

تم تحميل هذا الملف من موقع المناهج الإماراتية



## حل مراجعة عامة للامتحان وفق الهيكل الوزاري منهج انسابير

موقع المناهج ← المناهج الإماراتية ← الصف الخامس ← علوم ← الفصل الأول ← حلول ← الملف

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المزيد من مادة  
علوم:

إعداد: Tayoun Nisrein

## 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 ملزمة مراجعة نهائية وفق الهيكل الوزاري منهج انسابير

1

ملزمة مراجعة نهائية وفق الهيكل الوزاري منهج انسابير

2

نموذج إجابة أسئلة الاختبار التجريبي الموحد وفق الهيكل الوزاري منهج بريدج

3

أسئلة الاختبار التجريبي الموحد وفق الهيكل الوزاري منهج بريدج

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حل تجميعية أسئلة الكتاب وفق الهيكل الوزاري منهج انسابير

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## EOT FOR INSPIRE SCIENCE TEXTBOOK 1/ GRADE 5

TERM 1 (2024-2025)/MS. NISREIN TAYOUN-HILI SCHOOL

### Unit 1 page 10/ Written Questions

**LO: Make observations and measurements to identify materials based on their properties**

#### VOCABULARY

Look for these words as you read:

chemical property  
conductivity  
magnetism  
mass  
matter  
physical property  
reflectivity  
solubility  
volume

#### Matter

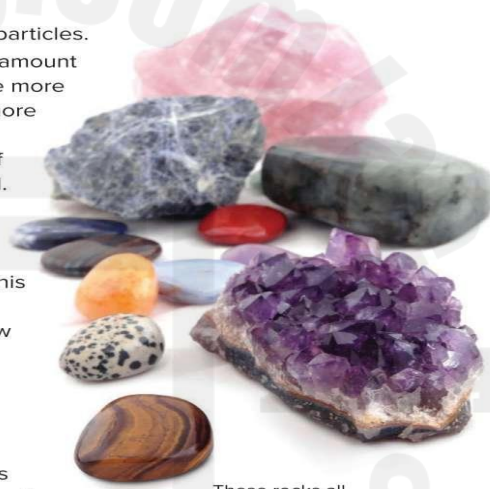
**Matter** is anything that has mass and takes up space. The water you drink, the air you breathe, and you are all made up of matter.

All matter is made of tiny particles.

**Mass** is a measure of the amount of matter in an object. The more mass an object has, the more particles an object has.

Think about holding a golf ball and a table tennis ball. The golf ball is made up of more particles. It has more mass. As you hold the golf ball and table tennis ball, you are also feeling their weight. Weight is how strongly gravity pulls on an object.

The amount of space an object takes up is its **volume**. Volume describes how large or small an object is. A golf ball and table tennis ball have roughly the same volume.



These rocks all have a different mass and volume.

1. Think about an inflated balloon with a small bag of marbles that is half its size. Which one has more volume? Explain your answer.

**Sample answer: The balloon has more volume, because it takes up more space.**

2. Which one has more mass? Explain your answer.

**Sample answer: The bag of marbles has more mass, because it contains more matter.**

### **Q1 Fill in the blank the correct answer.**

A) Matter is anything that has \_\_\_\_\_ and takes up \_\_\_\_\_.

- **Answer:** mass, space

B) The more \_\_\_\_\_ an object has, the more particles it is made up of.

- **Answer:** mass

c) \_\_\_\_\_ is a measure of the amount of space an object takes up.

- **Answer:** Volume

D) Weight is how strongly \_\_\_\_\_ pulls on an object.

- **Answer:** gravity

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E) There rocks have different ----- and -----

- **Answer:** Mass, Volume

F) A golf ball and a table tennis ball may have similar \_\_\_\_\_, but they have different -----

**Answer:** volume, masses

G) Bowling ball has more -----than a tennis ball, so it feels heavier due to the greater ----- acting on it

**Answer:** (Mass, Gravitational pull)

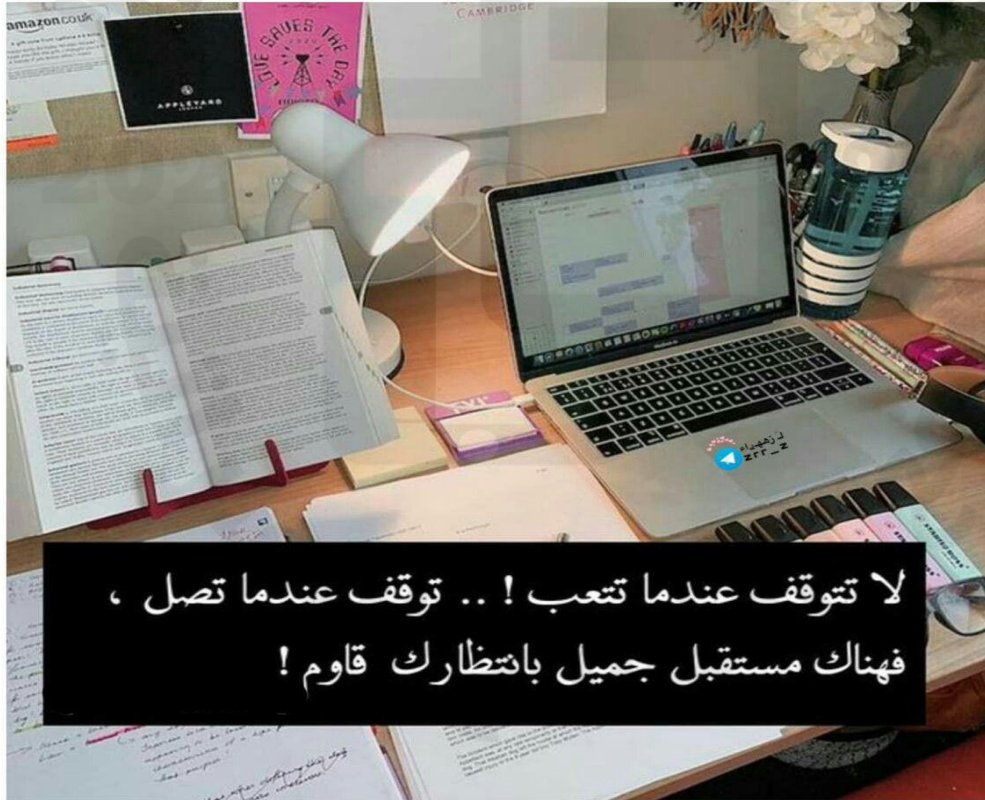
**Q2 What is matter, and how does it relate to the things around us?**

**Matter** is anything that has mass and takes up space. This includes everything around us, such as the water we drink, the air we breathe, and the objects we use daily

**Q3 Describe how you would determine if an object has more mass or more volume compared to another object.**

**Comparing Volume:** If one object is physically larger or occupies more space, it has more volume.

**Comparing Mass:** An object with more particles packed into it (more matter) will have a higher mass, regardless of its volume.



