

تم تحميل هذا الملف من موقع المناهج الإماراتية



أسئلة مراجعة وفق الهيكل الوزاري القسم الإلكتروني منهج انسابير

موقع المناهج ← المناهج الإماراتية ← الصف الرابع ← علوم ← الفصل الأول ← اختبارات الكترونية ← الملف

تاريخ إضافة الملف على موقع المناهج: 2024-11-21 22:05:54

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

المزيد من مادة
علوم:

التواصل الاجتماعي بحسب الصف الرابع



الرياضيات



اللغة الانجليزية



اللغة العربية



التربية الاسلامية



المواد على تلغرام

صفحة المناهج
الإماراتية على
فيسبوك

المزيد من الملفات بحسب الصف الرابع والمادة علوم في الفصل الأول

حل نموذج أسئلة الامتحان التجريبي منهج بريدج

1

نموذج أسئلة الامتحان التجريبي نهاية الفصل منهج بريدج

2

نموذج أسئلة الامتحان التجريبي منهج بريدج

3

حل الكراسة التدريبية للاختبار النهائي وفق الهيكل الوزاري

4

الكراسة التدريبية للاختبار النهائي وفق الهيكل الوزاري

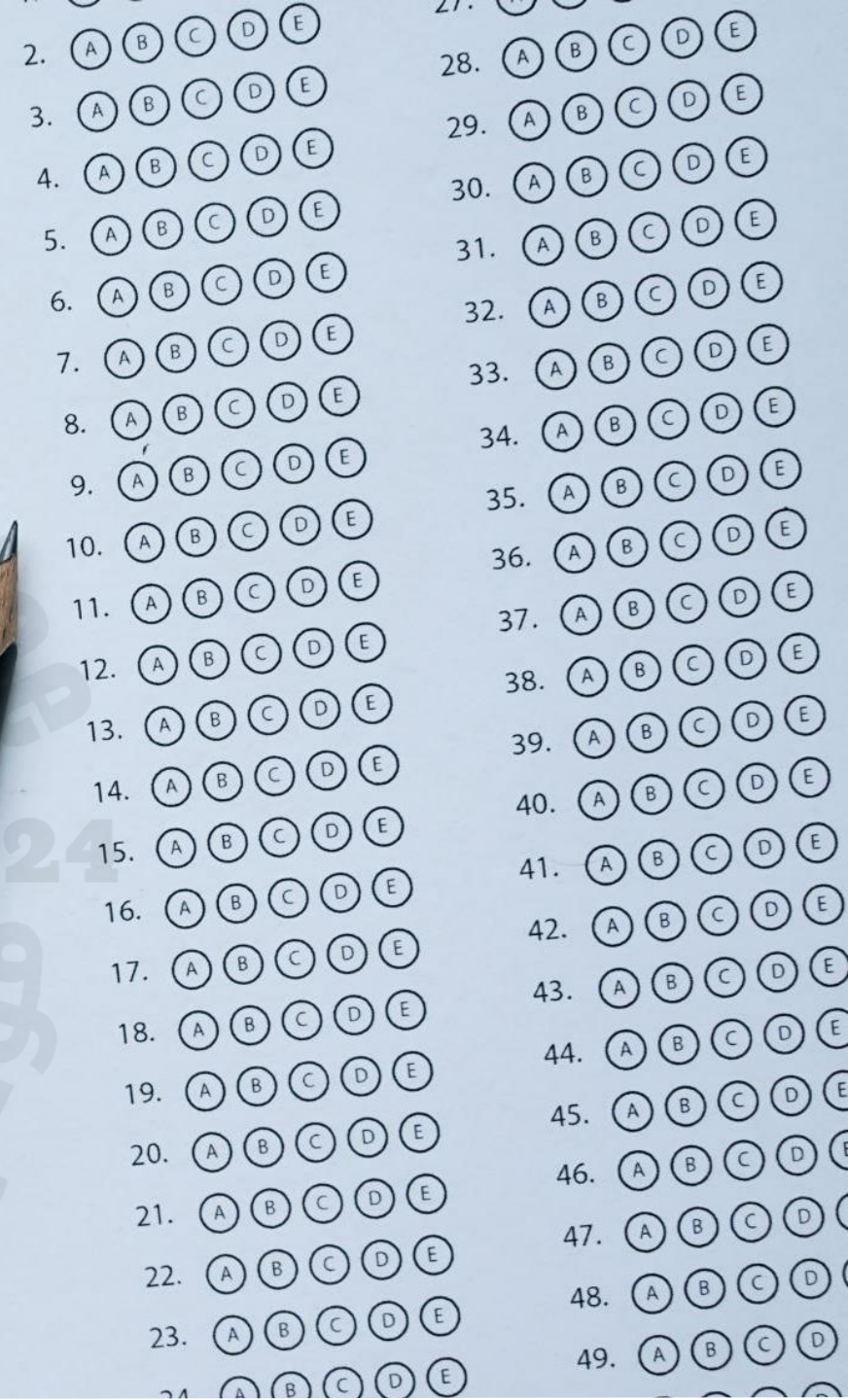
5

Final revision for grade 4
2024-2025

MCQ PART

Altaqqadom school

BY : Amal Gamal



Structure of Exam

Number of MCQ عدد الأسئلة الموضوعية	15
Marks of MCQ درجة الأسئلة الموضوعية	60
Number of FRQ عدد الأسئلة المقالية	5
Marks per FRQ الدرجات للأسئلة المقالية	40

VOCABULARY

Look for these words as you read:

continent

earthquake

landform

latitude

longitude

plate

topographic map

volcano

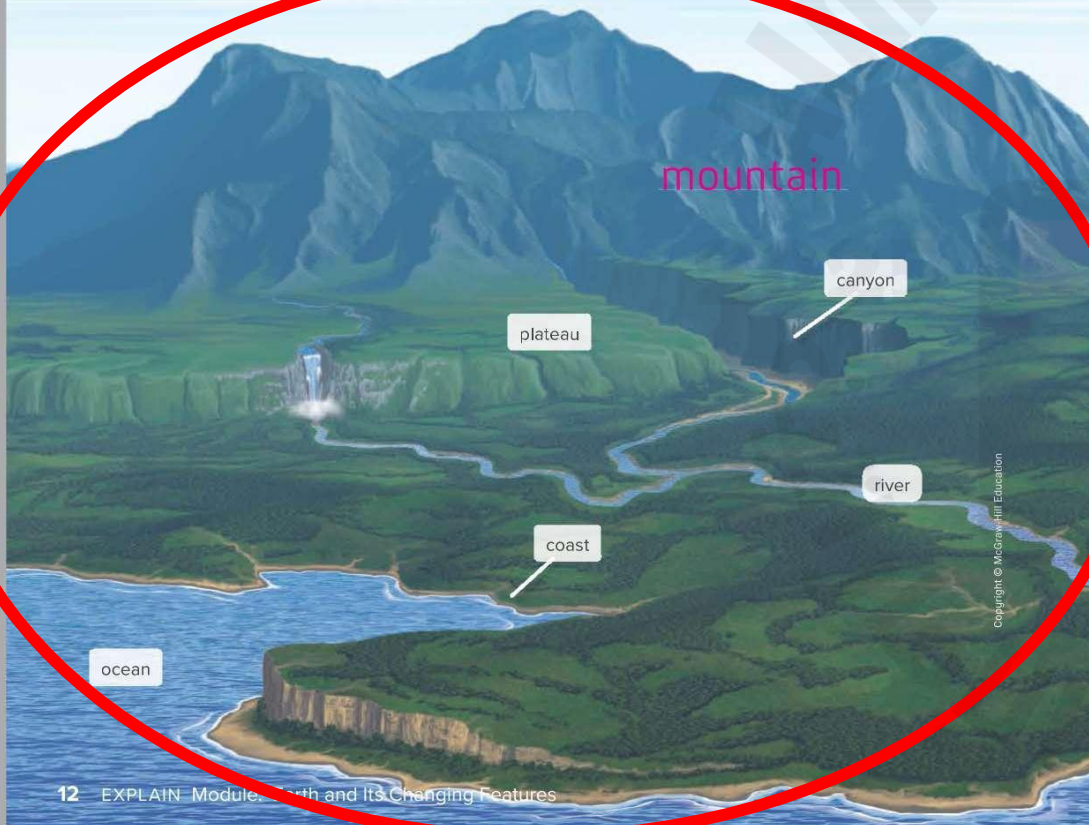
Landforms

In the Inquiry Activity, *Map California's Features*, you represented different landforms on a three-dimensional map. A **landform** is a physical feature on Earth's surface. Landforms vary greatly in shape and size. They include features such as level plains, rounded hills, and jagged mountains. Each landform has specific characteristics and is formed in a specific way.

