begin the journey again.

And now you have (the germination passport).

Congratulations! You have received the «Germination Passport.» Answer the following questions to successfully activate your seed growth visa:

Question 1: Mention three characteristics of different seed .

1. .....
2. .....
3. .....

Question 2: Arrange the stages of seed growth by placing sequential numbers from (1 to 4):

( ) The first green leaves open up, and the seedling continue to grow.

( ) The radicle grows downward into the soil to absorb water and anchor the plant.

( ) The seed absorbs water and swells, so its coat cracks.

( ) The plume grows upward out of the soil, so the seedling starts to appear.

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The Secret Behind the difference in Shape for Performing Function:

Imagine that each part of the plant became separated from the rest of the plant; Connect each part to its figure and its function.

Plant Part	Function	Figure
Root	I help the plant repro-duce, and turn into fruits and seeds	
Stem	I have a flat shape and capture sunlight	
Leaves	I anchor the plant in the soil and absorb water from it.	
Fruit	I carry water from the roots to the rest of the plant›s parts, and I carry the leaves	

Second Homework Performance:

(1) Complete: The part that extends beneath the soil surface and absorbs water is .....

(2) Give reason: Some plant leaves have a broad, flat shape.

... ...

(3) Write what the statement indicates: A part of the plant that acts as a "passage" for transporting water to the rest of plant's parts.

... ...

(4) What happens if: a plant is Completely lacking roots and soil is exposed to strong winds?

... ...

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(5) Compare between: the plant root and the plant stem in terms of (the main function of each).

The plant root	The plant stem

Third: Weekly Assessment — Week (.....)

Group (A)

(1) Choose the correct answer: The main function of the stem in the plant is :

A. Absorbs water and dissolved salts from the soil.

B. Supports the plant and acts as a passage for transporting water to the leaves.

C. Captures the greatest possible amount of sunlight.

D. Anchors the plant firmly within the ground.

(2) Give reason: seeds differ noticeably from each other in size, shape and color.

... ...

(3) Write what the following statement indicates:

A main part of the plant directly responsible for capturing sunlight.

... ...

(2) Give reason: The stem is described as a passage or a vital transport network within the plant body.

……..……

(3) Mention the number of seed leaves (cotyledons) of the fava bean plant.

……

(4) What happens if: the new seeds fall on to the soil?

……..

(5) Compare between: fava bean plant and sunflower plant (in terms of the best months of the year to plant them).

Fava bean	Sunflower

Group (C)

(1) Complete the following statement :

The plant mainly consists of three main parts …….. , ……. and …….

(2) Give reason: Some Plant leaves are flat and wide.

……

(3) Give an example of a plant whose seed leaves (cotyledons) only two.

……

(4) What happens if:

a plant's roots grow above the soil surface instead of extending beneath it?

……

(5) Arrange the following plant growth stages:

( ) Flowers bloom / opening of flowers

( ) Formation of buds

( ) Growth of the stem and leaves

( ) Fruit production

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First Monthly Training

Question One:

a) Complete with what is scientifically appropriate:

1. Putting living organisms with similar characteristics in groups is called

……

2. The active stage that hatches from the butterfly›s egg and feeds voraciously on leaves is called the …… stage.

3. Fennec fox feet are characterized by the presence of.....

4. Most desert animals are active.....

5. The Luff plant lives in an environment with ..... water and ..... soil.

b) Give reason:

1. The seed does not need sunlight in the initial stages of germination (when it is below the soil surface).

……

2. The importance of using a magnifying glass while examining the surrounding environment.

……

3. Camels drink a large quantity of water at once.

……

4. Complete the following table:

Part of the living organism	The Importance
The fennec fox's large ears	.....
The jerboa's hind legs	.....

Question Two:

a) Correct the underlined word in the following statements:

1. The part that anchors the plant in the soil is called the bud.

……

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2. The corn plant seed is large and has white and black stripes.