## Unit 1 Page 11 / Written Questions

**LO: Conduct an investigation to determine whether the mixing of two or more substances results in new substances.**

### Physical Properties

A characteristic of matter that can be observed and or measured is known as its **physical property**. These properties can be observed without changing the material. Some physical properties include the following:



**Conductivity** describes how energy, such as electricity or heat, can move through material. Metals such as iron, silver, and copper are good conductors of heat and electricity.

**Reflectivity** is the way light reflects, or bounces off, an object. Smooth, flat surfaces, such as mirrors and shiny pans, reflect light evenly.

**Solubility** is the ability of matter to dissolve in a liquid. Think about sugar in a glass of ice tea. The tiny sugar particles disperse evenly throughout the liquid. It might seem like the sugar disappeared, but it is easy to tell it is still there because the tea tastes sweet.

**Magnetism** is the ability of a material to be attracted to a magnet, without needing to be a magnet itself. Some metals are magnetic.



**GO ONLINE** Learn more about properties by watching the video *Using Properties of Matter*. Answer the question after you have finished.

1. How can we use the properties of matter to identify materials?

**Sample answer:** The physical properties of matter can help us identify matter. For example, we know most metals are reflective because light bounces off of them.



Revisit the Page Keeley Science Probe.

### **Q1 Fill in the blank the correct answer.**

A) A characteristic of matter that can be observed or measured without changing the material is known as a \_\_\_\_\_.

- **Answer:** physical property

B) \_\_\_\_\_ describes how energy, such as electricity or heat, can move through a material.

- **Answer:** Conductivity

c) \_\_\_\_\_ is the ability of a material to be attracted to a magnet.

- **Answer:** Magnetism

D) \_\_\_\_\_ is the way light reflects, or bounces off, an object.

- **Answer:** Reflectivity

E) \_\_\_\_\_ is the ability of matter to dissolve in a liquid.

- **Answer:** Solubility

F) Metals such as iron, silver, and copper are good conductors of \_\_\_\_\_.

- **Answer:** heat and electricity

G) Sugar dissolving in tea is an example of \_\_\_\_\_.

- **Answer:** solubility

H) The ability of an object to attract certain metals, such as iron, is known as \_\_\_\_\_.

- **Answer:** magnetism

I) The way light bounces off a surface is referred to as \_\_\_\_\_.

- **Answer:** reflectivity



J) \_\_\_\_\_ is a physical property that describes how well a material can dissolve in a liquid.

- **Answer:** Solubility

K) Smooth and shiny surfaces, like mirrors and metal pans, tend to have high \_\_\_\_\_.

- **Answer:** reflectivity

L) When sugar is added to tea and disappears, it demonstrates the property of \_\_\_\_\_.

- **Answer:** solubility

M) A material that is not attracted to a magnet likely does not have the property of \_\_\_\_\_.

- **Answer:** magnetism

N) Metals such as copper and silver are known for their high \_\_\_\_\_, which makes them suitable for electrical wiring.

- **Answer:** conductivity

O) The characteristic of a substance that allows it to be observed or measured without changing its composition is called a \_\_\_\_\_.

- **Answer:** physical property

P) Objects with high \_\_\_\_\_ are useful for cooking pans because they can easily conduct heat.

- **Answer:** conductivity

Property	Definition	Example
Conductivity	how energy, such as electricity or heat, can move through a material.	Metals such as copper or silver
Magnetism	The ability of a material to be attracted to a magnet	Metals attracted to the magnet
Reflectivity	The way light reflects, or bounces off, an object.	mirrors reflect light
Solubility	The ability of matter to dissolve in a liquid	Sugar in water
Physical Property	A characteristic of matter that can be observed or measured without changing the material.	Melting Magnetism Conductivity Reflectivity Solubility

### Q2 What is solubility, and give an example of it?

- **Answer:** Solubility is the ability of a substance to dissolve in a liquid. An example is sugar dissolving in tea

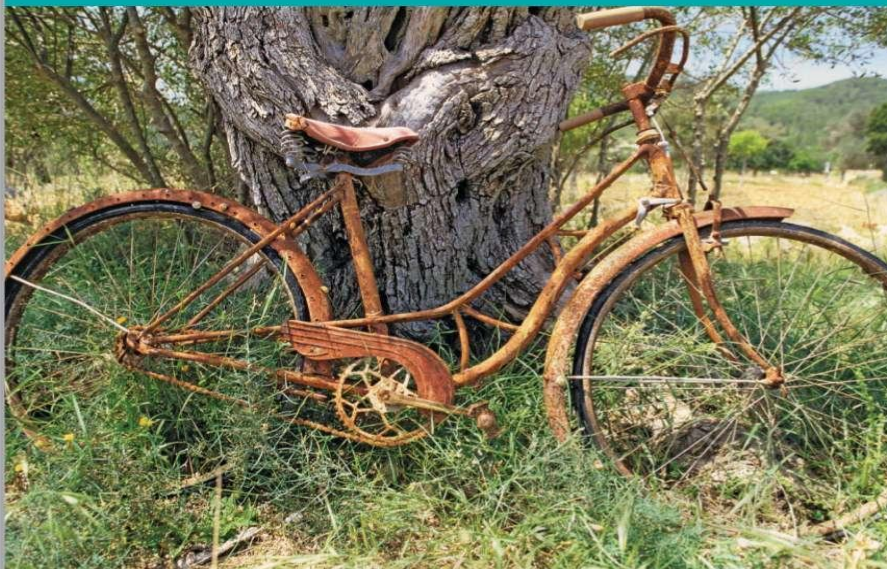
### Q3 Why is it important to understand the physical properties of materials?

- **Answer:** Understanding the physical properties of materials helps us identify them and determine how they can be used in practical applications. For example, knowing that a material is conductive can inform its use in electrical wiring.





## Unit 1 Page 13 / MCQs



### Make Connections

#### Talk About It

Use the lines below to list physical and chemical properties in the photos. Compare lists with your partner.

#### Notes

When wood burns, it undergoes a change. Being able to burn means that the material is combustible. Some matter, such as food products, can change when they are heated or cooked.