Label a Diagram: Earth's Land and Water Features

Use the labels on the image below and descriptions on the next page to learn more about common landforms. Fill in the missing labels using the descriptions.

GO ONLINE Watch the video *Landforms* to see various landforms around the world.



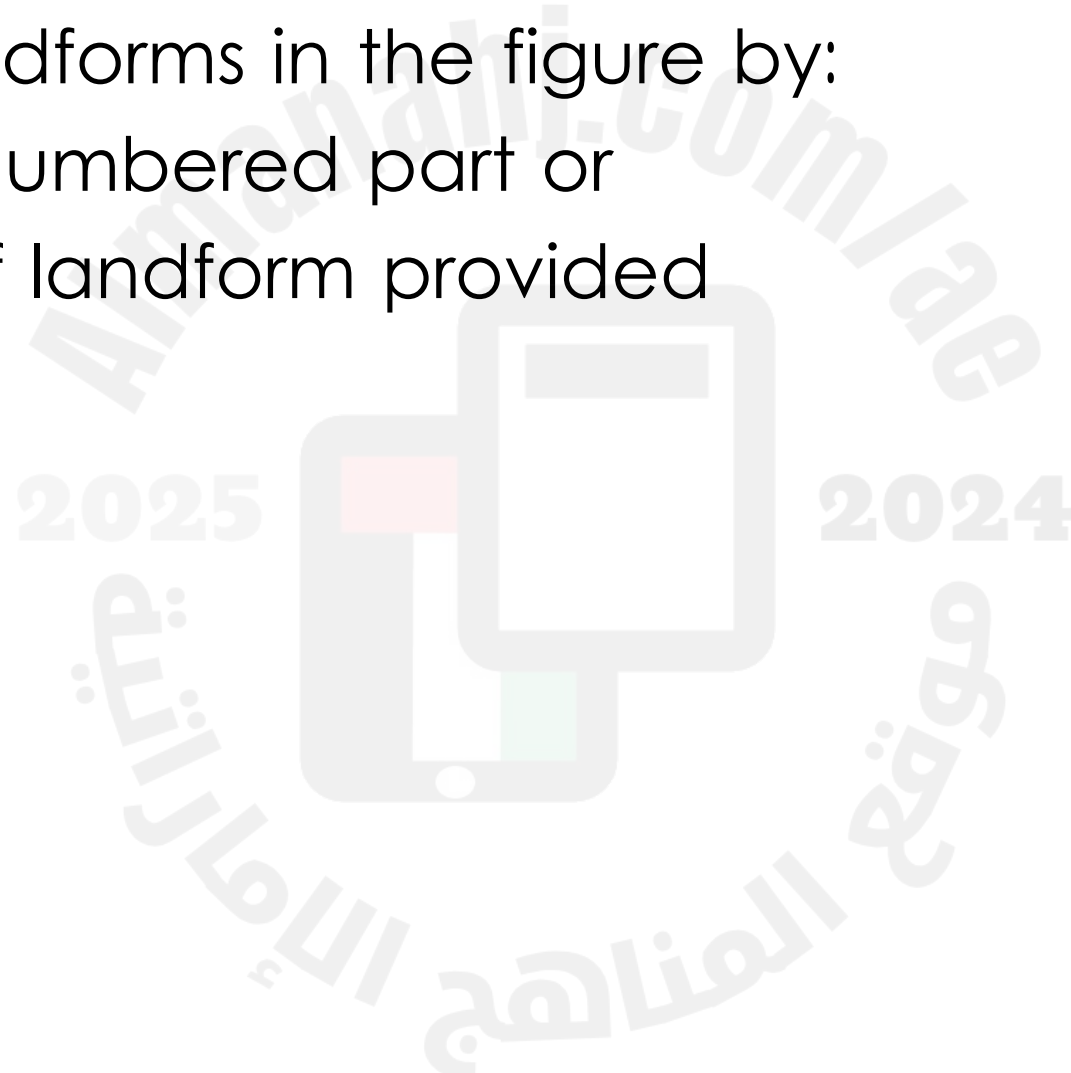
Q1: Figure 12 Page 12 U3M1L1

4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features

Possible questions from page 12

Identify the landforms in the figure by:

- Naming the numbered part or
- Description of landform provided



1.



Which of the following letters represents the river feature in the figure below?

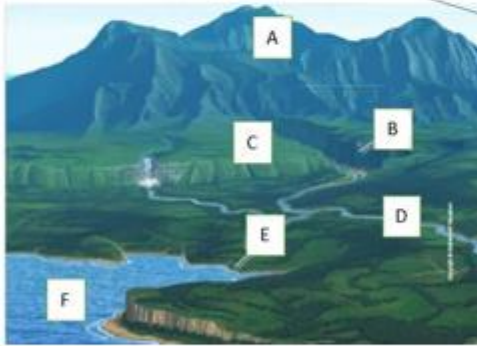
A

B

C

D

2.



Which of the following letters represents the mountain feature in the figure below?

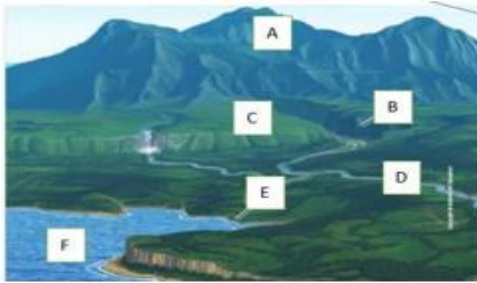
A

B

C

D

3.

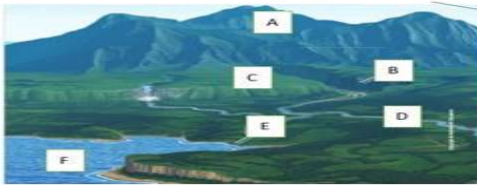


Which of the following letters represents the canyon feature in the figure below?

A B

C D

4.

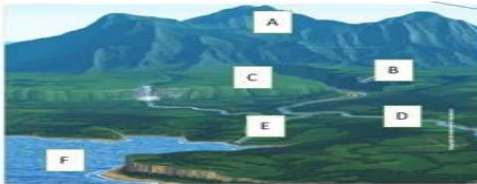


Which of the following letters represents the ocean feature in the figure below?

A B

C E

5.



Which of the following letters represents the plateau feature in the figure below?

A B

C E

B C

D E

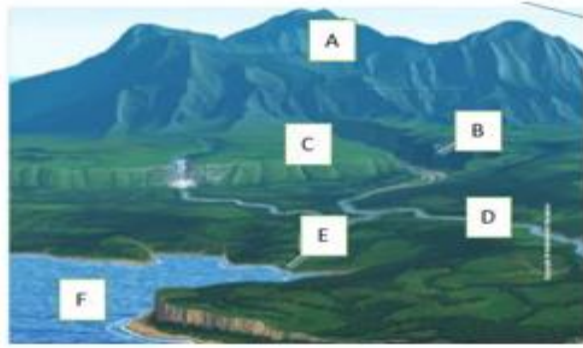
B C

D F

B C

D F

6.



Which of the following letters represents the coast feature in the figure below?

A

B

B

C

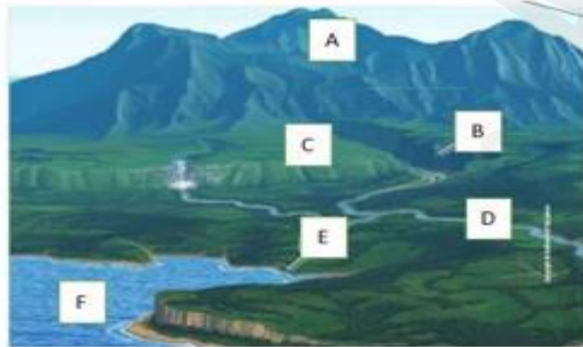
C

E

D

F

7.