……

3. The bee›s body consists of 4 parts.

……

4. The jerboa has thick fur on the soles of its feet.

……

5. The camel lives in the Nile River environment

……

B) What happens in the following cases

1. If a plant seed is placed in the soil and provided with water.

……

2. If the larval stage is absent from the butterfly›s life cycle.

……

3. If the ears of a Fennec fox were small in size.

……

4. If we moved a frog that lives in a river to the desert.

……

Question Three

A) Choose the correct answer

1. Which of the following represents the correct order of the stages in a butterfly life cycle

a) Egg → Pupa → Larva → Adult butterfly

b) Larva → Egg → Pupa → Adult butterfly

c) Egg → Larva → Pupa → Adult butterfly

d) Pupa → Larva → Egg → Adult butterfly

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B) Compare between the stem of plant and the root of plant (In terms of the main function of each).

The plant root	The plant stem

C) **Explain**: Some desert plants have small – sized leaves.

……

D) What is the better time to plant bean and sunflower?

……

Question Four:

A) Complete the following statements with the correct number

1. The number of leaves that emerge directly upon the germination of a fava bean seed is……..

2. The number of a butterfly's legs is …….

3. The number of stages in a bee's life cycle is ……..

B) Define :

1- The larva.

……

2- The location

……

3. The cotyledons(seed leaves)

……

C) What is the importance of:

1- Adaptation of living organisms.

……

2- Molten process for larva.

……

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CHAPTER 4: PROPERTIES OF LIGHT

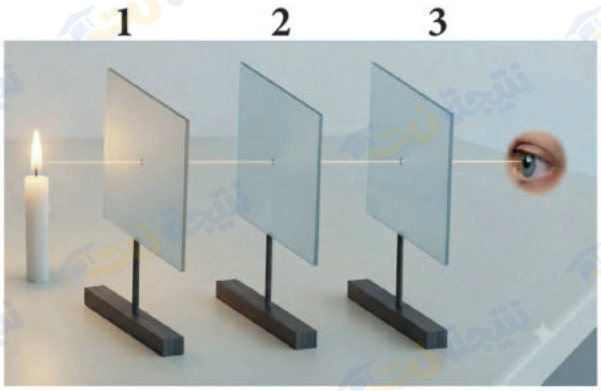
4-1: How Does Light Travel? **Week .....**

4-2: Light harvesting

FIRST: Classroom Performance :

Discover the Mystery of Light›s Path (The Magic Holes

In collaboration with your classmate in the group, observe the following figure which show three cards with holes placed in front of a lighting candle, and then answer the following questions:



1. What do you observe while looking through the hole of the first card when all three holes are aligned in a straight line?

.....

2. From the previous activity,conclude the main property of how light travels in air?

.....

3. Complete: Light reflected from a mirror travels in ..... lines.

Learning Journey: Burning paper with sunlight:

Your classmate conducted an experiment to collect sunlight on to a piece of paper.



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1. What happens when: Sunlight is focused into a single point using a magnifying glass and directed at a piece of paper for a period of time?

.....

2. Mention the safety precautions he should follow while performing this experiment.

.....

Second : Homework

1. Complete: When sunlight falls on a mirror and bounces off, the reflected light travels in.....

2. Give reasons: avoid direct looking at sunlight by magnifying glass.

.....

3. Give an example of: A substance or medium that can be sprayed or Sprinkled into the air to see and track the path of faintly reflected light.

.....

4. What happens if: The spot of light collected by the magnifying glass becomes smaller?

.....

5-Compare between: The path of sunlight when it falls on a mirror and when it falls on a rough surface.

path of sunlight when it falls on a mirror	path of sunlight when it falls on a rough surface

Third: Weekly Assessment Week (.....)

Group (A)

1. Choose the correct answer:

All of the following are true regarding how sunlight travels, **EXCEPT:**

A. Sunlight always has the property of traveling in a straight line.

B. Sunlight continues to travel in straight lines after bouncing off a mirror.

C. When sunlight bounces off a mirror, it starts moving in a curved line.

D. The light path can be observed by sprinkling a small amount of starch.

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2. What happens when: collecting sunlight using a magnifying glass onto a paper surface?

.....

3. What is wrong with the following behavior? A student looks directly toward the sun using a magnifying lens to test lighting intensity.

.....

4. Give an example of: A rough surface that reflects light falling upon it in a scattered manner and in different directions.

.....

5. Define: Light Source:

.....