Some materials have a chemical property that causes them to react with air. **Some metals will react with air over time and cause it to rust or tarnish.** These processes are also called corrosion.



Revisit the activity *Test Matter's Properties*. Use the information from the text to complete the last column of the data table. With a partner, **identify the properties** that you **observed** for each object. Discuss your reasoning.

### Q1) Circle the correct answer

A) What is the term for a process in which metals react with air over time, causing them to rust or tarnish?

- A) Combustion
- B) Corrosion
- C) Evaporation
- D) Conduction
- **Answer:** B) Corrosion

B) Which property allows wood to burn, resulting in a chemical change?

- A) Reflectivity
- B) Solubility
- C) Combustibility
- D) Conductivity
- **Answer:** C) Combustibility

C) What type of property causes certain materials to change when they are heated or cooked?

- A) Physical property
- B) Chemical property
- C) Magnetic property
- D) Reflective property
- **Answer:** B) Chemical property

D) Which of the following is an example of a **chemical property** described on this picture?

- A) Reflectivity
- B) Magnetism
- C) Rusting of metal
- D) Solubility in water
- **Answer: C) Rusting of metal**




Unit 1 Page 19 / MCQs

**LESSON 2 LAUNCH**

**PAGE KEELEY  
SCIENCE  
PROBES**

### 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?

**Sample answer: Since the mass of the water is 300 grams, adding more mass to the water would increase its mass, even if the salt seems to disappear.**

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

SCIENCE PROBE Lesson 2 Mixtures and Solutions 19

### Q1) Circle the correct answer

A) If a cup of water has a mass of 300 grams and a spoonful of salt with a mass of 10 grams is added to it, what will be the total mass of the saltwater mixture?

- A) More than 300 grams
- B) Less than 300 grams
- C) Exactly 300 grams
- **Answer:** A) More than 300 grams



B) What happens to the salt when it is dissolved in water?

- A) It disappears completely, and its mass no longer adds to the water.
- B) It spreads out evenly in the water, but its mass still adds to the water.
- C) It floats on top of the water, and its mass is separate from the water.
- **Answer:** B) It spreads out evenly in the water, but its mass still adds to the water.

C) The type of the mixture ( Salt + Water ) will be

- Homogenous
- Heterogenous



## Unit 1 Page 25 / Written Questions

A **colloid** is a heterogeneous mixture in which the parts are so small that they do not settle out, like fog. Foam is a colloid that forms when gas bubbles are trapped in a liquid or solid. An example of foam is whipped cream. An aerosol is a colloid where small particles of liquid or solid material are trapped in air. Airborne dust is an example of an aerosol.

Homogeneous mixtures are uniform throughout. A type of homogeneous mixture is a **solution**. Tap water is a homogeneous mixture. It contains dissolved minerals and gases. Sugar water is also an example of a homogeneous mixture. Sugar that is placed in a glass of water dissolves, forming a solution.



A carbonated beverage is a solution of carbon dioxide gas in liquid water under pressure. When the pressure is released, the carbon dioxide gas bubbles out of the solution.

- List different types of mixtures that you see every day or that you have made. Identify the type of each mixture you list.

Example of a Mixture	Type of Mixture
milk and cereal	heterogeneous
hand soap	homogeneous
spray paint	colloid
oil and water	suspension
drink mix and water	solution

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**REVISIT** Revisit the Page Keeley Science Probe.

### Q1 Fill in the blank the correct answer.

A) A \_\_\_\_\_ is a heterogeneous mixture in which the parts are so small that they do not settle out.

- **Answer:** colloid

B) A \_\_\_\_\_ mixture is uniform throughout, meaning its components are evenly distributed.

- **Answer:** homogeneous

C) An aerosol is a type of \_\_\_\_\_, where small particles of liquid or solid material are trapped in air.

- **Answer:** colloid

D) A mixture of oil and water is an example of a \_\_\_\_\_ because the two substances do not mix uniformly.

- **Answer:** suspension

E) When you mix drink powder with water, it forms a \_\_\_\_\_, where the powder dissolves completely in the water.

- **Answer:** solution

Example of Mixture	Type of Mixture
Milk and Cereal	Heterogenous
Hand soap	Homogenous
Carbonated beverage	Homogenous (Solution)
Oil and water	Heterogenous (Suspension)
Aerosol	Heterogenous (Colloid)
Whipped cream	Heterogenous (Colloid)

## VOCABULARY

Look for these words as you read:

moon phases

orbit

revolution

rotation

## Earth in Space

Earth is moving at 30 kilometers/second (19 miles/second) as it orbits the Sun. A **revolution** is a complete pass around the Sun, taking  $365 \frac{1}{4}$  days, or one year. Earth is also spinning on its axis at about 1,600 kilometers/hour (1,000 miles per hour). The dotted line through the center of Earth in the image below is its axis. One **rotation** is a complete spin on the axis. Earth makes one rotation every day or every twenty-four hours. Living things do not feel these movements because they are moving with Earth.

### Earth's Rotation

At any point in time, half of Earth's surface faces the Sun and is in daylight. The other half of Earth's surface faces away from the Sun and is in darkness.

The tilt of Earth's axis affects the length of the day. If the axis were not tilted, day and night would each be twelve hours long. Instead, there are more hours of daylight and fewer hours of darkness during the summer. In the winter, the amount of daylight is shorter.

This diagram shows Earth's rotation and axis. The green arrow represents the direction of Earth's rotation, while the dotted line shows Earth's tilt, or axis.





## Unit 4 Page 28 / Written Questions

### **Q1 Fill in the blank the correct answer.**

A) Earth makes one complete \_\_\_\_\_ every day or every twenty-four hours.

- **Answer:** rotation

B) A \_\_\_\_\_ is a complete pass around the Sun, taking 365  $\frac{1}{4}$  days, or one year.

- **Answer:** revolution

C) The \_\_\_\_\_ of Earth's axis affects the length of the day.

- **Answer:** tilt

D) The other half of Earth's surface faces \_\_\_\_\_ from the Sun and is in darkness.

- **Answer:** away

E) Earth is moving at \_\_\_\_\_ kilometers per second as it orbits the Sun.