Plateaus, valleys, canyons and mountains are all examples of _____.

A

highlands

B

mantle areas

C

landforms

D

hydrosphere

Question	3	3	السؤال
Which of the following letters represents the delta feature in the map below?			
A		A	
B		B	
C		C	
D		D	

Question	21	21	السؤال
***** BONUS ***** Which of the following is a large body of salt water?			
A		A mountain	
B		A canyon	
C		A plain	
D		A beach	

Question

2

2

السؤال

Which of the following is a wide flat area?

A

A mountain

B

A canyon

C

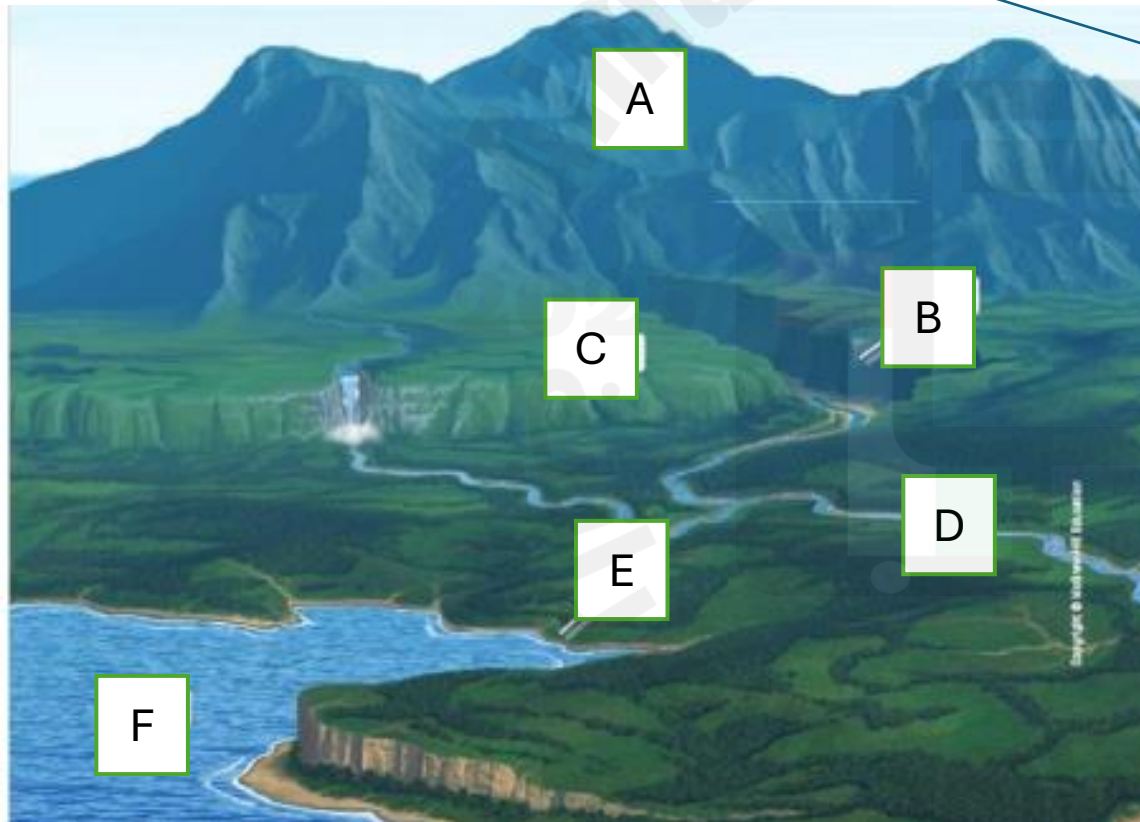
A plain

D

A beach

Possible questions from page 12

- What is a landform? What Letter shows this feature?



River
Coast
Plateau
Mountain
Ocean
Canyon

Most of the ocean floor is flat and without features. An abyssal plain is a very flat area of the deep ocean floor. These plains cover about 60 percent of the Earth's surface.

GO ONLINE Watch the video *Ocean Floor* to learn more about these features.

Long mountain ranges stretch through the middle of some oceans. These mountain ranges are called *mid-ocean ridges*. The valley down the center of a mid-ocean ridge is called a *rift valley*.

Other ocean floor features include trenches and seamounts. *Trenches* are the deepest parts of the ocean floor. They are usually long and narrow. A *seamount* is an underwater mountain that rises from the ocean floor but stops before it reaches the surface of the ocean.

Scientists can tell the depth of the ocean floor by sending sounds and waiting for the echo to come back. They also use underwater vehicles to study the ocean floor.

2. Which ocean floor features are underwater mountains?

Sample answer: Mid-ocean ridges and seamounts are both examples of ocean floor features.

Pillow lavas along a large fissure on the Galapagos Rift are located 2,600 meters (1.6 miles) below the ocean surface.

Question 2

Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

1- How can scientists know about the depth of ocean floor by ?

A- Echo

B- plains

C- mountain

D- light

2- Avery flat area of the deep ocean floor .

A- byssal plain

B- canyon

C- mountain

D- island

3- long mountain range stretch through middle of ocean

A- mid – ocean ridge

B- island

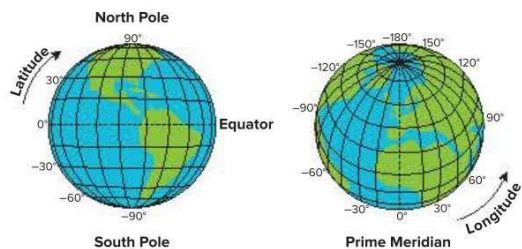
C- mountain

D- byssal plain

A **topographic map** shows the elevation of an area using lines. Each line is labeled with a number. Contour lines that are close together represent a rapid change in elevation. Contour lines that are far apart represent a gradual change in elevation.



Scientists can use maps to identify patterns in the locations of landforms and other features. The locations of certain features can be described using a coordinate system such as latitude and longitude. **Latitude** is used to describe how far north or south a place is from the equator. **Longitude** is used to describe how far east or west a place is from the Prime Meridian. Latitude and longitude lines form a grid across the globe.



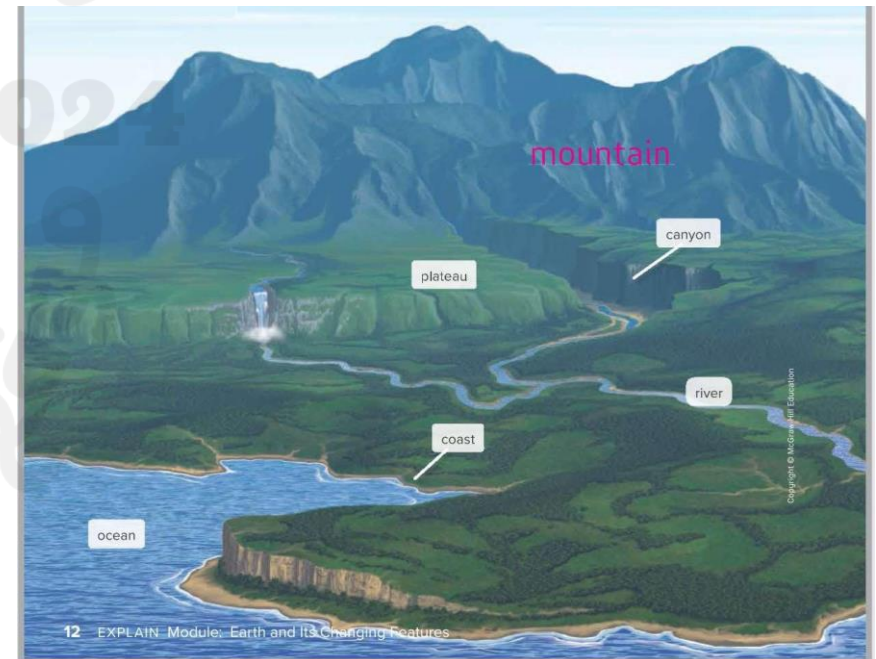
Q3: Page 17

U3M1L1

4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features

Possible questions from page 12

1. A landform that rises high above the Earth's surface.
2. A deep valley with high, steep side.
3. Flat land that is higher than the land around it.
4. A body of water meets land.
5. Natural body of moving water.
6. A large body of salt water.