Group (B)

1. Choose the correct answer:

The bouncing back of light in straight lines when it touches a polished, solid surface represents the phenomenon of:

(a) Reflection

(b) Refraction

(c) Absorption

(d) Emission

2. Complete the statement: Light travels in ..... lines.

3. Why do we scatter a small amount of starch in the place through which light passes?

.....

4. What happens when: We use a magnifying glass to collect sunlight into a small point on a black paper?

.....

5. Mention two sources of light: ..... and .....

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Group (C)

1. Choose the correct answer:

The smaller the focused point of light became, it becomes .....

A. Less bright and less hot

B. More bright and less hot

C. Less bright and hotter

D. More bright and hotter

2. Complete the statement: Sunlight collects at a single high-temperature spot when using a ..... for a limited period of time.

3. What we call the bouncing back of light when it falls on a surface?

.....

4. Mention two things that should **NOT** be done when performing the light collection experiment.

.....

.....

5. Give an example of: a natural light source that emits light continuously.

.....

.....

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4-3: Shadows and Sun (1) Week: .....

4-4: Shadows and Sun (2)

First: Classroom Performance (Observation & Exploration Activities)

Activity (1): Sun Movement and Shadow Position Changes

In collaboration with your classmates, observe shadow movements and the effect of sunlight rays, then answer:



1. The direction of the shadow is always ..... to the direction of Sun.
2. When an opaque object blocks sunlight, light is obstructed, forming a dark area behind it called a .....
3. As the sun moves, shadow forms on the ..... side of the sun; therefore, shadow position also .....…

Activity (2): Effect of Shadow on Temperature:

- The temperature of sunny areas becomes ..... compared to shaded areas.
- Shaded areas are cooler and often ..... compared to sunny areas.

Track Shadows to Know Your Time :

Here are several situations your classmates encountered. What result do you expect for each? Match Column (A) with the appropriate item in Column (B):

Column (A) - Situation	Column (B) - Expected Result
1. Sun is at its highest point (Noon time)	( ) A shadow is formed in the opposite side of Sun.
2. Sunlight falls on an object	( ) A very short shadow is formed directly underneath the object.
3. Sun in the early morning	( ) Ground temperature decreases in this place.
4. Direct sunlight is blocked from a place	( ) A very long shadow of the object is formed.

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Second : Homework

1. When measuring ground temperature using a thermometer, What is the procedure to be followed when measuring the temperature of the ground?

.....

2. Give reason: the heat rises in sunny places by the time passing.

.....

3. Determine the validity of the following statement: Ground in a shaded place is often more humid compared to a sunny place.

.....

4. Explain the cause of shadow formation as you learned from the lesson?

.....

5. When do we get the shortest shadow length during the day?

.....

Third: Weekly Assessment Week (.....)

Group (A)

1. Choose the correct answer:

A very long shadow of objects forms on the ground at:

(Noon / Early Night / Early Morning / Midnight)

2. When does a shadow form?

.....

3. What happens if:

The apparent position of Sun in the sky changes from East to West with respect to shadow extension?

.....

4. Explain how we use an infrared thermometer.

.....

5. Give scientific reason: shadows always formed in the direction opposite to Sun.

.....

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Group (B)

1. Choose the correct answer:

When we gradually move an opaque object away from a flashlight toward the wall, its shadow size:

(Increases / Decreases / Doubles / Remains constant)

2. What happens if: Noon sunlight falls on a pole in the school yard?

.....

3. Define the sundial.

.....

4. What is the name of the tool used to measure the temperature of any place?

.....

5. Give scientific reason: Ground in sunny place becomes warmer than ground in shaded locations.

.....

Group (C)

1. Choose the correct answer:

When Sun is at its highest point in the sky (Noon time), object shadows are:

(Very long to the West / Very long to the East / Very short directly under the object)

2. What happens if: Early morning sunlight falls on a pole in the school yard?

.....

3. Give reason: Using an infrared thermometer.

.....

4. What is the name of the tool used to tell time through changing shadow positions?

.....

5. Answer:

If clouds suddenly disappear and the sky becomes Completely clear and sunny, what do you expect will happen to (shadow area on the ground)?

.....