- **Answer:** 30

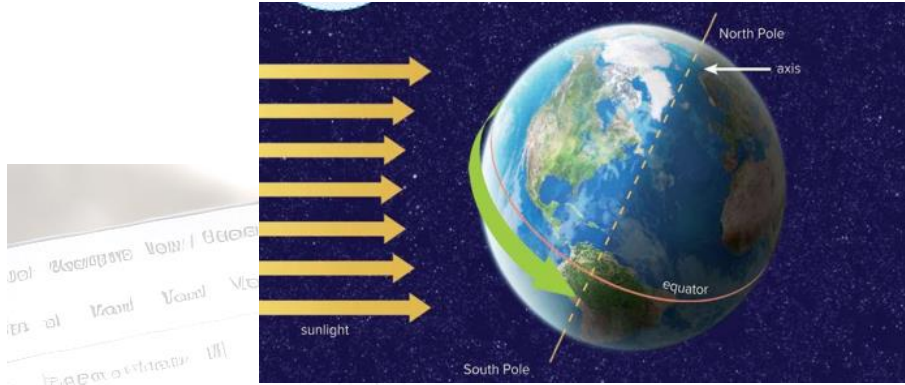
### **2) What is the difference between Earth's rotation and revolution?**

- **Answer:** Earth's rotation is a complete spin on its axis, which takes about 24 hours, resulting in day and night. Earth's revolution is its orbit around the Sun, which takes 365  $\frac{1}{4}$  days or one year.

### **3) How does Earth's tilt affect the length of daylight?**

- **Answer:** The tilt of Earth's axis affects the amount of daylight and darkness throughout the year. During summer, there are more hours of daylight, while in winter, the amount of daylight is shorter.





#### 4) According to the diagram:

The dotted line represents -----

The diagram shows earth's -----

The green arrow represents -----

**Answers:** Axis , Rotation, Direction of the earth's rotation

#### 5) Why do living things on Earth not feel the movements of rotation and revolution?

- **Answer:** Living things do not feel Earth's rotation or revolution because they are moving with Earth.

"النجاح لا يأتي لمن  
ينتظر، بل لمن يعمل  
بجد ويثابر على  
تحقيق أحلامه."



## Unit 1 Page 31 / Written Questions



### 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?

Sample answer: Mixtures are formed from the physical combination of materials such as stirring. They can be separated using different techniques depending on their physical properties. Some examples may include sorting materials by hand, using tools such as a sieve or magnet, or by the process of evaporation.

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### Q1 Fill in the blank the correct answer.

A) Mixtures are formed by the \_\_\_\_\_ combination of materials.

- Answer: physical

B) To separate mixtures, a \_\_\_\_\_ or \_\_\_\_\_ can be used depending on the physical properties of the materials.

- Answer: sieve; magnet

C) A \_\_\_\_\_ is a type of mixture where one substance dissolves in another, forming a homogeneous mixture.

- **Answer:** solution

**Q2 What is the main characteristic that makes cranberry juice a solution?**

- **Answer:** Cranberry juice is a solution because it is a homogeneous mixture where the substances are evenly distributed.

**Q3 What are some methods that can be used to separate mixtures?**

- **Answer:** Mixtures can be separated by sorting, using a sieve or magnet, or by processes like evaporation, depending on their physical properties.

**□ Why is muddy water not considered a solution?**

- **Answer:** Muddy water is not a solution because it is a heterogeneous mixture; the particles are not evenly distributed and can settle over time.

## Unit 1 Page 40 / written Questions

### VOCABULARY

Look for these words as you read:

chemical change

conservation of mass

physical change

## Changes in Matter

Think about the ways the banana was changing. Matter can be changed in many ways. A

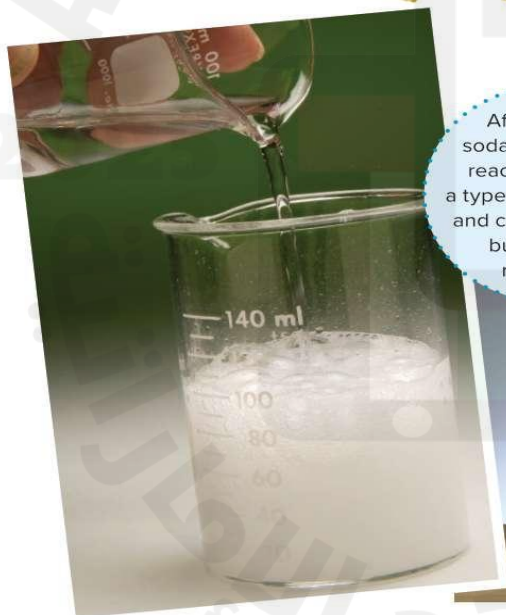
**physical change** begins and ends with the same kind of matter. A

**chemical change**—also called a chemical reaction—is a change that produces new matter with different properties from the original matter. 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 baking soda with vinegar, particles in the baking soda and vinegar link up in new ways. During the chemical change, bubbles form and a solid is left behind. The new substances formed have different properties than the starting materials.

**GO ONLINE** Watch the video *Identifying Chemical Changes* to learn more about how to recognize a chemical change.



The properties of a piece of paper do not change if it is flat or folded into a different shape.



After baking soda and vinegar react, water and a type of salt remain, and carbon dioxide bubbles are released.



### **Q1 What is the difference between a physical change and a chemical change?**

- **Answer:** A physical change involves a change in the form or appearance of a substance but does not produce a new substance, while a chemical change results in the formation of new substances with different properties from the original material.

### **Q2 What does the law of conservation of mass state?**

- **Answer:** matter is neither created nor destroyed during a physical change or a chemical reaction. The mass of the products = mass of the reactants.

### **Q3 What happens when baking soda reacts with vinegar, as shown in the photo?**

- **Answer** a chemical reaction occurs that releases carbon dioxide bubbles, produces water, and leaves a type of salt as a residue.



### **Q4 Fill in the blank with the correct item**

A) A \_\_\_\_\_ change does not produce a new substance, while a \_\_\_\_\_ change creates new substances with different properties.

- **Answer:** physical; chemical

B) According to the law of \_\_\_\_\_, matter cannot be created or destroyed in a physical or chemical change.

- **Answer:** conservation of mass

C) When vinegar and baking soda react, \_\_\_\_\_ gas is released, creating bubbles.

- **Answer:** carbon dioxide



### Q1) Circle the correct answer

A) What is an example of a physical change involving temperature?

- A) Burning wood
- B) Rust forming on metal
- C) Water freezing
- D) Antacid tablets releasing bubbles
- **Answer:** C) Water freezing

B) Which of the following indicates a chemical change has occurred?

- A) A solid melting into a liquid
- B) Formation of bubbles when antacid tablets are dropped in water
- C) Water boiling
- D) Ice melting
- **Answer:** B) Formation of bubbles when antacid tablets are dropped in water

C) What is one of the effects of a chemical change in wood when it burns?