5) Which shows the elevation of an area using contour lines?

- mountains
- faults
- topographical map
- cartographer

10) For which landform would contour lines be closest together on a topographical map?

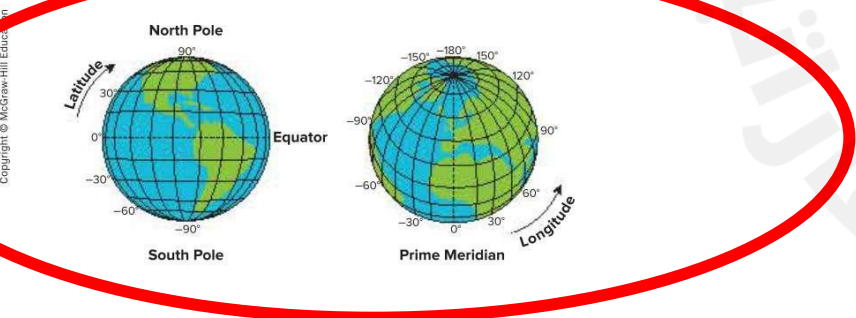
- a sand dune
- a plateau
- a hill
- plains



A **topographic map** shows the elevation of an area using lines. Each line is labeled with a number. Contour lines that are close together represent a rapid change in elevation. Contour lines that are far apart represent a gradual change in elevation.



Scientists can use maps to identify patterns in the locations of landforms and other features. The locations of certain features can be described using a coordinate system such as latitude and longitude. **Latitude** is used to describe how far north or south a place is from the equator. **Longitude** is used to describe how far east or west a place is from the Prime Meridian. Latitude and longitude lines form a grid across the globe.



Q4 Figure : Page 17 U3M1L1

4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features

topographic map

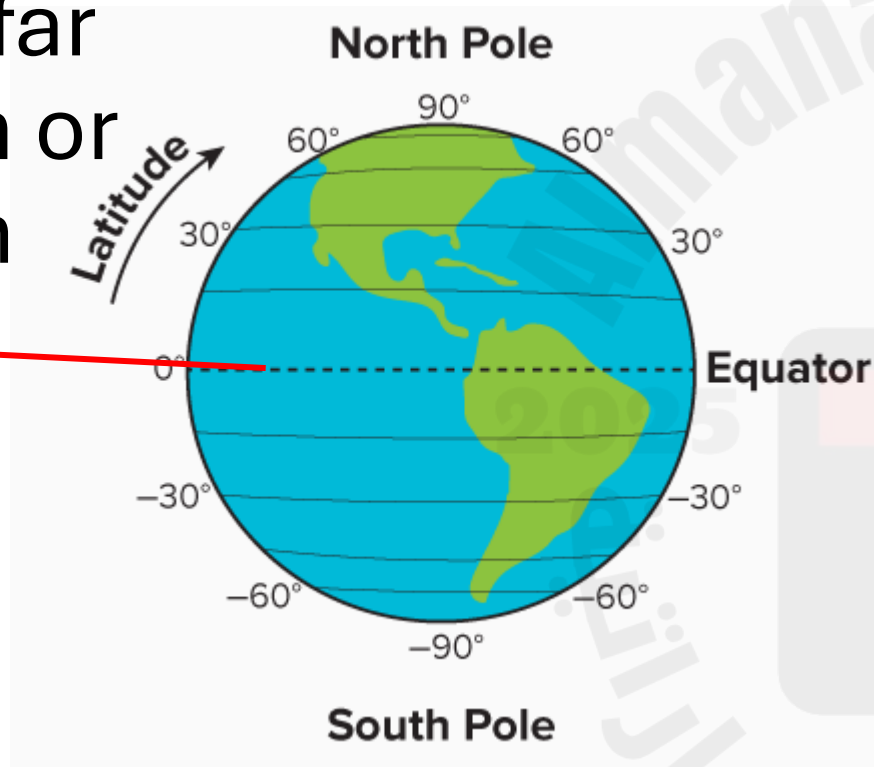
Show the elevation
of an area using
lines



Elevation is how high land is above the sea

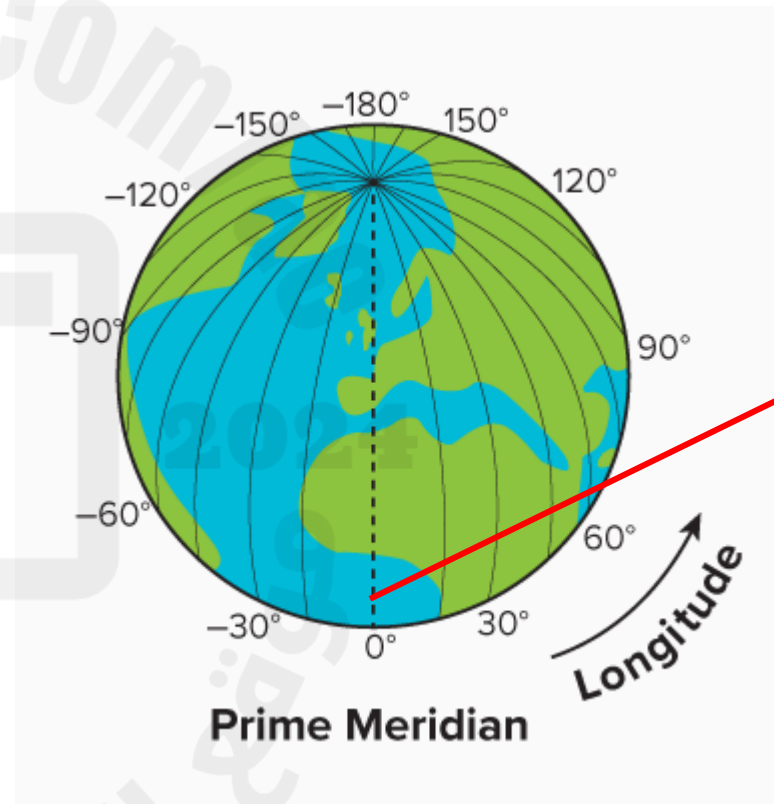
latitude

How far
North or
south
from



longitude

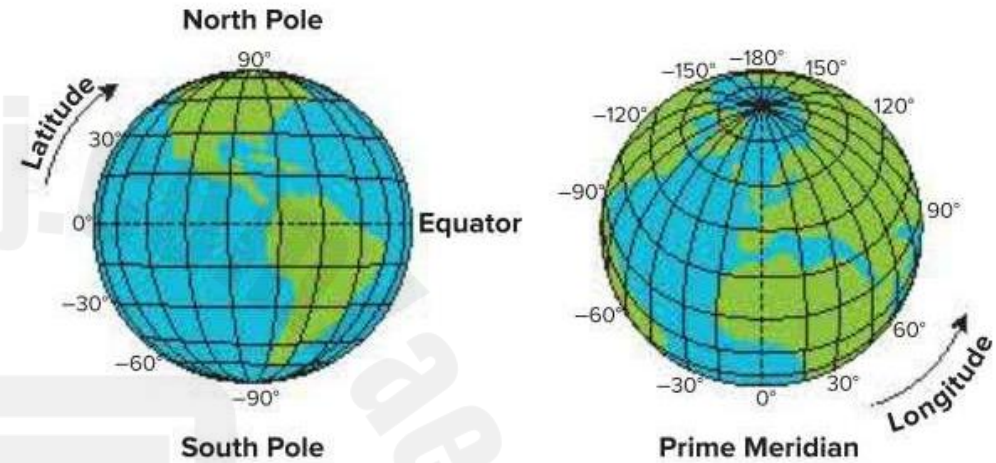
How
far east
or west
from



Possible questions from page 12 figures



1. What type of map is shown in the picture?
2. What type of map uses lines to show elevation?



3. What **lines** show how **far north or south** of the **equator** something is?
4. What **lines** show how **far east or west** of the **prime meridian** something is?

