

حل تجميعية نهائية وفق الهيكل الوزاري الجديد منهج انسابير



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الخامس ← علوم ← الفصل الأول ← ملفات متنوعة ← الملف

تاريخ إضافة الملف على موقع المناهج: 23:17:19 2025-11-19

ملفات اكتب للمعلم اكتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل
منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي للمدرس

المزيد من مادة
علوم:

إعداد: Alkaabi Salama

التواصل الاجتماعي بحسب الصف الخامس



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الخامس والمادة علوم في الفصل الأول

حل تجميعية مراجعة وفق الهيكل الوزاري الجديد منهج انسابير

1

تجميعية مراجعة وفق الهيكل الوزاري الجديد منهج انسابير بدون الحل

2

حل مراجعة نهائية وفق الهيكل الوزاري الجديد منهج انسابير

3

مراجعة نهائية وفق الهيكل الوزاري الجديد منهج انسابير بدون الحل

4

حل مراجعة نهائية Revision Exam Final منهج انسابير Inspire

5

Final exam: 20/11/2025

Units	Lessons
Unit 1 Investigate matter	L1:Identify properties of materials
	L2:Mixtures and solutions
	L3:Physical and chemical changes
	L4: Solids, liquid and gases
Unit 3 Earth's patterns and movements	L1: The role of gravity
	L2: Earth's motion
Unit 4 Earth and space	L1: Earth's in space
	L2: Stars and their patterns

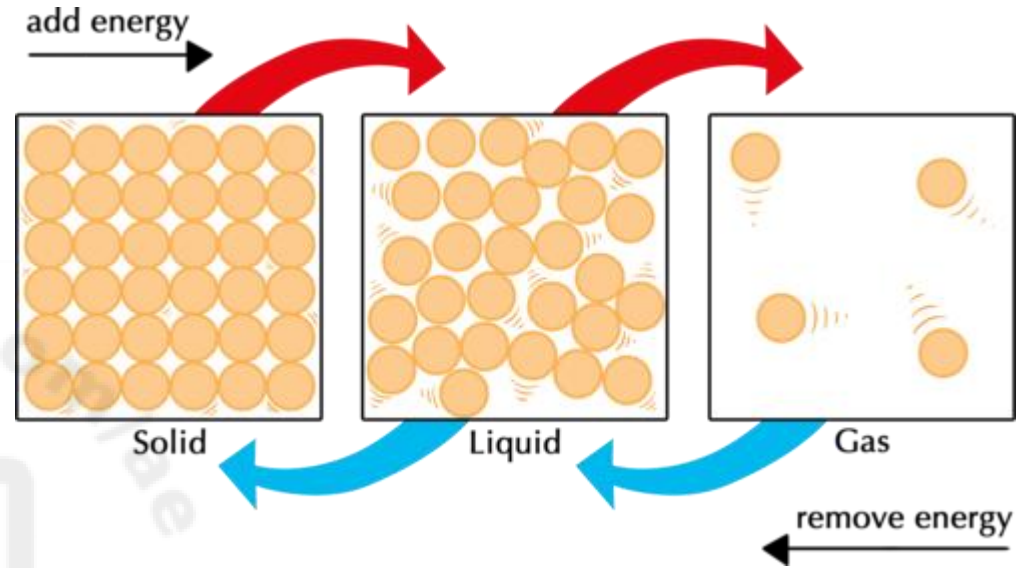
Part 1: MCQ

1. Describe the properties of liquids in terms of shape and volume.

	Solid	Liquid	Gas
shape	Define shape شكل ثابت	No define shape ليس لديه شكل ثابت	No define shape ليس لديه شكل ثابت
Volume	Define volume حجم ثابت	Define volume حجم ثابت	No define volume ليس لديه حجم ثابت
Particles arrangement	The particles are tightly packed together	The particles are less tightly packed	Particles are far from each other
Particles movement	Vibrate تتحرك بشكل مهتز	Can move and slide past one another الجزيئات تنزلق على بعضها البعض	Move around each other very easily تدور حول بعضها البعض

Question. The figure shows the particles of liquid. Describe the properties of liquids in terms of shape and volume.

No definite shape and volume	Definite shape and volume
No definite shape and definite volume	Definite shape and no definite volume



1. How does matter change from one state to another?
Circle all that apply.

- ☒ A. adding energy
- ☒ B. removing energy
- ☐ C. adding mass
- ☐ D. removing volume

2. Liquid has _____. Circle all that apply.

- ☒ A. definite volume
- ☐ B. definite shape
- ☐ C. no definite volume
- ☒ D. no definite shape

Part 1: MCQ

2. Identify and describe the three common states of matter

Is it Matter?



Four friends were talking about matter. They each had different ideas about the kinds of things that are matter. This is what they said:

Abe: I think something needs to be solid to be matter.

Kayla: I think matter can be a solid or a liquid.

Curtis: I think matter can be a solid, liquid, or gas.

Lori: I think matter can be a solid, liquid, or gas, but it doesn't include living things.

Who do you agree with most? **Curtis**

Explain why you agree.

Sample answer: Matter is made of particles and is what makes up all objects. Matter can be in the form of a solid, a liquid, or a gas.

Matter: is the amount of particles
All the matters such as solid, liquid and gases made of small particles



Question. Which of the following correctly describes the three common states of matter?

Solids keep their shape, liquids take the shape of their container, and gases spread out to fill all the space available.	Solids and liquids both flow easily, and gases stay in one place.
Solids have no shape, liquids and gases always stay the same size.	Solids, liquids, and gases all have the same shape and volume.

Part 1: MCQ

3. Describe the relationship between mass and volume as properties of matter.

4. Define the terms matter, mass, and volume.

Matterالمادة: is anything has a mass and takes up space.

Mass الكتلة: amount of matter in an object (number of particles).

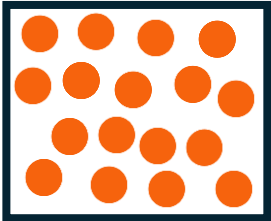
- (more mass - light) → more matter (particles)
- (less mass - heavy) → Less matter (particles)

Volume الحجم: describes how large or small an object.

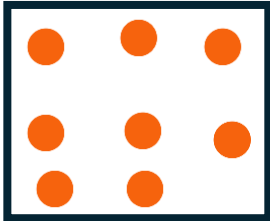
- (large) → more volume
- (small) → less volume

Question. The figure shows an **inflated balloon** and a small bag of **marbles**. Which statement best describes their volume and mass?