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CHAPTER 5: PROPERTIES OF SOUND

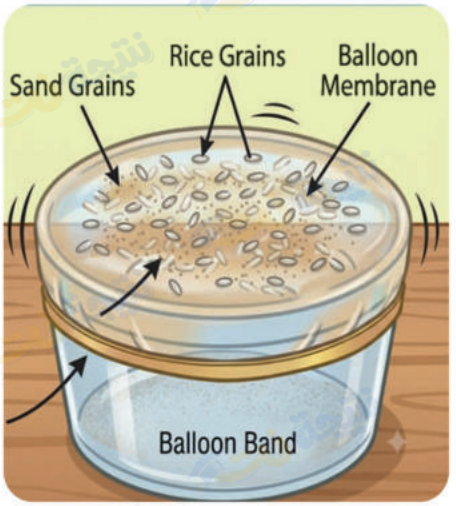
5-1 How Sound is Produced? **Week: .....**

5-2 Volume of Sound and Vibration

5-3 How Sound Travels?

Classroom Performance (Discover the Mystery of Sound and Vibration)





Collaborate with your classmates to make the following observations and record your conclusions:

String Phone and Vibrating Balloon Experiment: You have an illustration of two students talking through a tight string phone, and another showing a stretched balloon with rice and sand grains while a student speaks loudly near it.

Observe and Discuss:

1. When talking through a string phone, what transmits vibrations from the first cup to the second cup? (.....)

2. If we place rice (or sand) grains on the stretched balloon and speak loudly, why do the grains jump and move? (.....)

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Conclusion: Complete the statements based on classmate discussion:

• Sounds are produced when objects move rapidly up and down or back and forth. This motion is called (.....).

• Sound travels best when the string is (.....), while sound stops Completely if we touch the string with our fingers to prevent (.....).

Complete the table with your group:

Classify the following materials based on their ability to transmit sound vibrations:

(Iron - Soft Sponge - Wood - Air).

Materials that transmit sound vibrations well	Materials through which sound travels less efficiently

Second : Homework

1. Complete the following statements:

a. An object makes a loud sound, when it vibrates..... vibration

b. Faint sounds are produced when the sound source moves a small distance, indicating that vibration strength is (.....).

2. Answer:

What happens if we touch our larynx (throat) with our fingers during complete silence, and then speak loudly? Explain what you feel in both cases scientifically.

.....

.....

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3. Give reason :

a. The bell produces sound when it struck.

.....

.....

b. The sound of knocking is heard more clearly when placing the ear on the door.

.....

.....

4. What will happen in the following cases ?

a. Moving the cords of guitar strongly.

.....

.....

b. Holding midpoint of string in the string phone.

.....

.....

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Third: Weekly Assessment — Week (.....)

Group (A)

1. Choose the correct answer:

When a drum membrane bounces up and down rapidly upon striking, this movement is called……..

(Rotation / Reflection / Vibration)

2. What happens when we gently pluck a rubber band (regarding vibration distance)?

……

3. Give reason: We must stay away from loud sounds.

……

4. Complete the following statement: Sound travels easily when the string is .....

5. Observe the figure: Determine the strength of sound reaching your ears.

The sound is .....



Group (B)

1. Choose the correct answer:

Which action directly cut off the sound of a vibrating string on a musical instrument?

(Increasing string tension / Holding the string with a finger / Plucking harder)

2. Complete: Sound stops Completely in a string phone if the string is (.....).

3. Correct the statement: Sound vibrations travel through air only.

……

4. What happens as the force with which we strike a musical membrane increases (such as drum.

……

5. Look at the figure: Determine sound strength reaching your ears.

The sound is .....



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Group (C)

1. Choose the correct answer:

Bees produce a buzzing sound while flying due to wing vibration. If a bee lands on a flower and stops moving its wings, the sound.....

(Becomes louder / Stops immediately / Continues with same strength)

2. What happens when we pluck a rubber band with great force (regarding vibration distance)?

.....

3. Give reason: The harmful effects of using headphones for long periods.....

4. Define Vibration:

.....

5. Look at the figure: Determine sound strength reaching your ears.

The sound is .....