11. What do close lines on contour map show?

A rapid change in elevation

B gradual change in elevation

C no change in elevation

D none of the above

12. What do lines far apart on contour map show?

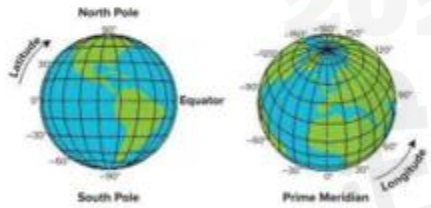
A rapid change in elevation

B gradual change in elevation

C no change in elevation

D none of the above

13.



What lines show how far north or south from the equator something is?

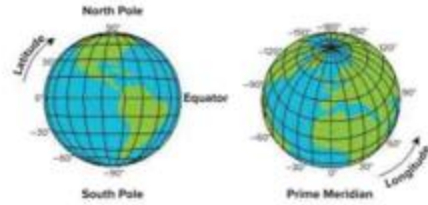
A latitude

B prime meridian

C equator

D longitude

14.



What lines show how far east or west from the prime meridian something is?

A

latitude

B

prime meridian

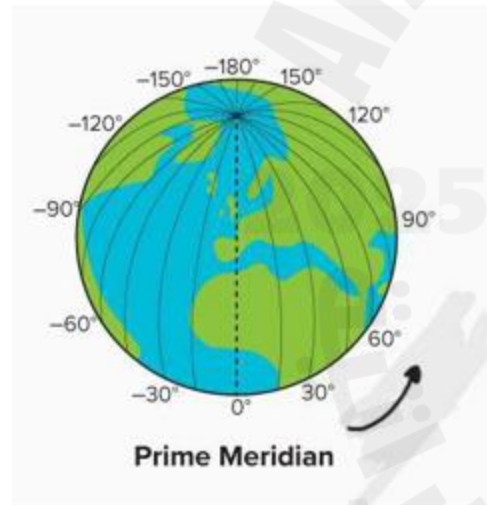
C

equator

D

longitude

15.



What lines are shown in the figure?

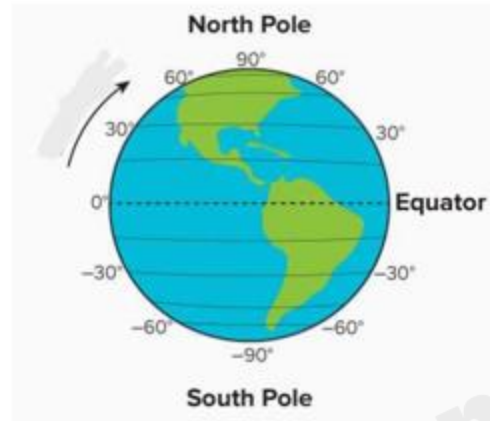
A

lines of latitude

B

lines of longitude

16.



What lines are shown in the figure?

A

lines of latitude

B

lines of longitude

17.



What map is shown in the picture?

A

relief map

B

topographic map

C

google maps

D

street maps

Q 5 MCQ: Page 19

U3M1L1

Tension, or forces that pull things apart, moves Earth's plates. Plates can also be moved by pushing forces. Mountains form when plates push together or past each other along plate boundaries. Many earthquakes and volcanoes also happen at plate boundaries.

A **volcano** is an opening on Earth's surface where melted rock or gases are forced out. Volcanoes can form on land or on the ocean floor, but they are located only in certain places on Earth's surface. Most volcanoes form at plate boundaries. For example, a ring of volcanoes called the *Ring of Fire* surrounds the Pacific Ocean. The Ring of Fire follows the boundaries of the plates that meet around the Pacific Ocean.

An **earthquake** is a sudden movement of Earth's crust. Like volcanoes, most earthquakes occur because of moving plates. Also, like volcanoes, earthquakes are most likely to occur near plate boundaries. You will learn more about earthquakes in the next module.

2. Describe the global patterns of volcanoes and earthquakes that are shown on the world map.

Both are likely to occur near plate boundaries.

Think about the ocean floor features from page 14. Some of these features, like ocean trenches, occur where two plates push together. Mid-ocean ridges occur where two plates spread apart. As the two plates move apart, new crust forms. The mid-ocean ridges are all connected and form the most extensive underwater mountain system on Earth.

3. Use the graphic organizer to classify the location of the following features: abyssal plains, earthquakes, mountains, volcanoes.

Near Plate Boundaries	Not Near Plate Boundaries
earthquakes, mountains, volcanoes	abyssal plains

Talk About It

Explain to a classmate where you would most likely find mountain ranges on the ocean floor.



4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth's features.

Possible questions page 19

- What is a volcano?
- What is an earthquake?
- Where do most volcanoes occur
- What type of plate motion forms mountains?
- What type of plate motion forms mid-ocean ridges?

22. When a volcano erupts, what will the liquid turn into after it cools down?

A gas

B dust

C lava

D rock



VOCABULARY

Look for these words as you read:

fossil

sediment

sedimentary rock

What Fossils Tell Us

Sedimentary rock forms from sediments that are pressed together in layers. **Sediments** are tiny bits of soil or rock that have been broken down and deposited. Wind and water deposit most of the sediments. Over time, layers of sediment are formed with new sediments, which are deposited on top of older layers. Sedimentary rocks are formed by the weight of the top layers, or of water covering the sediment, pressing the sediment together. It can take millions of years for sediment to become rock.

Fossils, remains or imprints of living things from the past, are preserved in sedimentary rocks. Fossils give scientists information about environments of the past. Ammonites once lived in Earth's oceans. Ammonite fossils are found in rock that is now on dry land. This indicates that the land was once covered by water.



Ammonites lived in water. These fossil ammonites were found on land.

Scientists can also determine the relative age of fossils based on the layer of rock in which they are found. Some fossils also provide clues to a rock layer's relative age. How deep an organism is buried also gives clues as to when the organism lived. Fossils found in layers closest to the surface are usually younger than fossils that are found in deeper layers of rock.

GO ONLINE Watch the video *Fossils* to learn more about how they form.

Talk About It

What are the differences and similarities between sediment and sedimentary rock? Discuss with a partner.

Q6: Page 32 U3M1L2

- 4-ESS1-1: Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

1- Formed from sediments that are cemented or pressed together

A – sediments

B – fossils

C- Sands

D- sedimentary rocks

Look to the picture and answer :

1- the youngest fossils found on layer

3

1

4

6

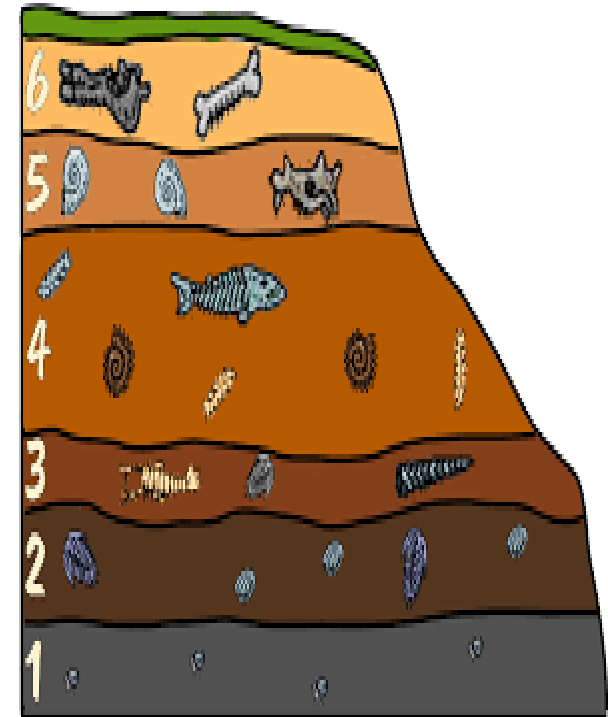
2- the oldest fossils found on layer

3

1

4

6



Question	4	4	السؤال
<p>A palaeontologist found a crocodile fossil in the desert. Based on this discovery, what conclusions can you draw about what this landscape was like in the past?</p>			
A			The climate was very cold and dry
B			The climate was very warm and had periods of rain
C			The climate had periods of cold winters and warm summers
D			The climate was very warm and dry

Question	22	22	السؤال
<p>Which of the following is formed from sediments that are cemented or pressed together?</p>			
A			Sediments
B			Fossils
C			Sands
D			Sedimentary rock

Inspect

Read the passage *Earth's Forces*. Underline the text that tells the forces that can change Earth.

