

Student Name:

Date:

Section A | True or False Questions

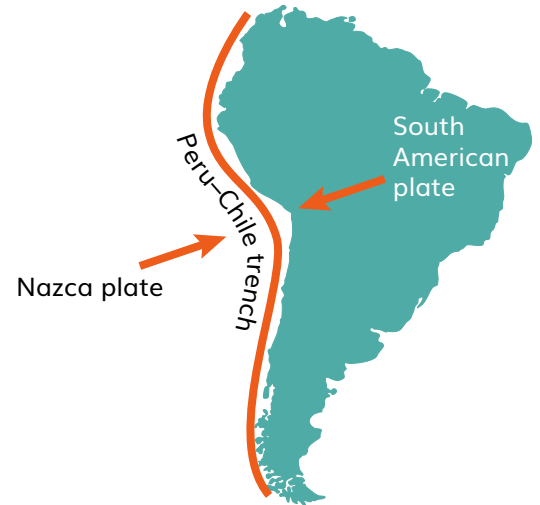
Select **True** or **False** for each statement.

		True	False
1	The ocean floor grows larger by the process of seafloor spreading, which occurs at diverging plate boundaries.		
2	Converging plate boundaries between two continental plates can cause volcanoes.		
3	All volcanoes are equally dangerous.		
4	Metamorphic rocks are formed from extreme heat and pressure deep inside the Earth.		
5	Volcanologists can predict the precise moment when a volcano will erupt.		
6	Volcanologists monitor seismic activity, temperature, gas emissions, and GPS movement to attempt to predict volcanic eruptions.		
7	Lava with high viscosity is largely more dangerous than lava with low viscosity.		
8	High gas content in a volcano's magma means it is more likely to be explosive.		
9	The warning level should be raised to "Watch" or "Warning" if the temperature slightly increases but all other data stays constant.		
10	Sedimentary rocks can only form from extrusive igneous rocks which are weathered.		

Section B | Multiple Choice Questions

- 1 The map shows one continental plate and one oceanic plate moving toward each other.
Read the statements. Which one accurately identifies the type of boundary and describes the expected results?

- A Divergent Boundary: The oceanic plate subducts under the continental plate and a volcano forms from the melting of the rock.
- B Convergent Boundary: The plates would build up and create a mountain.
- C Convergent Boundary: The oceanic plate subducts under the continental plate and a volcano forms from the melting of the rock.
- D Divergent Boundary: The plates would build up and create a mountain.



- 2.2 Which combination of volcanic features creates a more explosive eruption?
Select all that apply.

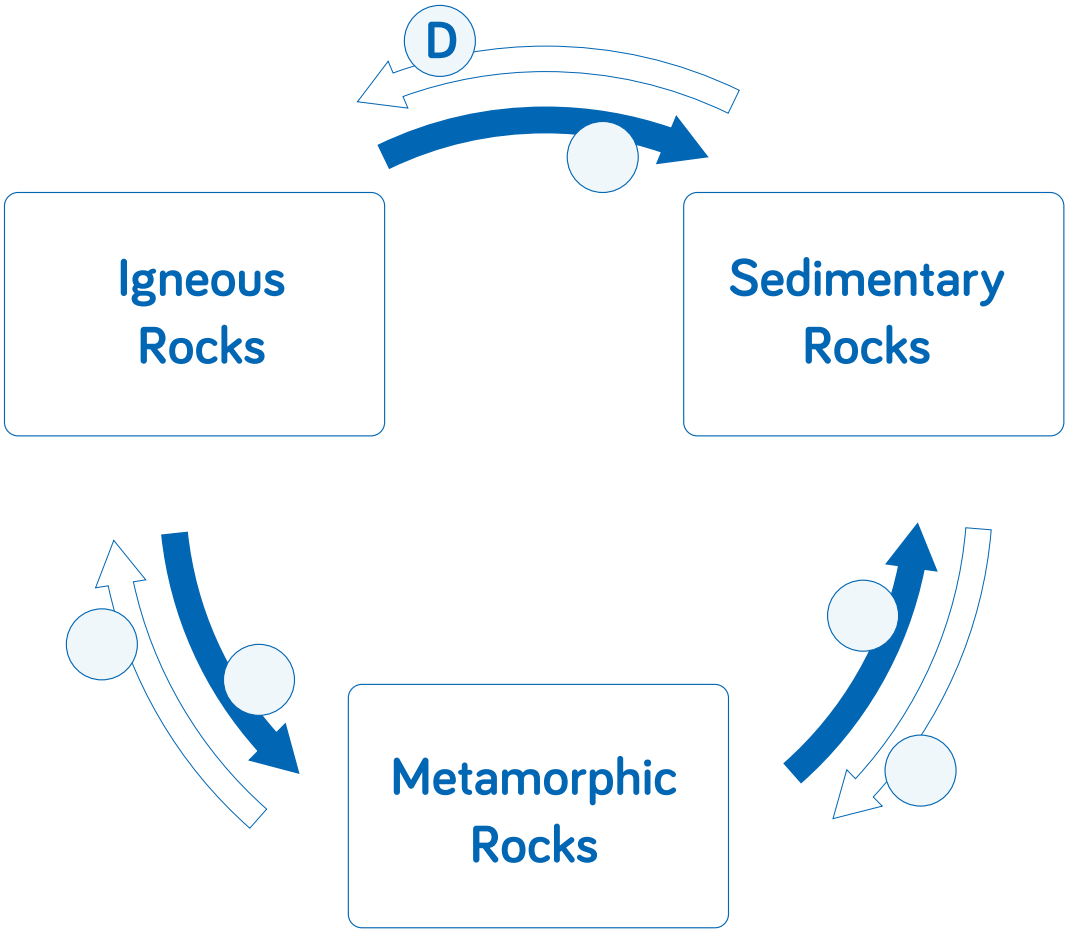
- A Low viscosity magma
- B High viscosity magma
- C High gas content
- D Low gas content

- 2.2 Which type of volcano tends to be the most dangerous?