The balloon has more volume because it takes up more space (large), and the bag of marbles has more mass because it has more matter. ●	The balloon has more mass because it is larger, and the bag of marbles has more volume because it is heavier.
The balloon and the bag of marbles have the same mass and volume because they are both small objects.	The bag of marbles has more volume because it feels heavy, and the balloon has more mass because it is filled with air.



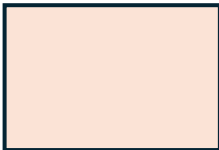
More mass



less mass



More volume



Less mass



Part 1: MCQ

5. Describe properties of gases in terms of arrangement of particles.

Gases have no definite shape or volume. The particles in a gas are much farther apart than particles in solids or liquids. They can move around each other very easily. Gases spread out and completely fill a closed container. If you make the container bigger, the same amount of gas will expand to fill it.

Read the passage above then use it to answer the following questions:

1. Which comparison between gases and solids is correct?

- ☒ A. Gas particles are farther apart than solid particles.
- ☐ B. Gas particles are closer together than solid particles.
- ☐ C. Gas particles cannot move while solids can.
- ☐ D. Gas particles have a fixed shape while solids do not.

2. Which best explains why gases can be compressed more easily than solids or liquids?

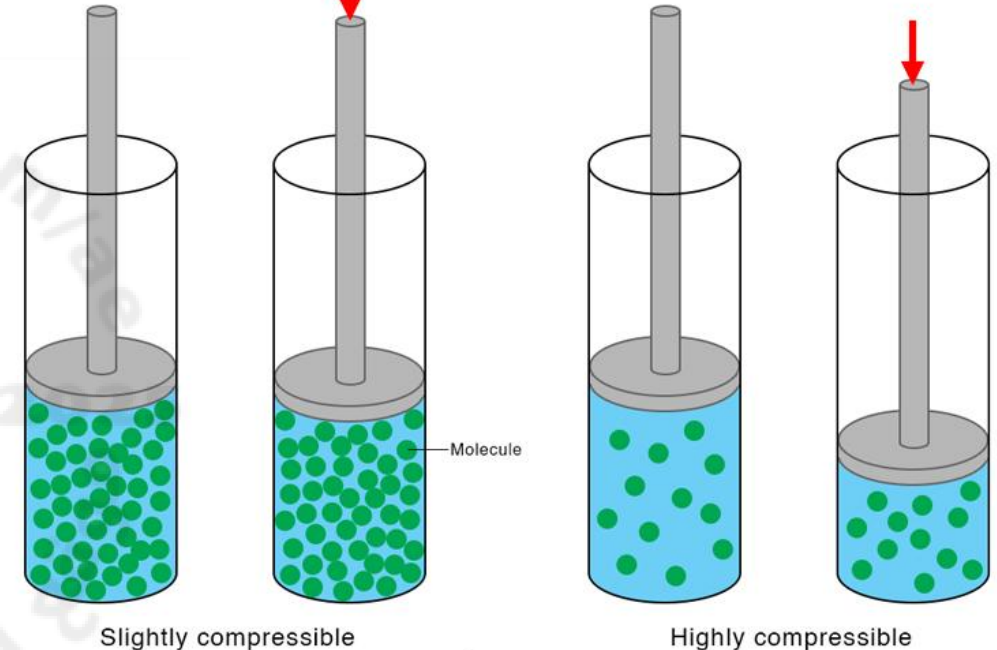
- ☒ A. Gas particles are very far apart with lots of empty space
- ☐ B. Gas particles are tightly packed together
- ☐ C. Gas particles cannot move at all
- ☐ D. Gas particles are heavier than solids

Is Gas Compressible

Liquid

Gas

Applied pressure



Compressed: يمكن ضغطها

Part 1: MCQ

6. Define physical and chemical changes.

7. Identify given examples as physical or chemical changes based on evidence

Physical changes	Chemical changes
physical change begins and ends with the same kind of matter. A	chemical change —also called a chemical reaction—is a change that produces new matter with different properties from the original matter.

Examples أمثلة



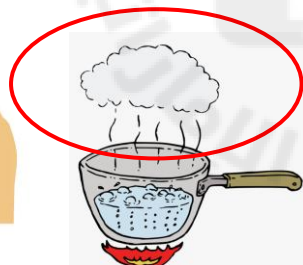
Boiling
الغليان



Melting
الذوبان



Cutting Paper
قطع الورق



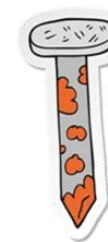
Evaporation
التبخّر



Combustion
الاحتراق



Digestion
عملية الهضم



Rusting
الصدأ
Corrosion
Tarnish



Cooking
الطبخ

Part 1: MCQ

8. Apply the Law of Conservation of Mass to chemical reactions in a closed system.

9. Apply the Law of Conservation of Mass to physical changes.

قانون حفظ الكتلة

The law of **conservation of mass** states that matter is neither created nor destroyed during a physical change or chemical reaction. For

Conservation of mass in chemical changes

You combine 500 g of one material and 200 g of another in a **closed container**. A **chemical change** occurred. What can you say about the masses of the materials after the chemical change?

What law are you using?

Answer:

- a. $500\text{g} + 200\text{g} = 700\text{g}$
- b. Law of conservation of mass

Conservation of mass in Physical changes

Salt and Water



A spoonful of salt has a mass of 10 grams. A cup of water has a mass of 300 grams. What do you predict will be the total mass of the saltwater when the salt is dissolved in the water? Circle the answer that best matches your thinking.

- A. ~~more than 300 grams~~
- B. less than 300 grams
- C. 300 grams

Explain your thinking. What reasoning did you use to make your prediction?

By adding the salt 10g to the water 300g it will increase the mass. Even if the salt dissolved

Part 1: MCQ

10. Investigate mixtures and classify them.

Mixtures:

Physical combination of two or more substances

Homogenous

Mixtures that have parts that are mixed uniformly.

Solution

Example:
salt and water, juice

Heterogenous

Mixtures that have parts that are NOT mixed uniformly.

Suspension: Suspension can settle out over time (muddy water)

Colloid: The parts are so small that they do not settle out. (Milk, fog, Foam, airborne dust)



Three-Dimensional Thinking

1. Which mixture is most likely a solution?

- A. muddy water
- ☒ B. cranberry juice
- C. potting soil
- D. milk

2. How are mixtures formed and separated?

Mixtures are physical combination of two or more substances (things) can be separated by : magnet, filter paper, sieving and evaporation

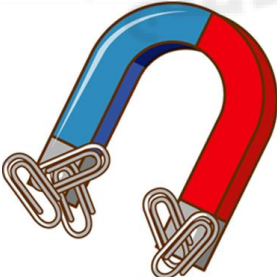
Part 1: MCQ

11. Identify physical properties of solids.

Physical properties الخصائص الفيزيائية. Page 11

Characteristics صفات of matter that can be **observed مراقبتها** or **measured قياسها**.