Find Evidence

Reread the text. Are all Earth's forces the same? Highlight text that helps you understand.

Notes



Earth's Forces

Earth forces can affect the formation and patterns found in rock layers. Some of these forces include volcano eruptions, earthquakes, and the flow of rivers.

When a volcano erupts, it releases rocks, gases, and hot liquid rock called lava. Lava flows onto the surface, it cools, and hardens into new rock. A new layer of rock forms on top of the old layer each time a volcano erupts, like a stack of pancakes. This happens on continents and under oceans. An island **can slowly form** when enough underwater rock builds up to reach above the ocean surface. The Island of Hawaii formed this way.

Like volcanoes, earthquakes can change Earth's surface. During an earthquake, **the sudden slip** of two plates can cause cracks or can cause huge rocks to slide up over another layer. These changes can sometimes look like s-shaped folds in the rock layer.

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Q7: Page 34 U3M1L2

- 4-ESS1-1: Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

Possible questions from page 34

- What is the movement of weathered material from one place to another called?
- What is the process of eroded soil and bits of rock being dropped off in another place called?
- What process causes sand dunes to form?
- What process can cause landslides?
- How can erosion be prevented?

18. Some earth events happen quickly. These changes can be easily observed. Which earth event does not happen quickly?

A landslide

B island forming

C flooding

D volcano

19. Which forces change the earth quickly/rapidly?

A earthquakes

B flow of rivers

C weathering

D erosion



Make Connections

Talk About It

Explain a cause and effect relationship from the text. Discuss with a partner.

Notes

Handwritten notes area with horizontal lines for writing.

Slow movements of Earth's plates can be very powerful too. When plates push together, they push up land. **Over millions of years**, these forces can form mountains. The Rocky Mountains, in Colorado, formed this way.

Water can interrupt rock layers by **slowly removing rock particles**. It **slowly carves a gap in the layers**, like when you cut and remove a piece of cake. Eventually a canyon forms. It took millions of years for the Colorado River to form the Grand Canyon.

Use evidence from each photo to support an explanation about how landscapes change over time.

Sample answer: A river would interrupt the rock layers, while an earthquake would most likely bend or shift the layers.

REVISIT Revisit the Page Keeley Science Probe on page 27.
PAGE KEELEY SCIENCE PROBES

Q8: Page 35 U3M1L2

- 4-ESS1-1: Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

VOCABULARY

Look for these words as you read:

deposition

erosion

vegetation

weathering

Weathering

Recall the changes that you observed in the Inquiry Activity, *Shake, Rattle, and Roll*. You modeled weathering when you shook the jars. **Weathering** is the slow process that breaks down materials into smaller pieces. This process explains how rocks can change size and shape without changing their chemical properties.

Physical Weathering

Water can seep into cracks in a rock during warm weather. When the water freezes during cold weather, the water expands and makes the crack bigger. This process can also cause potholes and cracks in a road or sidewalk.

Abrasion is the action of rocks and sediments grinding against each other and wearing away surfaces. Abrasion can happen in many ways, such as when rocks and pebbles roll along the bottom of a river. Abrasion also occurs when rocks fall and tumble against one another. The force of the rocks hitting each other knocks off pieces of the rock. Wind causes abrasion. Sand blown by wind against exposed rock wears away the surface of the rock.

Rocks crashing together in a rockslide causes abrasion, a type of physical weathering.



Q9: Page 49 U3M1L3

- 4-ESS2-1: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

Many animals, like gophers, worms, and ants, can loosen and move soil and break apart rocks as they burrow in the ground. Plant roots can grow inside cracks in a rock and, over time, split the rock into pieces.

GO ONLINE Watch the video *Landscapes Change Over Time* to learn more about these processes.



The actions of living things, such as burrowing animals or growing plant roots, can cause weathering.

What type of force can cause abrasion?

Sample answer: The force of gravity can cause rocks to fall and cause abrasion.

Chemical Weathering

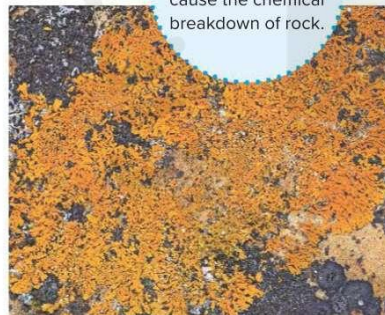
Chemical weathering changes the minerals that make up rocks. Water, living things, and oxygen can cause chemical weathering.

Acids from natural sources, such as volcanoes, can make water more acidic. These acids can speed the breakdown and weathering of rocks.

Iron combines with oxygen in the presence of water to form rust. Rocks that contain iron can rust. Rust makes rock soft and crumbly.

Plant roots give off a weak acid as they grow. Lichens, plant-like organisms that grow on rocks, also produce weak acids. Lichens are important to soil formation in cold climates.

Lichens produce acids that help cause the chemical breakdown of rock.



Q5: Page 49

U3M1L3

- 4-ESS2-1: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

Possible questions from page 48–49

- What type of force can physically break rock?
- What type of force can cause abrasion?
- What type of weathering changes rocks?
- What can cause chemical weathering?

Question	7	7	السؤال
Which happens during physical weathering?			
A			It snows.
B			Rocks are chemically changed into limestone
C			The size and shape of rocks are changed
D			Rust is created from the combination of water and air

Question	23	23	السؤال
***** BONUS *****			
Changes in the landscape can be caused by.....			
A			Physical weathering
B			Chemical weathering
C			Living things
D			All of the above

Question

1

1

السؤال

Some earth events occur quickly. These changes can be easily observed. Which Earth event does not happen quickly?

A

A landslide

B

A Weathering of rocks

C

Flooding

D

Volcano

24. What type of force can chemically break rock?

A plant roots

B animals

C lichens

D acid

25. What type of force can cause abrasion?

A friction

B gravity

C drag

26. What type of weathering can change rocks?

A frost wedging

B roots breaking rock

C abrasion

D rust

27. What type of weathering can change rocks?

A physical weathering

B chemical weathering

28. What cannot cause chemical weathering?

A water

B living things

C oxygen

D gravity

29. What happens during physical weathering?

A It snows

B Rocks are chemically changed into limestone

C The size and shape of rock are changed

D Rust is created from a combination of water and air

30. What happens during chemical weathering?

A It snows

B Rocks are physically changed into limestone

C The size and shape of rock are changed

D Rust is created from a combination of water and air

31. What happens during chemical weathering?

A It snows

B Rocks are physically changed into limestone

C The size and shape of rock are changed

D The minerals that makes up rocks changes

32. What is the movement of weathered material from one place to another called?

A weathering

B erosion

C deposition

D earthquake

VOCABULARY

Look for these words as you read:

acceleration
force
friction
inertia
motion
speed
velocity

Position and Motion

The position of an object is its location. Certain words give us clues about location, like *left* and *right*, *above* and *below*, and *north*, *south*, *east*, and *west*. When we describe an object's position, we compare it to surrounding objects.