Second Monthly Assessment

First: Complete the Following Statements

1. An object that emits its own light, such as the Sun and lamps, is called a .....
2. Shiny and smooth surfaces reflect light regularly in .....
3. Sunlight travels in a ..... line unless an object obstructs its path.
4. When sunlight is focused on to a single point using a magnifying lens, the space becomes more ..... and its ..... rises.
5. Shadows are always formed in the direction ..... of the light source.
6. Sun, an object, and its shadow are always on the same .....
7. A ..... is used to tell time based on the regular movement of shadows.
8. The ground in sunny places is more ....., while in shady places it is cooler and more .....
9. When an object vibrates, it ....., and when this vibration stops.....
10. When the magnitude of an object's vibration increases, the ..... of the sound increases, and the sound becomes.....

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Second: Correct the Underlined Words in the Following Statements

1. Rough surfaces reflect light regularly in one direction.

.....

2. Light reflected from a mirror travels in a curved line.

.....

3. The larger the area of the light focused by a magnifying lens, the higher its temperature rises.

.....

4. A shadow forms in the same direction as the light source.

.....

5. The shadows are very long at midday at noon when Sun is high in the sky.

.....

6. White paper heats up faster than black paper when sunlight is focused on it.

.....

7. When vibrations stop, the sound continues.

.....

8. Plucking a rubber band gently produces a loud sound with large vibrations.

.....

9. Sound travels better through a string telephone when the string is slack.

.....

Third: Give Reason:

1. Black paper burns when sunlight is focused on it using a magnifying lens.

.....

2. A stick's shadow is short at midday and long in the morning and evening.

.....

3. The ground in sunny places is warmer than ground in shady places.

.....

4. Hearimg the sound of musical instruments when they are plucked or struck.

.....

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5. The sound instantly cut off in a string telephone if the string is grabbed in the middle.

.....

Fourth: What Happens in the Following Cases…?

1. When Sun moves from East to West (relative to: the direction of the shadow)?

.....

2. When a shady place becomes sunny (relative to the temperature and humidity of the ground)?

.....

3. When a small amount to powder or water spray is scattered in the area where reflected light passes through ?

.....

4. When an object begims to vibrate and make a sound (relative to the air surrounding the object)?

.....

5. When hitting a drum or a musical triangle strongly (relative to the amount of vibration and the intensity of the sound)?

.....

6. When the string is stretched tightly between the two cups in a string telephone (relative to the sound intensity in telephone)?

.....

Fifth: Answer the Following Questions

1. Mention three safety precautions that must be followed when conducting sunlight-focusing experiments using a magnifying lens.

.....

.....

2. Explain how shadows are formed.

.....

.....

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3. Discuss the working idea of a sundial and how shadow movement is used to determine approximate time.

.....

.....

4. Compare sunny places and shaded places in terms of: temperature, humidity level

	Sunny places	Shaded places
Temperature		
humidity level		

5. How does sound travel from its source to the human's ear? **Explain,** that showing the role of air vibration.

.....

.....

6. Based on how a simple string telephone is made, mention only two points that make the sound reaching your ear is more clear.

.....

.....

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CHAPTER 6: WIND POWER

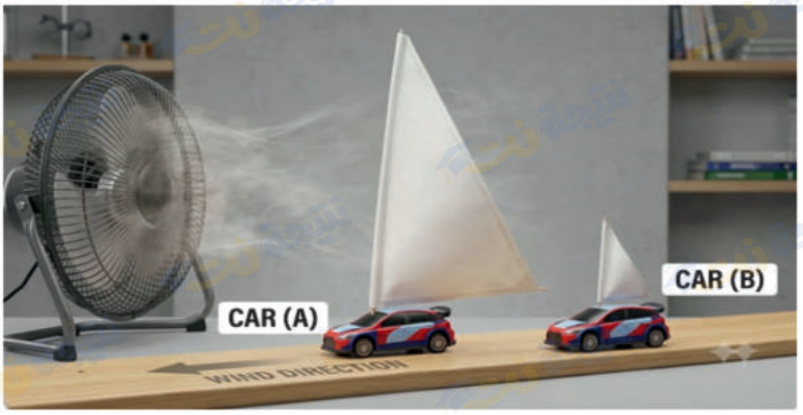
6-1 Wind-Powered Cars **Week: .....**

6-2: Sail Size

Classroom Performance (Discover the Secret of Sail Car Movement)

Collaborate with your group classmete, observe, and record your conclusion:

Magic Sail Experiment: You have two identical toy cars placed in front of an electric fan running at constant speed. Car (A) has a large sail attached, and Car (B) has a small sail attached.