They can be observed without changing the material

Conductivity التوصيلية	Reflectivity الانعكاس	Solubility الانصهار	Magnetism الانجذاب
Describes how energy الطاقة such heat الحرارة or electricity الكهرباء can move through material Example: iron, silver, copper	Is the way light reflects يعكس or bounces off a smooth ناعم or flat سطح مسطح objects. Example: mirror, shiny pans	Is the ability of matter to dissolve in a liquid. Example: sugar dissolving ذوبان in water	Is the ability of the material to be attracted تتجذب to the magnetic للمغناطيس For example: metal
			

ماهي الخصائص الفيزيائية للنحاس

3. Describe at least three physical properties that can help identify copper.

Copper has a reddish-brown color and can take on many different shapes because it is able to be formed. Copper can conduct electricity and reflect light.



Part 1: MCQ

12. Describe observable signs of a chemical change (color, odor, gas, temperature change).

Change in color	The change from shiny metal to rust and tarnish shows that certain metals have chemically changed
Change in odor	Changing in odor (smell)
Temperature change	Many reactions cause matter to become warm or cold.
Formation of gas	Bubbles or fizzing can indicate the release of gas.
Formation of solids	Chemical reactions of some solutions can form solid

Question	2
----------	---

Which of the following is an example of **soap scum**?

A	Temperature change	B	Change in odor
C	Formation of gas	D	Formation of solid

Question	1
----------	---

Which of the following is **NOT** an example of chemical change?

A	Soap sum	B	Bubbles from antacid into water
C	Toasted marshmallow	D	Bubble in soda

Question	3
----------	---

The figure shows the reaction of baking soda and vinegar.
Which of the following gases is released as bubbles

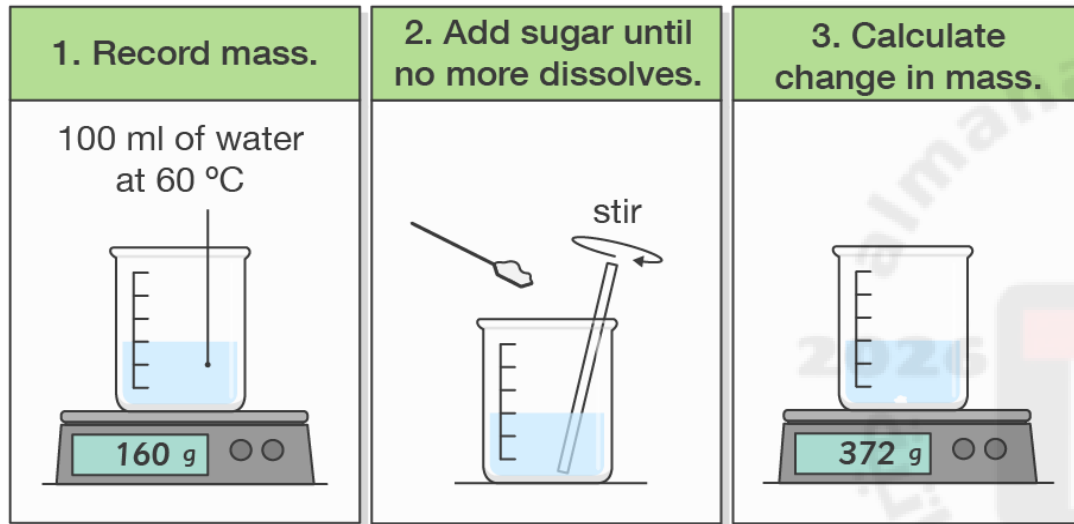


A	Carbon	B	Carbon dioxide
C	Toasted hydrogen	D	Oxygen

Part 1: MCQ

13. Explain how temperature affects solubility

Investigating the Effect of Temperature on Solubility



Repeat steps 1–3 for different water temperatures.

High temperatures affect the solubility الذوبان of solids for example:

Hot water and sugar: the sugar will dissolve يذوب faster

Cold water and sugar: the sugar will take time to dissolve

INQUIRY ACTIVITY

Hands On

Solubility Solutions

Think about the phenomenon of the solid being mixed into the liquid. You will investigate whether a solid will dissolve faster in warm water or cold water.

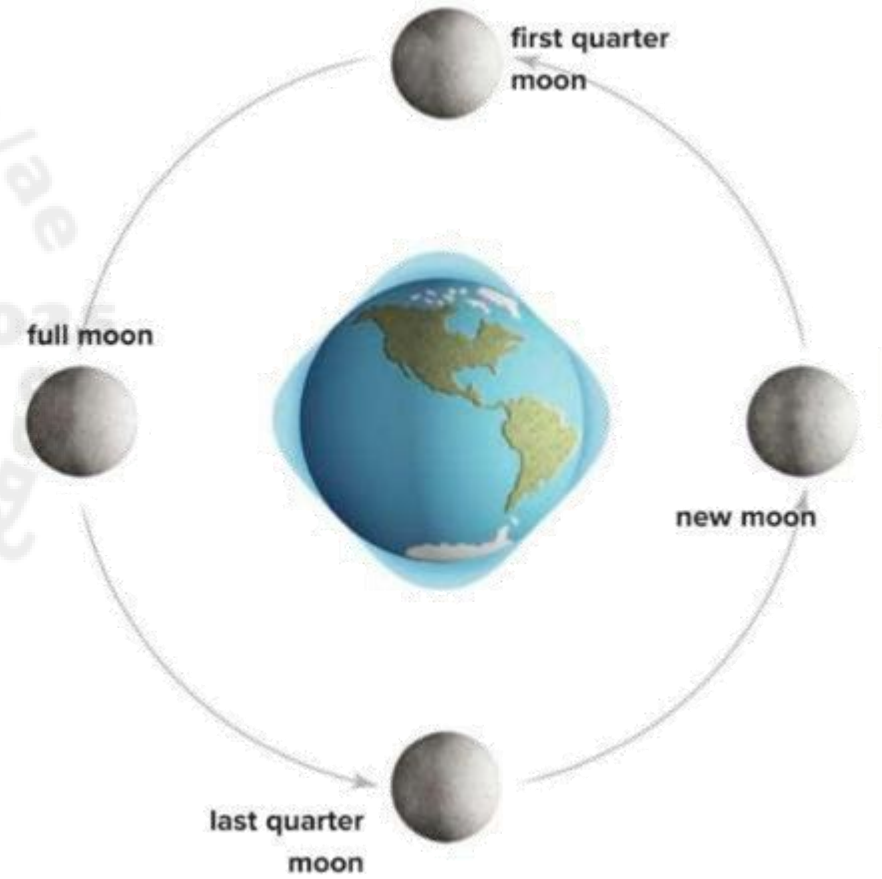
Make a Prediction Will sugar dissolve faster in warm or cold water?