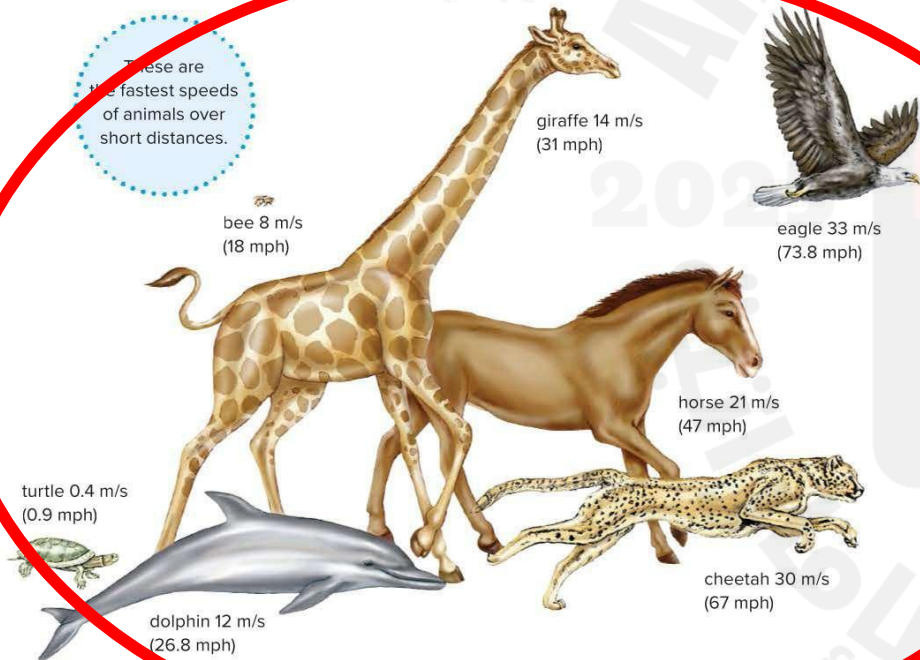
Motion

Motion is a change in an object's position. To describe motion more completely, you also need to find the amount of time it takes an object to move a certain distance. With measures of distance, direction, and time, you can describe motion and how it changes.

Speed

The **speed** of an object is how fast an object's position changes over time. Units of speed are units of distance per unit of time, such as meters per second (m/s), kilometers per hour (km/h), or miles per hour (mph). Suppose that in one hour you pedal your bike 12 km (7.5 mi). Your speed is 12 km/h (7.5 mph).

These are the fastest speeds of animals over short distances.



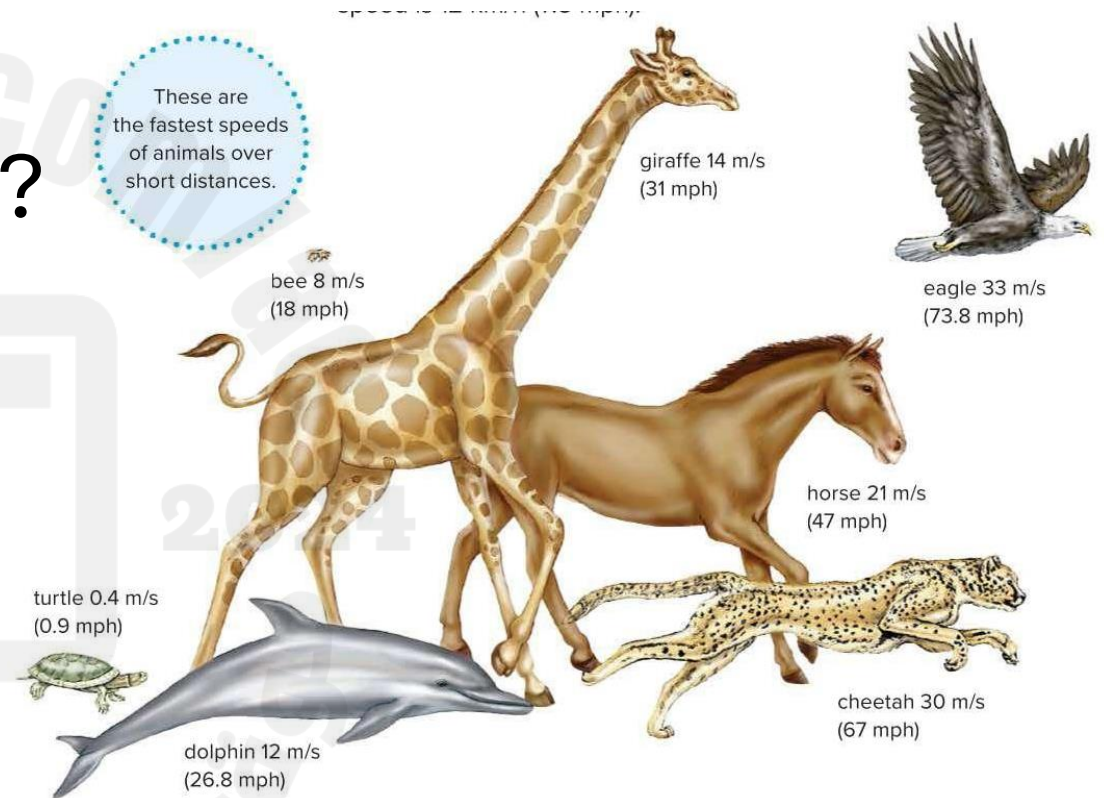
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Q11: Figure Page 10 U1M1L1

- 4-PS3-1: Use evidence to construct an explanation relating the speed of an object to the energy of that object.

Possible questions about figure page 10

- Which animal is fastest?
- Which animal is the slowest?
- Which animal has the most energy?
- Which animal has the least energy?



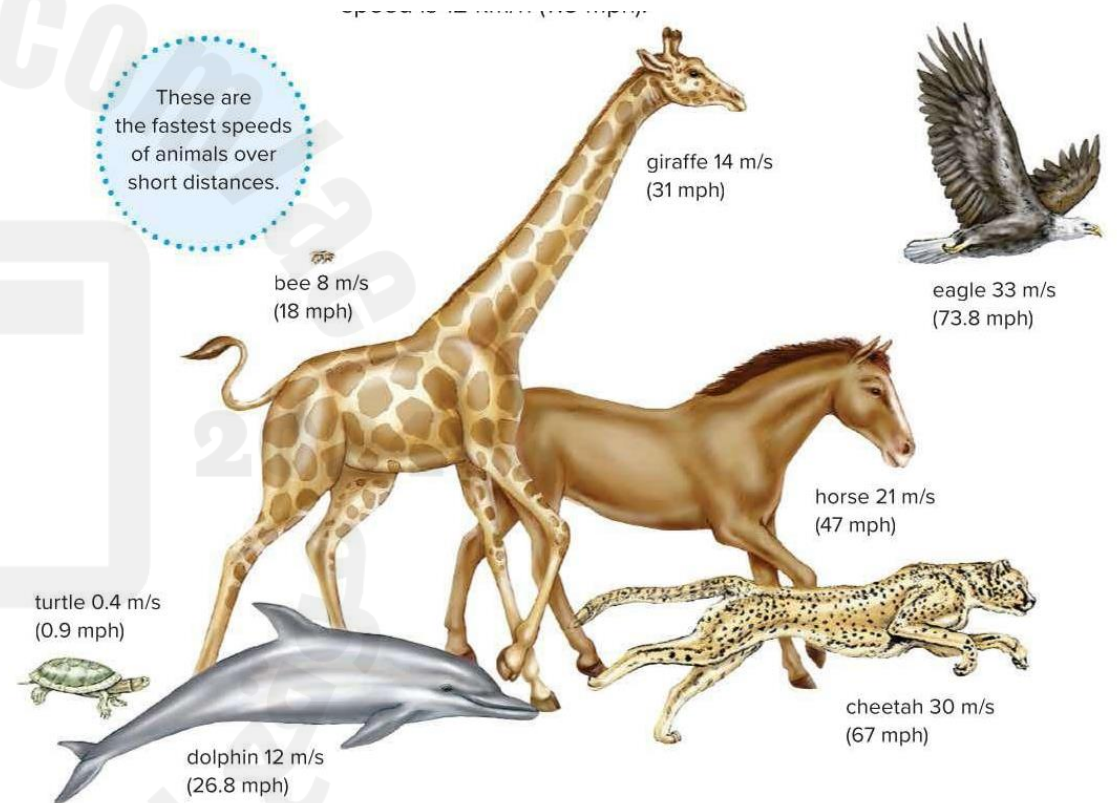
Possible questions about figure page 10

- Which animal has a speed of 21 m/s?

What is the speed of the giraffe?

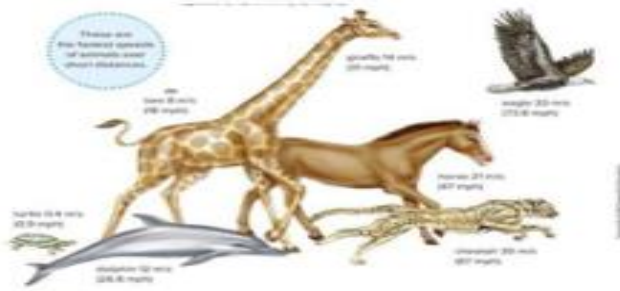
- What do the numbers in the picture represent?