Observe and Discuss:

Which of the two cars will move backward longer distance until they stop? (Car .....).

Complete the following statement based on your discussion with your classmates group :

Car (A) moves longer distance because the large sail has a (.....) surface area, exposing it to a (.....) amount of wind and that make the sail affected with (.....) power of the wind

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Second : Homework

1. Complete the following statements:

a. Force is an effect that causes objects to ..... or change direction.

b. As wind force increases, it pushes objects for a ..... distance compared to weak wind.

2.What happens when increasing the surface area of an object which catches wind.

.....

.....

3. Give reason:

Changing sail surface area causes a change in sailboat movement.

.....

.....

4. Compare between: Small Sail Boat and Large Sail Boat(in terms of : air quantity that sail captured - distance that sailboat moved)

	Boat with Small Sail	Boat with Large Sail
air quantity that sail captured		
distance that sailboat moved		

5. Explain one factor that causes sailboat moves more distance ?

.....

.....

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Third: Weekly Assessment **Week (.....)**

Group (A)

1. Choose the correct answer:

When strong wind acting on a sail car, the force that effect on it …….

(increases / decreases)

2. Complete:

When sail size is small, it expose to a ..... amount of air, thus traveling a ..... distance.

3. **Put** (✓) or (✕):

Wind force causes stationary objects to move, but cannot change their direction. ( )

4. Give reason:

A suitable sail size must be used to suit boat size.

.....

5. **What happens if:** We increase electric fan speed facing a sail car from low to high speed? and Why?

.....

Group (B)

1. **Choose the correct answer:**

The factor that causes objects to move or stop is known as:

(Distance / Size / Force).

2. **Complete:**

As sail area exposed to wind increases, as .....

3. **Put** (✓) or (✕):

A boat with a larger sail travels a shorter distance under the same wind compared to a boat with a smaller sail. ( )

4. When making a wind-powered car, what happens when fan speed is set to low?

.....

5. **Give reason:**

Fishing boats on the Nile River equipped with large sails.

.....

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Group (C)

1. Choose the correct answer:

If a car with a large sail moves 2m and 35cm, a car with a small sail is expected to move approximatly.....

(3m 55cm / 2m 35cm / 3m 10cm / 1m 35cm)

2. Complete:

As wind force effect on a sailboat increases, as.....

3. **Put** (✓) or (✕): We can clearly see wind force with the naked eye touching objects to move them. ( )

4. When making a wind-powered car, what happens when fan speed is set to high?

: .....

5. Compare between :

Effect of Strong Wind and. Weak Wind on the object motion:

Comparison Point	Weak Wind	Strong Wind
Distance Traveled		
Magnitude of acting Force		

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CHAPTER 7: RUBBER POWER

7-1 Rubber Band Powered Cars **Week: .....**

7-2 Rubber Band Force

First: Classroom Performance: Discover the secret of a rubber band-powered car

Design a rubber band-powered car to launch the car as far as possible.

To build a launch pad, secure a rubber band tightly to the hook, then stretch the rubber band backward to release it.



Record data in the following table:

Launch Trial	Stretching Distance (cm)	Car Traveled Distance (cm)
Trial 1	5 cm	.....
Trial 2	10 cm	.....
Trial 3	15 cm	.....

Second : Homework

1. What happens when:

a. Increasing rubber band stretch.

.....

b. Releasing the stretched rubber band.

.....

2. Correct underlined words:

a. When the number of rubber bands increases, it requires less force to stretch a given distance.

b. When the distance of stretch rubber band increases, The object moves shorter distance

3. What is the effect of removing the stretching force acting on a stretched rubber band?

.....

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Third: Weekly Assessment **Week (.....)**

Group (A)

1. Complete the following statement:

Distance traveled by a projectile launched from a rubber band launcher depends on the amount of band ..... backward.

2. Correct underlined word in the following statement:

a) To make a car travel longer, we use fewer rubber bands.

.....

b) As rubber band stretch increases, force acted on objects decreases.

.....