Sample answer: I think the sugar will dissolve faster in warm water because when I add drink mix to cold water, I have to stir it a lot.

14. Describe how the Moon's gravitational pull causes tides on Earth

Describe how the moon's gravity causes Earth's tides.

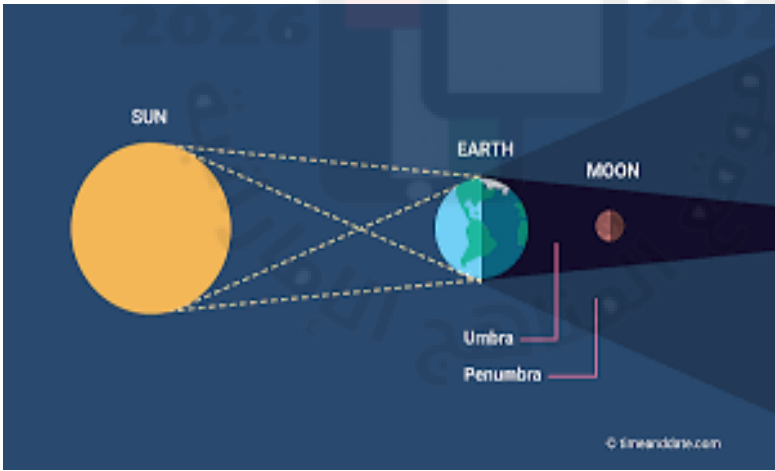
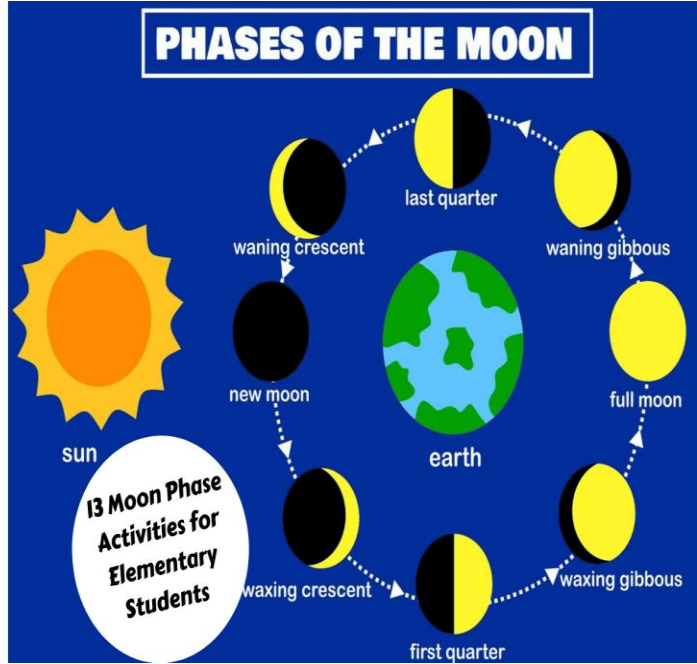
The Moon's gravity pulls on Earth's oceans, making bulges of water. These bulges cause high tides, and as Earth turns, we get high and low tides each day.



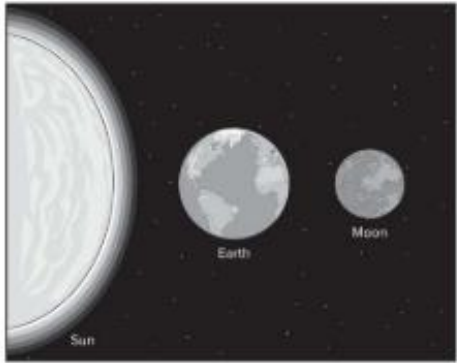
Part 1: MCQ

15. Describe how the Moon moves around Earth (phases, eclipses)

Earth motion		
Types of motion	1. Rotation 	1. Revolution 
Definition	One complete spin in the axis	One complete spin around the sun
Movement based on	Tilt axis	Flat orbit (ellipse)
Time	24 hours	365 ¹ / ₄ days
Result of the movement	- Day (bright)/ night (dark) - Changing the length of the day	4 seasons: Summer – winter – autumn - spring



Phases of the Moon



Look at the diagram of the Sun, Earth, and Moon. What would a nighttime observer on Earth see? Circle the answer that best matches your thinking.

- A. 
- B. 
- C. 
- D. 
- A full moon A crescent moon A quarter moon No moon is seen

Explain why you agree.

Sample answer: The answer is A. This diagram shows a full moon. The Sun is shining on the half of the Moon that is facing Earth. The Moon is not in Earth's shadow.

A **moon eclipse خسوف القمر** happens when the Earth moves between the Sun and the Moon. The Earth blocks the Sun's light, so the Moon looks dark or turns red for a while. This **only happens when the Sun, Earth, and Moon are in a straight line.**

Part 1: MCQ

16. Explain how a planet's distance from the Sun affects its day and year.



Three-Dimensional Thinking

1. Based on the data table, what conclusion can you draw?

الكوكب Planet	طول اليوم بالساعة Length of Day (hours)	طول السنة Length of Year (Earth years)	المسافة من الشمس Distance from the Sun (AU)
Mercury	1,408	0.2	0.4
Venus	5,832	0.6	0.7
Earth	24	1.0	1.0
Mars	25	1.9	1.5
Jupiter	10	11.9	5.2
Saturn	10	29.4	9.5
Uranus	17	84.0	19.2
Neptune	16	164.8	30.0

A. The farther a planet is from the Sun, the longer its day.

B. The farther a planet is from the Sun, the longer its year.

C. A day on Earth is longer than a day on Venus.

D. Uranus is the coldest of all the planets.

طريقة إيجاد الحل من الجدول

1. Look at the question and find the key words
2. Make line under the key words
3. Go to the table and find the similar information in table and compare it with the question.