- A) It becomes colder
- B) It changes color and gives off light
- C) It melts into a liquid
- D) It forms ice
- **Answer:** B) It changes color and gives off light

D) What type of change causes soap scum to form?

- A) Physical change
- B) Chemical change
- C) Temperature change only

- D) Gas formation
- **Answer:** B) Chemical change

E) Why are bubbles in soda not considered a result of a chemical change?

- A) They do not contain any gas
- B) They are caused by freezing
- C) They are due to dissolved gas, not a chemical reaction
- D) They form only in hot water
- **Answer:** C) They are due to dissolved gas, not a chemical reaction

F) Which of the following is a sign that a chemical change has taken place?

- A) A change in temperature
- B) A change in shape
- C) Evaporation of water
- D) Dissolving sugar in water
- **Answer:** A) A change in temperature

G) What causes matter to become warm or give off light in some chemical reactions?

- A) Conservation of mass
- B) Physical changes
- C) Release of energy
- D) Freezing of water
- **Answer:** C) Release of energy

كل ما نحتاجه للنجاح موجود بداخلنا  
علينا فقط البحث عنه





## Unit 1 Page 59 / MCQS

### Model Matter

You have learned about the three main states of matter and how the organization of their particles affects how they behave.



Choose an object for each of the three states of matter. Draw each object. Use unit cubes to **develop and use a model** to show **the scale** of the volume and number of particles in the object and how the particles in each object are organized. Add this information to your drawings. Below each model, describe how the arrangement of the particles determines the properties of each of the objects.

Solid	Liquid	Gas
Students can draw any object that is a solid. In their drawing, they can add that the particles in the solid are packed tightly together.	Students can draw any object that is a liquid. In their drawing, they can add that the particles in the liquid are loosely packed together and move past one another.	Students can draw any object that is a gas. In their drawing, they can add that the particles in the gas are very far apart from each other and move rapidly.

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### Q1) Circle the correct answer

A) Which of the following best describes the arrangement of particles in a solid?

- A) Particles are packed tightly together and vibrate in place.
- B) Particles are loosely packed and move past each other.
- C) Particles are very far apart and move rapidly.
- D) Particles are constantly changing places.

- **Answer:** A) Particles are packed tightly together and vibrate in place.

B) How do particles in a liquid behave compared to particles in a solid?

- A) They are tightly packed and cannot move.
- B) They are very far apart and move rapidly.
- C) They are loosely packed and can move past each other.
- D) They are fixed in one position.

- **Answer:** C) They are loosely packed and can move past each other.

C) In which state of matter are particles the most spread out?

- A) Solid
- B) Liquid
- C) Gas
- D) Plasma

- **Answer:** C) Gas

D) What effect does the arrangement of particles in a gas have on its properties?

- A) The particles are tightly packed, making it incompressible.



- B) The particles are loosely packed, allowing it to take the shape of its container.
- C) The particles are very far apart, allowing it to expand and fill any space.
- D) The particles are fixed in one place, giving it a definite shape.
- **Answer: C)** The particles are very far apart, allowing it to expand and fill any space.

E) Which statement is true about the particle movement in a liquid?

- A) Particles are fixed in a rigid structure.
- B) Particles are far apart and move very quickly.
- C) Particles are loosely packed and can slide past each other.
- D) Particles cannot move at all.
- **Answer: C)** Particles are loosely packed and can slide past each other.

F) In which state of matter are particles packed very tightly together?

- A) Liquid
- B) Gas
- C) Solid
- D) Plasma
- **Answer: C)** Solid

G) What is the state of matter where particles are far apart and move very quickly?

- A) Solid
- B) Liquid
- C) Gas



- D) Ice
- **Answer:** C) Gas

H) Which state of matter can change its shape to fit the container?

- A) Solid
- B) Liquid
- C) Gas
- D) Both liquid and gas
- **Answer:** D) Both liquid and gas

I) In which state do particles slide past one another but stay close together?

- A) Solid
- B) Liquid
- C) Gas
- D) Plasma
- **Answer:** B) Liquid

J) Which state of matter has a fixed shape and volume?

- A) Solid
- B) Liquid
- C) Gas
- D) Steam
- **Answer:** A) Solid

## Unit 2 Page 13/ MCQS ( Very important)

The Moon, Earth's closest neighbor, is greatly affected by Earth's gravity. Moons orbit planets for the same reason that planets orbit the Sun—because of gravitational attraction.

**GO ONLINE** Watch the video *Tides* to help you understand more about how the Moon affects oceans.

The Moon has less mass than Earth, so the Moon's gravitational pull is weaker. In fact, the Moon's gravity is about one sixth of Earth's gravity. Think about how high you can throw a ball on Earth. On the Moon, you could throw it about six times higher because the force of gravity is not as strong.

Earth's gravity affects the Moon. The Moon's gravity also affects Earth. The Moon's gravitational force causes Earth's **tides**, or the regular rise and fall of water along the shore. Earth's water bulges on the Moon-facing side of Earth. A bulge also forms on the side facing away from the Moon. The water level rises where the bulge is and the level lowers where it is not. This bulge of water causes changing tides as the Moon travels around the Earth.

**MATH Connection** The Moon's gravity is  $\frac{1}{6}$  that of Earth. If an astronaut weighs 79 kilograms (175 pounds) and his space suit weighs 50 kilograms (110 pounds), how much would the astronaut and his suit weigh on the Moon?

**21.5 kilograms (47  $\frac{1}{2}$  pounds)**

### PRIMARY SOURCE

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In this photo, Astronaut Buzz Aldrin sets up an experiment on the Moon. Astronauts study the effects of gravity on Earth as well as in space.



## Q1) Circle the correct answer

A) **What is the main reason that planets and moons stay in orbit?**

- A) Magnetic attraction
- B) Gravitational attraction
- C) Electrical force
- D) Wind force
- **Answer:** B) Gravitational attraction

B) **How does the Moon's gravity compare to Earth's gravity?**

- A) The Moon's gravity is the same as Earth's.
- B) The Moon's gravity is stronger than Earth's.
- C) The Moon's gravity is about one sixth of Earth's.
- D) The Moon's gravity is twice as strong as Earth's.
- **Answer:** C) The Moon's gravity is about one sixth of Earth's.

C) **What would happen to a ball thrown on the Moon compared to on Earth?**

- A) It would fall back faster on the Moon.
- B) It would not move at all on the Moon.
- C) It would go about six times higher on the Moon.
- D) It would go lower on the Moon.
- **Answer:** C) It would go about six times higher on the Moon.