-



Question	16	16	السؤال
How can you determine the speed of a moving train?			
A		Divide the distance traveled by the time spent moving	
B		Divide the time spent moving by the direction traveled	
C		Multiply the distance traveled by the time spent moving	
D		Multiply the kinetic energy by the distance traveled	

60.



What do the numbers in the picture represent?

A distance

B time

C speed

D velocity

61.



Which animal has a speed of 30m/s

A giraffe

B eagle

C cheetah

D horse

62.



What is the speed of the horse in mph?

A 27

B 47

C 31

D 54

63. If a race car travelled a distance of 500 kilometers in 2 hours, what was the car's average speed?

A $500\text{km} \div 2\text{h} = 250 \text{ km/h}$

B $500\text{km} \times 2\text{h} = 1000 \text{ km/h}$

C $500\text{km} + 2\text{h} = 502 \text{ km/h}$

D $500\text{km} - 2\text{h} = 498 \text{ km/h}$

64. If the drag forces are increased, then an object will fall _____

A

more slowly

B

faster

C

roughly at the same speed

D

rapidly and then slow down

65. How can you determine the speed of a moving train?

A

divide the distance travelled by the time spent moving

B

divide the time spent moving by the direction travelled

C

multiply the distance travelled by the time spent moving

D

multiply the kinetic energy by the distance travelled

66. What cannot be used to describe an objects motion?

A

distance

B

time

C

direction

D

temperature

67. What is a push or pull?

- | | | | |
|----------------------------|-----------|----------------------------|----------|
| <input type="checkbox"/> A | force | <input type="checkbox"/> B | distance |
| <input type="checkbox"/> C | direction | <input type="checkbox"/> D | speed |

68. Which of the following can a force not do?

- | | | | |
|----------------------------|-------------------------------------|----------------------------|----------------------------------|
| <input type="checkbox"/> A | cause an object to start moving | <input type="checkbox"/> B | cause an object to stop moving |
| <input type="checkbox"/> C | cause an object to change direction | <input type="checkbox"/> D | cause an object to change colour |

69. Force can cause _____

- | | | | |
|----------------------------|-------------|----------------------------|--------------|
| <input type="checkbox"/> A | temperature | <input type="checkbox"/> B | acceleration |
| <input type="checkbox"/> C | time | <input type="checkbox"/> D | distance |



Three-Dimensional Thinking

1. **MATH Connection** If a race car traveled a distance of 500 kilometers in 2 hours, what was the car's average speed?

$$500 \text{ km} \div 2 \text{ h} = 250 \text{ km/h}$$

2. How can you best describe an object's motion?

Sample answer: You can best describe an object's motion by measuring the distance, time, and direction of its motion.

3. If the drag forces are increased, then an object will fall _____.

- A. more slowly
- B. faster
- C. roughly at the same speed
- D. rapidly and then slow down

GO ONLINE Use the Personal Tutor Writing Ratios in Simplest Form to practice ratios.

Q 12-13: Page 21

U1M1L1

- 4-PS3-1: Use evidence to construct an explanation relating the speed of an object to the energy of that object.

Possible questions about figure page 21

- Calculate speed: a racecar travels 500km in 2 hours, what is the cars average speed?
- What cannot be used to describe an objects motion?
 - a) Distance
 - b) Time
 - c) Direction
 - d) Temperature

Possible questions about figure page 21

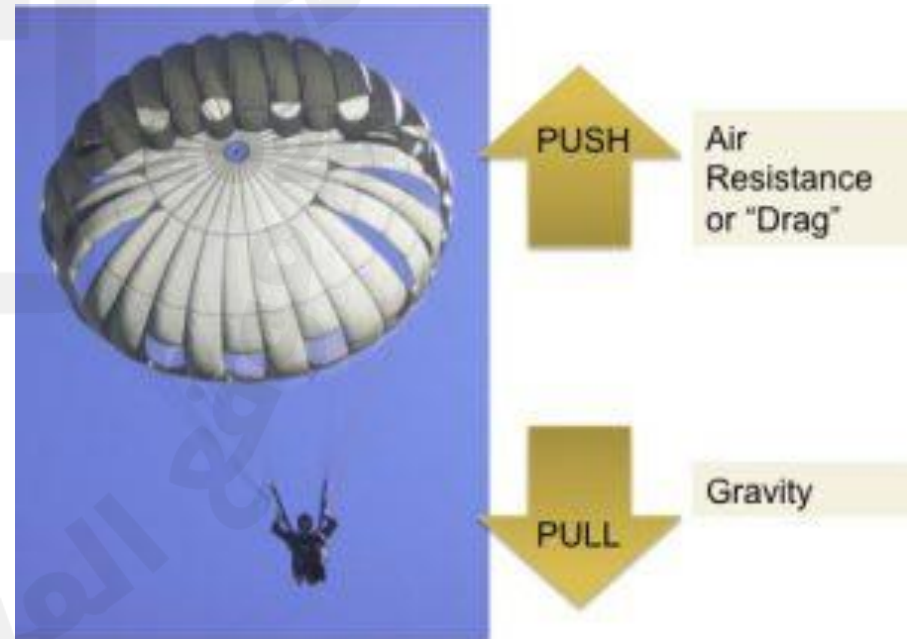
3. If the drag forces are increased, then an object will fall _____.

A. more slowly

B. faster

C. roughly at the same speed

D. rapidly and then slow down



Three-Dimensional Thinking

1. Use evidence from Inquiry Activity, *The Moving Ball*, to explain the relationship between the speed and energy of an object.

Sample answer: The faster an object moves, the greater its energy. When the ramp was at its highest, the ball moved the fastest and had the most energy of motion.

2. An airplane in flight has
 - A. stored energy because it is above ground.
 - B. energy of motion because it is moving.
 - C. both stored energy and energy of motion.
 - D. None of the above
3. Explain what happens to the amount of energy a cheetah has when it runs faster.

Sample answer: The faster the cheetah runs, the greater its energy.



Q 14 : Page 39

U1M1L1

- 4-PS3-1: Use evidence to construct an explanation relating the speed of an object to the energy of that object.

2024

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Balanced and Unbalanced Forces

The forces that act upon an object combine in different ways. Forces that act in the same direction add up to produce a stronger force. Forces that act in opposite directions produce a weaker force. The total force on an object is the sum of all of the forces acting on the object.



When forces act on an object without changing its motion, they are called balanced forces. If an object is at rest, the forces on it are balanced. Forces on a moving object can be balanced too. When ice skating, your feet push against the ice, moving you forward. That force can be balanced with forces from air against your body. When you skate in a straight line at the same speed, the forces are balanced. If the total force acting on an object equals zero, the object will not accelerate.

Talk About It

What other sports or activities can you think of that involve balanced forces? Discuss in a small group.

Forces that do not add up to zero are unbalanced. Unbalanced forces change the motion of an object. Unbalanced forces can also affect an object's speed, direction, or both. For example, a skier will not start skiing until an unbalanced force acts on her. Unbalanced forces cause the skier's speed and direction to change.

All objects have a property called inertia. **Inertia** is the tendency of an object in motion to stay in motion or of an object at rest to stay at rest.



Eventually, the skier's motion will come to a stop because of opposite forces acting against the skier.

Q 14 : Page 13 U1M1L1

- 4-PS3-1: Use evidence to construct an explanation relating the speed of an object to the energy of that object.

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-Where is the balanced force



LOOK TO THE PICTURE AND ANSWER

1- Net force =

2- object (can – can't) move

3- it is (balanced – unbalanced) force



LOOK TO THE PICTURE AND ANSWER



1- Net force =

2- object (can – can't) move

3- it is (balanced – unbalanced) force

Question	15	15	السؤال
Jacob is walking a dog that is small and a dog that is large. The dogs suddenly pull in opposite directions. In which direction will Jacob be pulled?			
A			Toward the smaller dog
B			Toward the larger dog
C			Away from the dog applying more force
D			Toward the dog applying more force