في هذا السؤال على الطالب إيجاد العبارة الصحيحة:

- تم تحديد كلمة Further plant from the sun وتدل على المسافة من الشمس (البعيد)

- تم تحديد كلمة longer year أي الأطول سنة

- الجواب سيكون كوكب Neptune هو الذي تنطبق عليه هذه الصفات

Part 1: MCQ

16. Explain how a planet's distance from the Sun affects its day and year.

The Solar System

Within the Milky Way galaxy is our solar system, which consists of the Sun and all of the objects that orbit around it. One type of object that orbits the Sun are planets. A **planet** is a large, round object in space that orbits a star.

2. A planet is a large, round space object that _____ the Sun.

- A. attracts
- ☒ B. orbits
- C. follows
- D. reflects

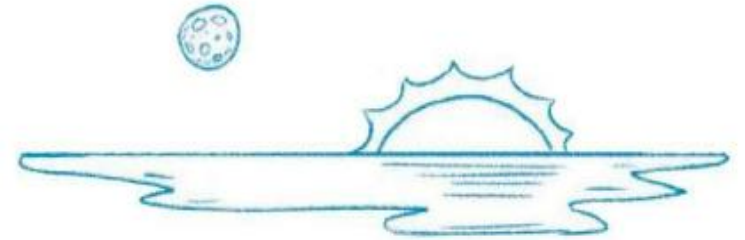
3. Circle all that apply.

Stars appear to move in the sky because of Earth's _____.

- A. axis
- ☒ B. rotation
- C. poles
- D. galaxies
- ☒ E. revolution

Apparent Motion of Stars

The stars in the northern sky seem to circle around Polaris, which is also known as the North Star. **Apparent motion** is the way something appears or seems to move. The stars appear to move because of Earth's rotation and revolution.



Part 1: MCQ

17. Identify signs of a physical change from given data.

physical change begins and ends with the same kind of matter. A

Physical changes	Example
Temperature change	Water freezing
Formation of gas	Bubbles in soda



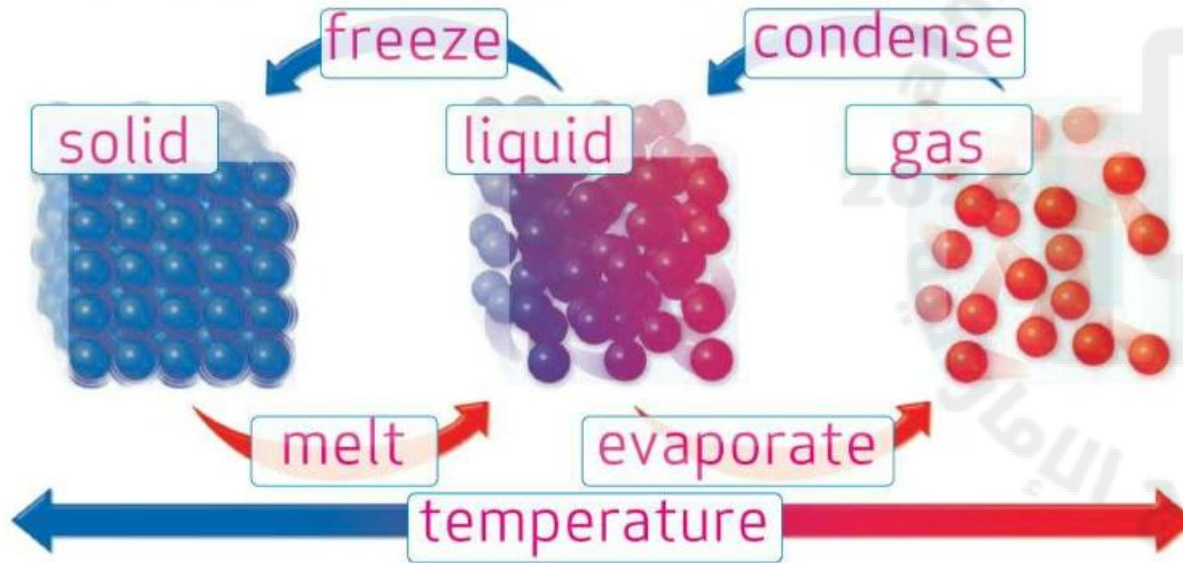
What are the physical signs:

- The shape changes and gets smaller.
- It becomes thicker.
- It feels harder and rougher.

18. Explain data or pictures that show how matter changes

Changing States of Matter

The average movement of particles in an object is determined by the amount of energy in the object. Temperature is a measurement of this movement. When energy is added, the particles move faster. When energy is lost, the particles move more slowly. When enough energy is gained or lost, there is a change of state.



التغيرات في حالات المادة Changing states of matter

- The **movement of the particles** depend on the **amount of energy**
تعتمد حركة الجزيئات على كمية الطاقة المخزنة في الجسم

- **Temperature** : is a measurement of this movement
درجة الحرارة تعتبر مقياس لحركة الجزيئات

1. **Adding energy** → High temperature → particles move faster
عند إضافة الطاقة (رفع درجة الحرارة) تتحرك الجزيئات بشكل أسرع

2. **Removing energy** → Low temperature → particles move slower
عند إزالة الطاقة (خفض درجة الحرارة) تتحرك الجزيئات بشكل أبطأ

Part 1: MCQ

19. Explain that gravity pulls objects toward Earth's surface

The Pull of Earth's Gravity

Gravity is a force of attraction, or pull, between any two objects. The Barringer Crater is the result of gravity pulling a meteor to Earth's surface. The strength of gravity is affected by the total mass of the objects and the distance between them. The pull of gravity decreases when the total mass of the two objects decreases or they are further apart.

On Earth, gravitational pull is the attraction between an object and Earth. No matter the location on Earth's surface, gravity pulls objects on all sides down toward the center. Every object that has mass experiences a gravitational pull. When an object is dropped from a certain height on Earth, it rushes downward due to gravity.



EXPLAIN THE PHENOMENON

What caused this crater to form?

Summarize It

Use what you have learned to explain what pulls objects toward Earth's surface.