D) **What natural phenomenon on Earth is influenced by the Moon's gravity?**

- A) Seasons
- B) Earthquakes



- C) Tides
- D) Wind
- **Answer:** C) Tides

E) **Where does a bulge in Earth's water occur due to the Moon's gravitational pull?**

- A) Only on the side facing the Moon
- B) Only on the side away from the Moon
- C) On both the Moon-facing and opposite sides
- D) Around the equator only
- **Answer:** C) On both the Moon-facing and opposite sides

F) **If an astronaut weighs 79 kg on Earth, approximately how much would they weigh on the Moon?**

- A) 13.2 kg
- B) 47.5 kg
- C) 21.5 kg
- D) 79 kg
- **Answer:** C) 21.5 kg

G) **What causes the regular rise and fall of water along the shore?**

- A) Earth's rotation
- B) Wind currents
- C) Earth's gravity
- D) The Moon's gravitational force
- **Answer:** D) The Moon's gravitational force

H) What force keeps planets and moons in orbit?

- A) Wind
- B) Gravity
- C) Light
- D) Magnetism
- **Answer:** B) Gravity

I) How strong is the Moon's gravity compared to Earth's?

- A) Same as Earth's
- B) One half of Earth's
- C) One sixth of Earth's
- D) Twice as strong as Earth's
- **Answer:** C) One sixth of Earth's

J) What effect does the Moon's gravity have on Earth?

- A) It creates tides in the oceans.
- B) It changes Earth's temperature.
- C) It makes Earth spin faster.
- D) It causes earthquakes.
- **Answer:** A) It creates tides in the oceans.

K) Where does the water on Earth bulge because of the Moon's gravity?

- A) Only on one side
- B) Both the side facing the Moon and the opposite side



- C) Around the equator
- D) Only at the poles
- **Answer:** B) Both the side facing the Moon and the opposite side

**K) What does "tides" refer to?**

- A) The Sun's heat on Earth
- B) The movement of ocean water caused by the Moon's gravity
- C) Earth's rotation speed
- D) Movement of Earth's tectonic plates
- **Answer:** B) The movement of ocean water caused by the Moon's gravity

**L) What happens to water levels on Earth as the Moon moves around it?**

- A) They stay the same.
- B) They rise and fall, creating tides.
- C) They freeze.
- D) They evaporate.
- **Answer:** B) They rise and fall, creating tides.



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## Unit 2 Page 13/ MCQS

# Meteors and Meteorites

Objects other than the Sun and planets are found in our solar system. Sometimes, Earth's gravity will pull these objects into Earth's atmosphere.

**Meteors** You may have heard meteors be called shooting stars but a meteor is not a star at all.

A **meteor** is a space rock that enters Earth's atmosphere. It appears as a bright streak in the sky. If a meteor does not break apart and burn up in the atmosphere, it can hit Earth's surface.

**Meteorites** A meteor that strikes Earth's surface is called a **meteorite**. Many places on Earth, like the Barringer Crater on the page, show evidence of meteorite impacts.



### PRIMARY SOURCE



This is a map of the Moon's surface made by NASA. It was used to help astronauts prepare for the *Apollo 10* mission. As you can see, there are many craters. These craters were caused by meteoroids hitting the Moon's surface. *Meteoroids* are small rocky objects that orbit the Sun.

## Q1) Circle the correct answer

### 1. What is a meteor?

- A) A type of star in the sky
- B) A space rock that enters Earth's atmosphere
- C) A planet orbiting Earth
- D) A comet that passes by Earth
- Answer: B) A space rock that enters Earth's atmosphere**

### 2. What forms when meteorites hits the earth surface?

- A) Falling star
- B) Sunburst
- C) Planet fragment
- D) Crater
- Answer: D) Crater**

### 3. What happens to a meteor if it does not burn up in Earth's atmosphere?

- A) It forms a star
- B) It hits Earth's surface and becomes a meteorite
- C) It turns into a comet
- D) It stays in orbit around Earth
- Answer: B) It hits Earth's surface and becomes a meteorite**

### 4. What are meteoroids?

- A) Small rocky objects that orbit the Sun
- B) Stars that move quickly across the sky
- C) Large planets in the solar system



- D) Clouds of dust around Earth
- **Answer:** A) Small rocky objects that orbit the Sun

5. Which famous crater on Earth was formed by a meteorite impact?

- A) Sea of Serenity
- B) Barringer Crater
- C) Sea of Fertility
- D) Sea of Nectar
- **Answer:** B) Barringer Crater

6. What does the photo show?

- A) Meteors
- B) Crater
- C) Fireworks
- D) B+C
- **Answer:** A) Meteors

## Unit 2 Page 15 / MCQS

# Seasons

As Earth revolves around the Sun, the tilted axis always points in the same direction. When the Northern Hemisphere tilts away from the Sun, the Northern Hemisphere's surface does not receive as much energy, and temperatures are lower. In the Northern Hemisphere, this is winter.

At the same time, it is summer in the Southern Hemisphere. The Southern Hemisphere tilts toward the Sun, so Sun's energy is more concentrated. The surface receives more energy, and temperatures are warmer.

Because the tilt of Earth's axis always points in the same direction, the seasons in the Northern Hemisphere and the Southern Hemisphere are always opposite. In spring and autumn, both hemispheres receive equal warmth from the Sun, making temperatures similar in both hemispheres.



Winter  
about December 21–March 20



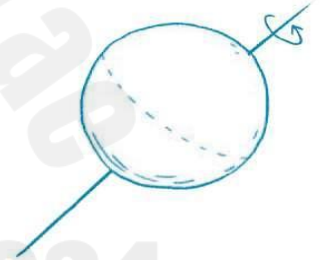
Spring  
about March 20–June 21



Summer  
about June 21–September 22



Autumn  
about September 22–December 21



### 1. Why does the Northern Hemisphere experience winter when it is tilted away from the Sun?

- **Answer** it receives less concentrated energy and sunlight, leading to lower temperatures and the season of winter.

### 2. What causes the Southern Hemisphere to have summer at the same time the Northern Hemisphere has winter?

- **Answer:** The Southern Hemisphere is tilted toward the Sun when the Northern Hemisphere is tilted away, so it receives more direct sunlight and energy, resulting in warmer temperatures and summer.

### 3. How do the tilt of Earth's axis and its revolution around the Sun create the seasons?

- **Answer:** Earth's axis is tilted, so as it revolves around the Sun, different parts of Earth receive varying amounts of sunlight and energy, which causes seasonal changes. When a hemisphere is tilted toward the Sun, it experiences warmer temperatures and summer; when tilted away, it experiences colder temperatures and winter.