3. What happens if:

Using a very weak and thin rubber band instead of a thick, strong band in a ball launcher toy?

.....

Group (B)

1. Complete the following statement:

As rubber band stretch increases, as .....

2. What happens to the object when the rubber band released after it contracts?

.....

3. Correct underlined words in the following statement:

Flight distance of a ball launched by rubber increases as pull-back distance decreases.

.....

4. **Give reason**: Using four rubber bands in a rubber band car makes it move faster than using just one band.

.....

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Group (C)

1. Complete the following statement:

As the number of rubber bands increases, ...

2. Correct underlined words in the following statement:

a) When leaving a rubber band on the table without stretching, it produces a large force.

.....

b) Force generated by a rubber band increases when it is slack.

.....

3. What happens when: Placing a light cotton ball in front of a rubber band, pulling backward a long distance and releasing it suddenly?

.....

.....

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CHAPTER 8 : SOIL , WATER , AND LIFE IN EGYPT

8 - 1 The relationship between the ground and water **Week: .....**

8 - 2 Transporting Giant Stone Statues

Frist:Class performance: water race between sand and clay



Cooperate with your classmates to study the properties of clay soil (mud) and sand soil.

Steps:

1. Place two perforated cups (one containing sandy soil and the other containing clay soil) over two empty transparent containers.
2. Pour water at the same time on to both the sandy soil and the clay soil
3. Observe carefully and start timing

Answer the following questions:

1. Which of the two soils drains (leaks) water faster?

.....

2. Explain your answer:

.....

3. Compare the advantages of clay soil and sandy soil:

	Clay soil	Sandy soil
Size of particles		
Spaces between particles		
Ability to keep water		

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Second : Homework

1. Complete the following statement:

Sandy soil is characterized by large spaces between its particles; therefore, the particle size is .....

2. Explain the statement:

Sandy ground dries out very quickly even after heavy rainfall.

.....

3. Answer the following question:

What are the characteristics of Nile silt that enable it to retain water for a long time?

.....

4. What happens if:

Heavy rain falls on soil with very fine (tiny) particles and very small spaces between them?

.....

5. Compare between:

Sandy Soil and Clay Soil in terms of: (Particle Size).

Clay soil	Sandy soil

Third: Weekly Assessment Week (.....)

Group (A)

1. Complete the following statement:

Water drains (leaks) very slowly in clay soil because its particles are ..... and the spaces between them are very small.

2. Mention the scientific reason:

Nile River silt is considered suitable and ideal for agriculture in the Egyptian environment.

.....

3. Answer the following question:

Mention an examples of soil with large particles.

.....

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4. What happens if:

We try to agriculture in the desert without using special and advanced techniques to conserve water?

.....

5. Compare between:

Sandy Soil and Clay Soil in terms of: (Water Drainage Speed)

Clay soil	Sandy soil

Group (B)

1. Complete the following statement:

The speed of water drainage into the soil depends on the size of the ..... that make up the soil.

2. Give reason:

It is difficult for water to pass easily through clay soil particles.

.....

3. Answer the following question:

Why do the spaces through which water passes differ between sandy soil and clay soil?

.....

4. Compare between:

Desert Sand and Nile River Silt in terms of: (Ability to retain soluble nutrients in water).

Desert Sand	River Silt

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Group (C)

1. Complete the following statement:

An example of soil with small particles is .....

2. Give reason:

When agriculture in the Egyptian desert, farmers are forced to use advanced and modern techniques to conserve water.

.....

.....

3. Answer the following question:

How does the tight cohesion (compactness) of soil particles affect the air spaces within it?

.....

.....

4. What happens if:

An equal amount of water is poured at the exact same moment into two cups, one containing sand and the other containing clay?

.....

.....

5. Compare between:

Sandy Soil and Clay Soil in terms of: (Particle Size and Spaces Between Particles).