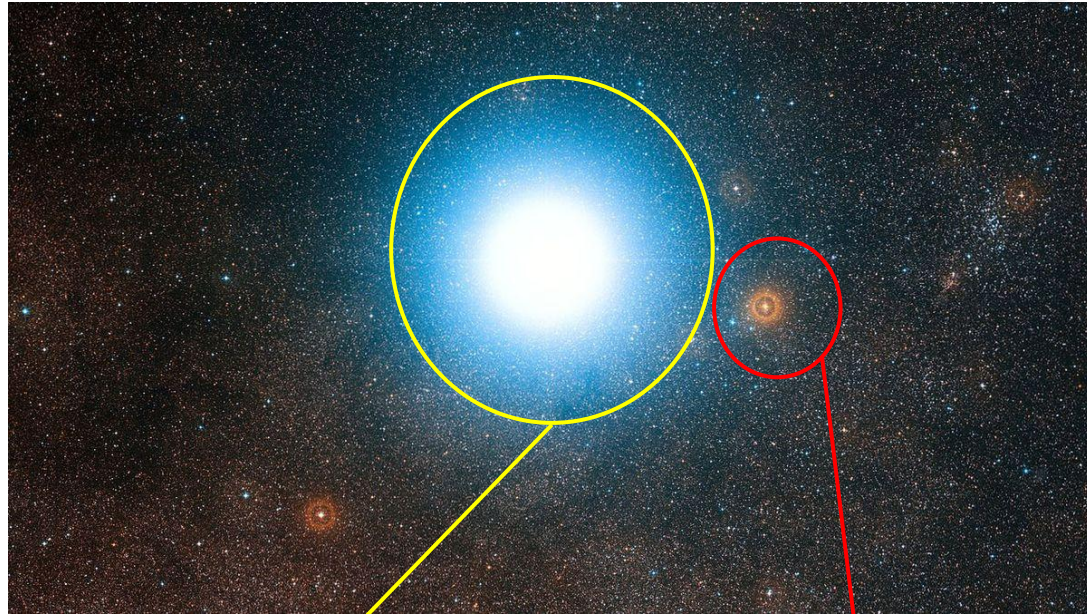
Sample answer: Gravity is the force or attraction between two objects. Gravity pulls objects down toward the center of Earth.

Part 1: MCQ

20. Explain why some stars look brighter than others (distance vs size).

Stars

A **star** is a sphere of hot gas that gives off light and heat.
The only star you can observe during the daytime is the Sun.



Close star

Far star

EXPLAIN THE PHENOMENON

Why are some stars
brighter than others?

Summarize It

Use what you have learned to explain what stars are and why some appear brighter than others when we look at the night sky.

Stars are spheres of hot gas that give off heat and light. Some stars appear brighter than others due to their size or their relative distance from Earth. For example, the Sun is the closest star to Earth, which is why it is brighter than all of the other stars and visible during the day.

Short answer.

Stars is a sphere of hot gas that give light and heat. When the **star is close to earth (SUN)** it **will look shiny (bright) and they will look bigger.**
when the stars are far, they will be less shiny, and their size is small

Part 2: Writing section القسم الكتابي

1. A. Identify chemical changes using observable evidence.

B. Identify conservation of mass in chemical reactions

C. Use nature of particles to compare solids, liquids and gases.

A Chemical Change

Frying an egg	Tearing up paper	Burning wood
A nail rusting	Grilling a hamburger	Dissolving salt in water
Exploding fireworks	Melting butter	Baking a cake
Rotting banana	Mixing baking soda and vinegar	Evaporating water
Lighting a match	Crushing a sugar cube	Milk going sour

Changes in matter can be chemical or physical. Put an X in any of the boxes that are examples of chemical changes.

Explain your thinking. How did you decide if something is a chemical change?

Sample answer: I chose these as examples of chemical change because they transform into a new type of matter.

Make sure when to solve this question to consider the following: عند حل السؤال المتعلق بالتغيرات الكيميائية دائما تذكر التالي:

- Definition of chemical changes تعريف التغير الكيميائي
- Signs of chemical changes والعلامات التي تدل على وجود التغير أو التفاعل الكيميائي

Part 2: Writing section القسم الكتابي

1. A. Identify chemical changes using observable evidence.

B. Identify conservation of mass in chemical reactions

C. Use nature of particles to compare solids, liquids and gases

قانون حفظ الكتلة

B original matter. The law of **conservation of mass** states that matter is neither created nor destroyed during a physical change or chemical reaction. For example, when you mix



Three-Dimensional Thinking

Think about a scenario for an experiment. You combine 500 g of one material and 200 g of another in a closed container. A chemical reaction occurs. What can you say about the mass of the materials after they combine and go through the reaction? Choose a simple mathematical equation to support your answer.

A. $500\text{ g} - 200\text{ g} = 700\text{ g}$

☒ B. $500\text{ g} + 200\text{ g} = 700\text{ g}$

C. $700\text{ g} - 500\text{ g} = 200\text{ g}$

D. $500\text{ g} \times 200\text{ g} = 700\text{ g}$

The mass of the materials after they go through the reaction would be the same as the sum of the materials before they react. Since it is in a closed container, if there are any gases that are a result of the reaction, they will be part of the total mass.

1. A. Identify chemical changes using observable evidence.

B. Identify conservation of mass in chemical reactions

C. Use nature of particles to compare solids, liquids and gases.

C Matter is made of small particles

The arrangement of particles differs depending on the matter :

Solid: particles have very close

Liquid: particles are little bit close from each other

Gas: particles are far from each other

LESSON 4 LAUNCH

Particles in Matter



Four friends were talking about the particles that make up matter and give matter its properties. They each had different ideas. This is what they said:

Joyce: I think you can't see the particles that make up solids, liquids, and gases. They are too small to see.

Harold: I think you can see the particles that make up solids, liquids, and gases.

Royce: I think you can see the particles that make up solids and liquids, but you can't see the particles that make up gases.

Benito: I think you can see the particles that make up solids, but you can't see the particles that make up liquids and gases.

Who do you agree with most? **Joyce**

Explain why you agree.

Sample answer: Particles in matter are too small to see with ordinary magnification tools. The arrangement and movement of particles determine the state of matter.

Part 2: Writing section القسم الكتابي

2. A. Classify materials based on observable changes.

B. Define the terms physical property, conductivity, reflectivity and solubility.

C. Explain how the addition or removal of energy causes matter to change from one state to another.

A

INQUIRY ACTIVITY

Hands On

Test Matter's Properties

Think about the egg cracking. The egg has many different properties. All matter has different properties based on how it interacts with other matter.

Make a Prediction How can we test the properties of matter?

Sample answer: We can test how well matter conducts heat or is magnetic.

Carry Out an Investigation

BE CAREFUL Wear safety goggles. Be careful with any sharp or pointy edges on the materials.