### 4. In which months do spring and autumn typically occur in the Northern Hemisphere?

- **Answer:** Spring usually occurs from about March 20 to June 21, and autumn occurs from about September 22 to December 21.

### 5. Looking at the diagram of the seasons, how does the position of Earth's axis affect the distribution of sunlight across the hemispheres?

- **Answer:** The tilt of Earth's axis causes one hemisphere to tilt toward the Sun while the other tilts away. This difference in orientation affects how much sunlight each hemisphere receives, creating opposite seasons in the Northern and Southern Hemispheres.

## Unit 4 Page 32 /Written\_MCQs

### Earth's Revolution—Seasons and the Sun

The Sun's position in the sky appears to change from season to season. Although the Sun does not move, the diagram below shows the Sun's apparent path across the sky during the day as Earth rotates. Each yellow circle represents the Sun's position at midday. The Sun rises much higher in the sky during a summer day. The day on which the Sun appears highest in the sky is known as the summer solstice. In the Northern Hemisphere, the summer solstice occurs around June 21 each year. During this time of year, the Northern Hemisphere tilts more toward the Sun.

In winter, the Sun appears much lower in the sky. In the Northern Hemisphere, the winter solstice occurs around December 21. This is the day on which the Sun appears lowest in the sky. At this time, the Northern Hemisphere tilts away from the Sun.

Halfway between the solstices, neither hemisphere is tilted toward the Sun. The noon Sun is almost directly overhead. Each of these days is known as an equinox. During an equinox, day and night are each about twelve hours long. In the Northern Hemisphere, the spring, or vernal, equinox occurs around March 21. The fall, or autumnal, equinox occurs around September 22.

**GO ONLINE** Explore *Daylight and Seasons* to analyze data of the amount of daylight throughout the year.

### Apparent Path of the Sun

Label the season in which the Sun follows each path.





### Q1) Circle the correct answer

1) What causes the Sun to appear at different heights in the sky during different seasons?

- A) Earth's rotation on its axis
- B) Earth's revolution around the Sun
- C) Changes in the Sun's position
- D) Earth's orbit speed
- Answer: B) Earth's revolution around the Sun**

2) When does the summer solstice occur in the Northern Hemisphere?

- A) Around March 21
- B) Around June 21
- C) Around September 22
- D) Around December 21
- Answer: B) Around June 21**

3) During which season in the Northern Hemisphere is the Sun's path lowest in the sky?

- A) Spring
- B) Summer
- C) Fall
- D) Winter
- Answer: D) Winter**

4) What is an equinox?

- A) The day with the longest daylight hours
- B) The day when the Sun appears highest in the sky





- C) A day when day and night are nearly equal in length
- D) A day when the Sun does not rise
- **Answer:** C) A day when day and night are nearly equal in length

5) **When does the autumnal equinox usually occur in the Northern Hemisphere?**

- A) Around March 21
- B) Around June 21
- C) Around September 22
- D) Around December 21
- **Answer:** C) Around September 22

6) **Why is it warmer in the Northern Hemisphere during the summer solstice?**

- A) The Sun is closer to Earth.
- B) The Northern Hemisphere is tilted toward the Sun.
- C) Earth rotates faster during this time.
- D) There are no clouds to block the Sun.
- **Answer:** B) The Northern Hemisphere is tilted toward the Sun.

7) **What is the name for the day in winter when the Sun appears lowest in the sky in the Northern Hemisphere?**

- A) Spring equinox
- B) Autumnal equinox
- C) Winter solstice
- D) Summer solstice
- **Answer:** C) Winter solstice

## **2) Explain why the Sun appears at different heights in the sky during different seasons.**

- **Answer:** because of Earth's tilt and its revolution around the Sun. As Earth orbits, different parts of it are tilted toward or away from the Sun, changing the angle and height of the Sun's path in the sky.

## **3) Describe the summer solstice in the Northern Hemisphere.**

- **Answer:** occurs around June 21, when the Sun appears highest in the sky. This is the longest day of the year, and the Northern Hemisphere tilts more toward the Sun.

## **4) What happens during the winter solstice in the Northern Hemisphere?**

- **Answer:** occurs around December 21, the Sun appears lowest in the sky. This is the shortest day of the year, the Northern Hemisphere tilts away from the Sun.

## **5) According to the diagram, how does the Sun's path vary between summer, winter, and the equinoxes?**

- **Answer:** In the summer, the Sun follows a higher path, appearing higher in the sky. During winter, the Sun's path is lower, appearing lower in the sky. At the equinoxes, the Sun's path is in between, with day and night being almost equal.

## **6) Why does the Northern Hemisphere experience opposite seasons to the Southern Hemisphere?**

- **Answer:** because of Earth's tilt. When the Northern Hemisphere is tilted toward the Sun, it experiences summer, while the Southern Hemisphere, tilted away from the Sun, experiences winter, and vice versa.

Feature	Summer solstice	Winter solstice	Fall and spring equinox
Date (Northern Hemisphere)	Around June 21	Around December 21	Spring Equinox: Around March 21 Autumnal Equinox: Around September 22
Sun's Position in the Sky	Highest in the sky	Lowest in the sky	Midpoint between summer and winter positions
Length of Day and Night	Longest day, shortest night	Shortest day, longest night	Day and night are nearly equal in length
Tilt of Earth's Axis	tilted toward the Sun	Tilted away from the Sun	Neither hemisphere is tilted toward or away from the Sun