	Sandy soil	Clay soil
Particle Size		
Spaces Between Particles		

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Third Monthly Assessment

First: Complete the Following Statements

1. Force is an effect that causes a stationary object to move, stops a moving object, or changes its .....
2. The greater the force, the ..... its effect on the object.
3. When strong winds blow on a wind-powered car, it travels a ..... distance compared to weak winds.
4. As the surface area of the sail that catches the wind increases, ... the force exerted by the wind on it (given a constant wind force).
5. A rubber band possesses a property that allows it to return to its ..... after being stretched.
6. When the number of rubber bands increases, the forces resulting from each band returning to its original shape are .....
7. The rate of water leakage into the soil depends on the ..... that make up the soil.
8. Water leaks slowly in ..... soil because its particles are fine and tightly packed.
9. Ancient Egyptians sprayed ..... on the sand in front of the sledge to make the surface slipperier when moving statues.

Second: Correct the Following Statements

1. The smaller the force acting on an object, the greater its effect.

.....

2. Reducing the surface area of the sail increases the force produced by the wind.

.....

3. The distance traveled by a wind-powered car is constant and does not change with the change of wind strength.

.....

4. A rubber band produces force when it is slack and non - stretched.

.....

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5. Increasing the number of rubber bands decreases the distance traveled by the car.

... .

6. Sandy soil is characterized by having very small spaces between its particles.

... .

7. Water leak through Nile River silt faster than through desert sand.

... .

8. Using 3 rubber bands provides a weaker moving force for the car than using a single band.

.....

Third: Give the scientific Reason for each of the following:

1. A wind-powered car travel a longer distance when the wind is strong.

.....

2. A sailboat with a large sail move a longer distance than a boat with a small sail when exposed to the same wind.

.....

3. The car rush forward when a stretched rubber band is released

.....

4. The distance traveled by a car increase when using two rubber bands instead of one stretched to the same length.

.....

5. Water leaks quickly in sandy soil.

.....

6. Nile River silt retains water for a long time and exhibits slow water leakage.

.....

7. Nile River silt is suitable for agriculture.

.....

8. Ancient Egyptians spray water on the sand in front of the sledge while transporting huge statues?

.....

.....

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Fourth: What Happens when ...?

1. A fan speed is increased from low to high, to the distance traveled by a wind-powered car?

.....

2. The force acting on the car if we remove the sail Completely while it is exposed to wind?

.....

3. The distance traveled by a rubber-band-powered car when the stretch length of the rubber band is increased from 5 cm to 15 cm?

.....

4. The force produced by the rubber band after it fully returns to its original shape?

.....

5. The force that affecting on the car when using 3 rubber bands together instead of one band at the same stretch length?

.....

6. A quantity of water is poured on to soil with large particles (such as desert sand)?

.....

7. A quantity of water is poured on to fine-grained clay soil (such as Nile silt)?

.....

8. The force required to move a heavy object if the surface beneath it is made slipperier?

.....

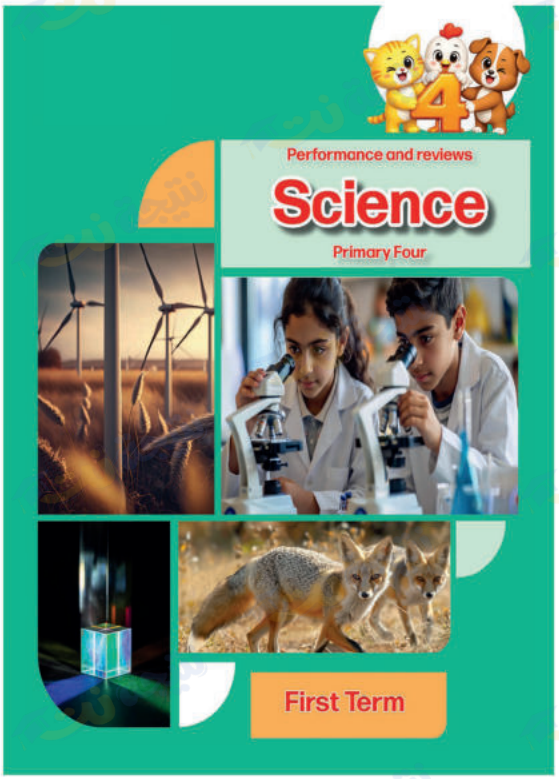
Fifth: Compare sandy soil and clay soil in terms of: particle size, spaces between particles, and water leakage speed.

	Sandy soil	Clay soil
Particle Size		
Spaces Between Particles		
Water Leakage speed		

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