1. Hold one end of each object (one at a time) in the ice water for thirty seconds. Did the end you were holding get cold? Record the results in the table on the next page.
2. Pick up each object and gently try to bend it. Did it bend easily? Record the results.
3. Touch the magnet to each of the objects. Did it stick? Record the results.
4. Hold each object under a light. Is it shiny? Record the results.
5. Leave the last column empty for now. You will be revisiting this activity later in the lesson.

Materials

- safety goggles
- acrylic rod
- paper clip
- rubber eraser
- aluminum foil
- copper wire
- wooden toothpicks
- magnet
- plastic bowl
- ice cubes
- water



Record Data

Object	Did it get cold?	Could you bend it?	Did the magnet stick to it?	Is it shiny?	What property does it have?
Acrylic Rod	No	No	No	Yes	reflectivity
Paper Clip	Yes	Yes	Yes	Yes	magnetism
Rubber Eraser	No	Yes	No	No	flexibility
Aluminum Foil	Yes	Yes	No	Yes	conductivity
Copper Wire	Yes	Yes	No	Yes	conductivity
Wooden Toothpick	No	No	No	No	other

Communicate Information

6. Compare your results with your classmates. Would you expect to have similar results by following the same procedure? Explain.

Sample answer: I expect everyone to have similar results by carefully following the steps. Some difference might be a result of not measuring correctly.

2. A. Classify materials based on observable changes.

B. Define the terms physical property, conductivity, reflectivity and solubility.

C. Explain how the addition or removal of energy causes matter to change from one state to another.

B Define the terms: physical property, conductivity, reflectivity, solubility

Physical properties الخصائص الفيزيائية. Page 11

Physical properties الخصائص الفيزيائية. Page 11

Characteristics صفات of matter that can be **observed** مراقبتها or **measured** قياسها.

They can be observed without changing the material

Conductivity التوصيلية	Reflectivity الانعكاس	Solubility الانصهار	Magnetism التجاذب
Describes how energy الطاقة such heat الحرارة or electricity الكهرباء can move through material Example: iron, silver, copper	Is the way light <u>reflects</u> يعكس or bounces off a smooth ناعم or flat سطح مسطح objects. Example: mirror, shiny pans	Is the ability of matter to dissolve in a liquid. Example: sugar dissolving ذوبان in water	Is the ability of the material to be attracted تتجذب to the magnetic للمغناطيس For example: metal
			

2. A. Classify materials based on observable changes.

B. Define the terms physical property, conductivity, reflectivity and solubility.

C. Explain how the addition or removal of energy causes matter to change from one state to another.

B How can we use the properties of matter to identify materials

1. **Look at physical properties** – Check color, shape, size, texture, hardness, and state (solid, liquid, gas).
2. **Measure mass**– Each material has a special mass that helps tell it apart from others.
3. **Test how it reacts** – Some materials react with water, heat, or other substances in different ways.
4. **Observe behavior** – See if it bends, melts, floats, or conducts heat or electricity.

Part 2: Writing section القسم الكتابي

2. A. Classify materials based on observable changes.

B. Define the terms physical property, conductivity, reflectivity and solubility.

C. Explain how the addition or removal of energy causes matter to change from one state to another.

C Explain how the addition or removal of energy causes matter to change from one state to another.
اشرح كيف تؤثر إضافة أو إزالة الطاقة مثل الحرارة والبرودة على جزيئات المادة السائبة والصلبة و الغازية

Adding energy (high temperature)		
Process اسم العملية	Melting الذوبان	Solid → liquid
	Evaporation التبخر	Liquid → gas
Removing energy (low temperature)		
Process اسم العملية	Condensation التكثف	Gas → liquid
	Freezing التجمد	Liquid → solid

التغيرات في حالات المادة Changing states of matter

- The **movement of the particles** depend on the **amount of energy**
تعتمد حركة الجزيئات على كمية الطاقة المخزنة في الجسم

- **Temperature** : is a measurement of this movement
درجة الحرارة تعتبر مقياس لحركة الجزيئات

1. **Adding energy** → High temperature → particles move faster
عند إضافة الطاقة (رفع درجة الحرارة) تتحرك الجزيئات بشكل أسرع

2. **Removing energy** → Low temperature → particles move slower
عند إزالة الطاقة (خفض درجة الحرارة) تتحرك الجزيئات بشكل أبطأ

Part 2: Writing section القسم الكتابي

3. A. Describe gravity as a force that pulls objects toward one another

B. Explain how gravity affects objects on Earth and keeps planets in orbit.

C. Describe how the positions of the Moon and Earth result in changes in ocean water levels (tides) due to gravitational forces

A

LESSON 1 LAUNCH**PROBES**

Earth's Gravity



Four friends were talking about gravity. They each had a different idea. This is what they said:

Angie: I think Earth's gravity only pulls on things that are close to Earth's surface.

Tamara: I think Earth's gravity only pulls on things that are close to Earth and in Earth's atmosphere.

Carlos: I think Earth's gravity pulls on things close to Earth, including some things in space.

Mi-Ling: I think Earth's gravity pulls everything in the solar system toward it.

Who do you agree with most? **Carlos**

Explain why you agree.

Sample answer: Objects on or near Earth, including objects in space such as the Moon, satellites, and meteors, are pulled toward Earth due to the gravitational attraction of Earth and these objects.

You will revisit the Page Keeley Science Probe later in the lesson.

Part 2: Writing section القسم الكتابي

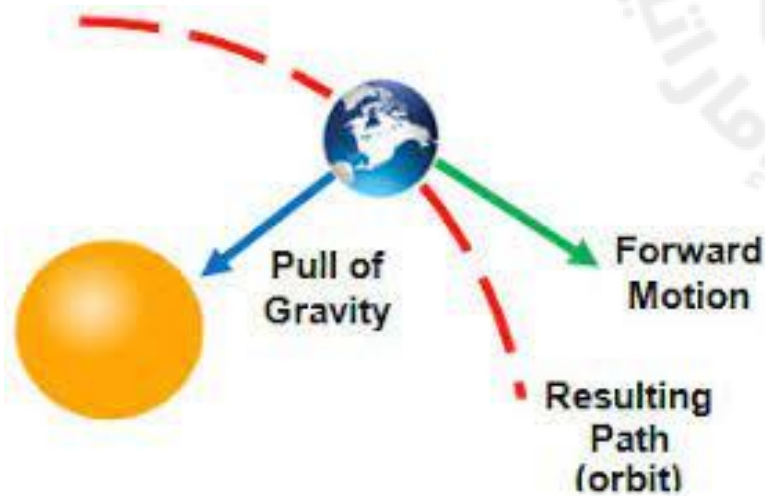
3. A. Describe gravity as a force that pulls objects toward one another

B. Explain how gravity affects objects on Earth and keeps planets in orbit.

C. Describe how the positions of the Moon and Earth result in changes in ocean water levels (tides) due to gravitational forces

B Explain how gravity affects objects on Earth and keeps planets in orbit.
اشرح كيف تؤثر الجاذبية على ثبات كوكب الأرض والكواكب الأخرى على المسار

Gravity pulls things toward the center of the Earth, so objects fall down when dropped. It also keeps the planets moving around the Sun instead of floating away into space.