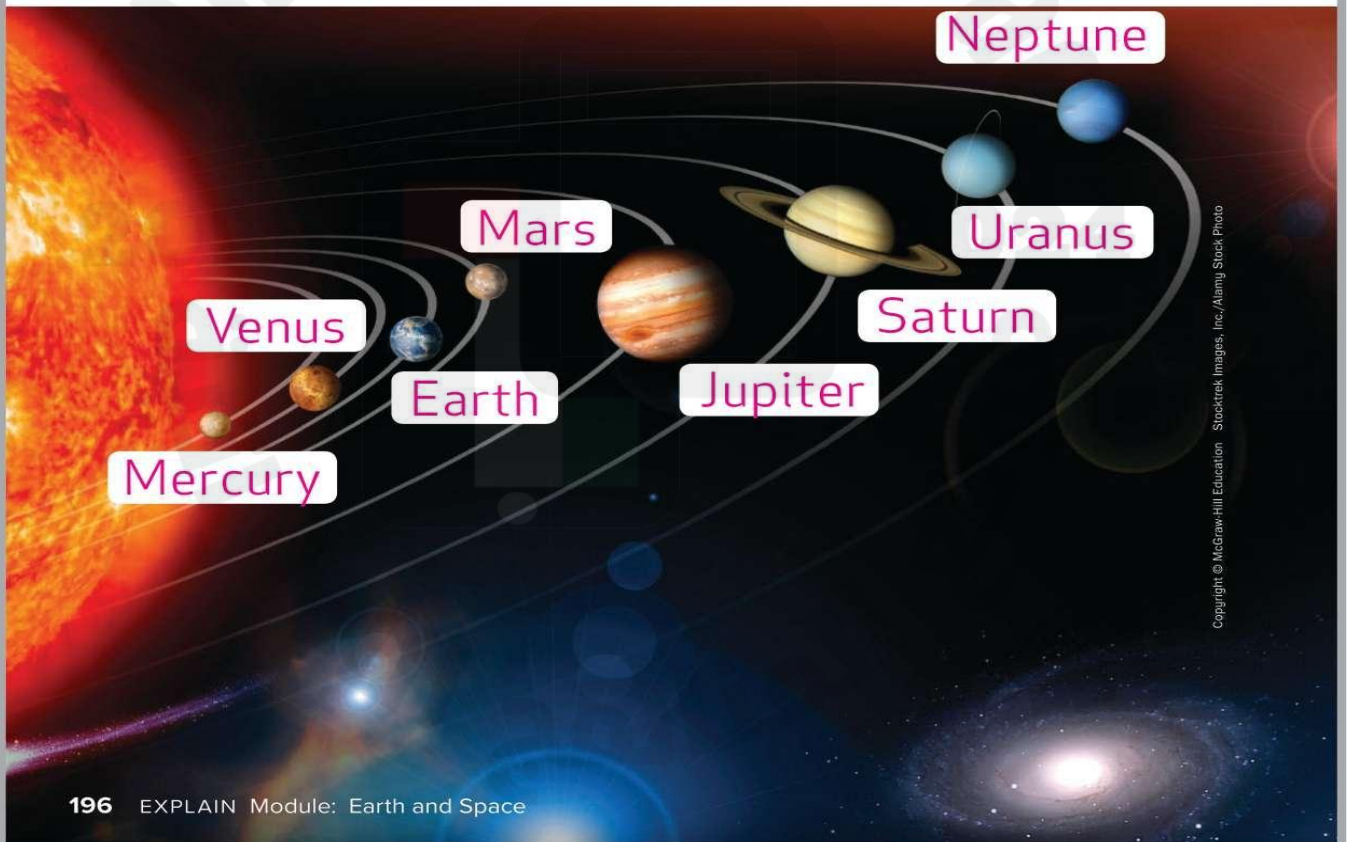
## Unite 4 Page 60/MCQS

### 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.

**Planets of the Solar System** From nearest to farthest from the Sun, the planets in our solar system are Mercury, Venus, Earth, and Mars, or the inner planets. Next are Jupiter, Saturn, Uranus, and Neptune, or the outer planets. The planets revolve in elliptical, or nearly circular, orbits around the Sun. Several planets are visible in the night sky from Earth from time to time, even without a telescope. Visible planets include Mercury, Venus, Mars, Jupiter, and Saturn. Planets do not make their own light, but reflect the light from the Sun.

Between the inner and outer planets is a belt of space rocks called asteroids. These are rocky or metallic objects that also orbit the Sun within the solar system.





## Q1 Circle the correct answer

### 1) What is a planet?

- A) A small rock in space
- B) A large, round object in space that orbits a star
- C) A star that produces its own light
- D) A satellite that orbits the Earth
- **Answer:** B) A large, round object in space that orbits a star

### 2) Which planet is closest to the Sun?

- A) Earth
- B) Venus
- C) Mars
- D) Mercury
- **Answer:** D) Mercury

### 3) Which of the following planets is farthest from the Sun?

- A) Jupiter
- B) Saturn
- C) Neptune
- D) Uranus
- **Answer:** C) Neptune

### 4) Which planets are known as the inner planets?

- A) Mercury, Venus, Earth, and Mars
- B) Jupiter, Saturn, Uranus, and Neptune
- C) Venus, Earth, Mars, and Jupiter



- D) Earth, Mars, Saturn, and Uranus
- **Answer:** A) Mercury, Venus, Earth, and Mars

5) What is located between the inner and outer planets?

- A) A belt of comets
- B) A belt of asteroids
- C) A ring of moons
- D) A field of gas clouds
- **Answer:** B) A belt of asteroids

6) Which planets are visible in the night sky without a telescope?

- A) Only Mercury and Venus
- B) Mercury, Venus, Mars, Jupiter, and Saturn
- C) Jupiter, Saturn, Uranus, and Neptune
- D) Mars, Jupiter, Saturn, and Neptune
- **Answer:** B) Mercury, Venus, Mars, Jupiter, and Saturn

7) Which planet is third from the Sun?

- A) Earth
- B) Mars
- C) Jupiter
- D) Saturn
- **Answer:** C) Earth

8) What shape are the orbits of the planets in the solar system?

- A) Circular
- B) Square



- C) Triangular
- D) Elliptical or nearly circular
- **Answer:** D) Elliptical or nearly circular

9) Which planet is known for its prominent rings?

- A) Jupiter
- B) Saturn
- C) Uranus
- D) Neptune
- **Answer:** B) Saturn

10) What do planets reflect to make them visible in the night sky?

- A) Their own light
- B) Light from the Sun
- C) Light from other stars
- D) Light from the Moon
- **Answer:** B) Light from the Sun

11) What galaxy is our solar system located in?

- A) Andromeda Galaxy
- B) Milky Way Galaxy
- C) Whirlpool Galaxy
- D) Sombrero Galaxy
- **Answer:** B) Milky Way Galaxy

12) Which planet is known as the "Red Planet"?

- A) Mercury



- B) Earth
- C) Mars
- D) Jupiter

• **Answer:** C) Mars

13) Which of the following is NOT a planet in our solar system?

- A) Venus
- B) Pluto
- C) Neptune
- D) Saturn

• **Answer:** B) Pluto

14) What are asteroids?

- A) Large planets in the outer solar system
- B) Rocky or metallic objects that orbit the Sun
- C) Small stars within the Milky Way
- D) Frozen ice bodies in the solar system
- **Answer:** B) Rocky or metallic objects that orbit the Sun

15) How many planets in our solar system are classified as outer planets?

- A) 2
- B) 3
- C) 4
- D) 5
- **Answer:** C) 4 (Jupiter, Saturn, Uranus, and Neptune)

**Best wishes**