The Pull of Earth's Gravity

- ✓ **Gravity** is a force of attraction, or pull, between any two objects. The Barringer Crater is the result of gravity pulling a meteor to Earth's surface. ✓ The strength of gravity is affected by the total mass of the objects and the distance between them.
- ✓ The pull of gravity decreases when the total mass of the two objects decreases or they are further apart.
- ✓ On Earth, gravitational pull is the attraction between an object and Earth. ✓ No matter the location on Earth's surface, gravity pulls objects on all sides down toward the center. ✓ Every object that has mass experiences a gravitational pull. ✓ When an object is dropped from a certain height on Earth, it rushes downward due to gravity.



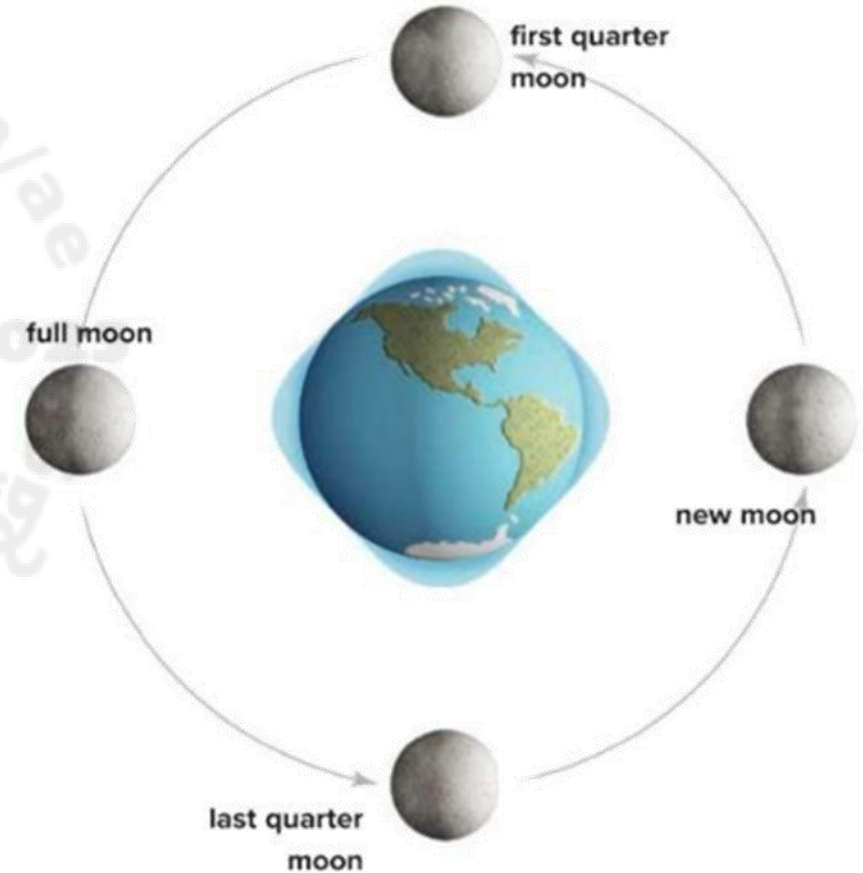
3. A. Describe gravity as a force that pulls objects toward one another

B. Explain how gravity affects objects on Earth and keeps planets in orbit.

C. Describe how the positions of the Moon and Earth result in changes in ocean water levels (tides) due to gravitational forces

C

- moon
1. Based on what you know about gravity, what causes Earth's changing tides?
 - A. Tides are caused by tropical storms such as hurricanes.
 - ☒ B. Tides are caused by the pull of gravity between Earth and the Moon.
 2. What causes the tide to bulge on the side of Earth facing the Moon?
 - ☒ A. Earth's water bulges on the side facing the Moon because of the pull of gravity.
 - B. The Moon reverses its orbit and causes the tides to change.



4. A. Explain how Earth moves through space and how it affects life on Earth.

B. Describe how Earth's tilt and revolution cause seasonal changes.

C. Label and arrange the planets in the solar system

Explain how Earth moves through space and how it affects life on Earth.

A

اشرح كيف تكون حركة الأرض في الفضاء وكيف تؤثر على حياتنا

Earth motion		
Types of motion	1. Rotation	1. Revolution
Definition	One complete spin in the axis	One complete spin around the sun
Movement based on	Tilt axis	Flat orbit (ellipse)
Time	24 hours	$365\frac{1}{4}$ days
Result of the movement	- Day (bright)/ night (dark) - Changing the length of the day	4 seasons: Summer – winter – autumn - spring

EXPLAIN THE PHENOMENON

How does the Sun's position allow us to tell time on a sundial?

Summarize It

Explain how Earth moves through space and how it affects life on Earth.

Sample answer: Earth rotates causing day and night. Earth revolves around the Sun, resulting in the seasons. Because of Earth's movement, we also see the different phases of the Moon and can tell time on a sundial.

4. A. Explain how Earth moves through space and how it affects life on Earth.

B. Describe how Earth's tilt and revolution cause seasonal changes.

C. Label and arrange the planets in the solar system

- B** **A- Explain why the seasons in the Northern and Southern Hemisphere are always opposite.**
b- Explain why in spring and autumn, the temperatures are similar in both hemispheres.

Seasons Page 31

Describe how Earth's tilt and revolution cause seasonal changes	
Summer – Winter	Spring – Autumn
North hemisphere: when axis far from the sun the season will be winter South hemisphere: when axis close to the sun the season will be summer	North and south hemisphere have the same temperature because it takes same energy from sun



Winter
about December 21–March 20



Spring
about March 20–June 21



Summer
about June 21–September 22



Autumn
about September 22–December 21

Part 2: Writing section القسم الكتابي

4. A. Explain how Earth moves through space and how it affects life on Earth.

B. Describe how Earth's tilt and revolution cause seasonal changes.

C. Label and arrange the planets in the solar system

C