- A Shield volcano
- B Stratovolcano
- C Cinder cone

3

Look at the arrows on the diagram. What process is occurring between each stage of the rock cycle? Use the information in the table below to write the correct letter in each of the blank boxes in the diagram. One has already been done for you.



A	Weathering and Erosion	<input type="checkbox"/>
B	Weathering and Erosion	<input type="checkbox"/>
C	Melting	<input type="checkbox"/>
D	Melting	<input type="checkbox"/>
E	Heating and Pressure	<input type="checkbox"/>
F	Heating and Pressure	<input type="checkbox"/>

4 Three students are asked to create 3-D models with crayons to demonstrate the stages of the rock cycle. Their methods are outlined. Identify the rock type each student created.

4.1 Rebecca places a crayon (rock) in a piece of foil and then on a heat source. The crayon melts then cools to a solid. What rock type has been created?

A Sedimentary

B Metamorphic

C Igneous

4.2 Mateo uses a cheese grater to shred the crayon (rock). He then gathers the pieces and applies pressure with a rolling pin until pieces have formed a new rock. What rock type has been created?

A Sedimentary

B Metamorphic

C Igneous

4.3 Aisha places a crayon (rock) in foil, under a heavy book, onto a heat source and applies pressure to create a flattened rock. What rock type has been created?

A Sedimentary

B Metamorphic

C Igneous

5 There are approximately 500 volcanoes on Earth that have been active in recorded history. This is too many for volcanology teams to monitor all at once. What evidence do volcanologists consider when deciding which volcanoes to monitor?

A Potential damage the volcano could cause should it erupt

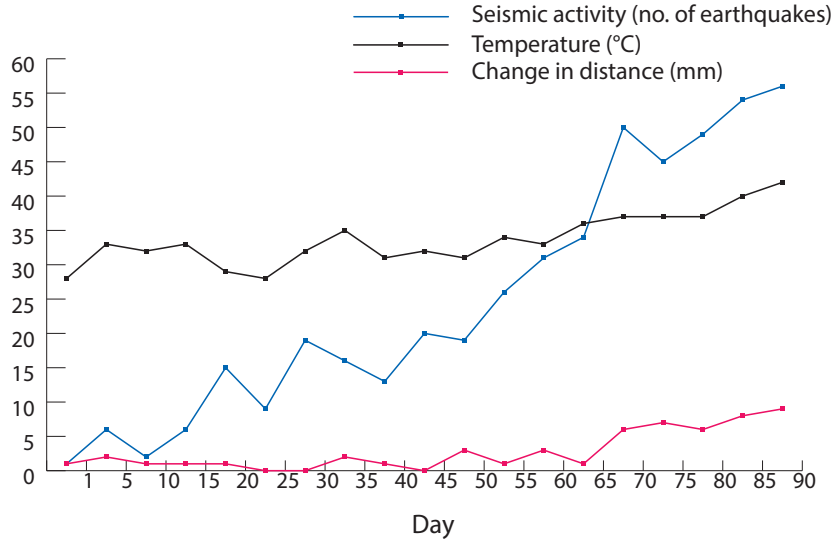
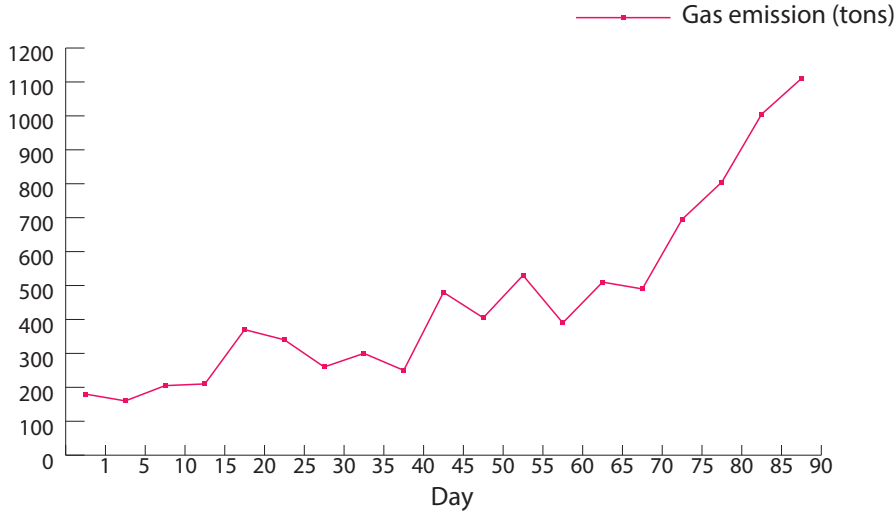
C The number of people living close to the volcano

B Eruptive history of the volcano

D All of the above

6

A volcanology team has been monitoring a stratovolcano for the past three months. They recorded their data in the two graphs shown below. The volcano has rhyolitic rocks, high viscosity magma, and a high gas content, and is currently labeled with a Watch warning level.



- A They should leave the warning level at Watch. The data doesn't provide enough evidence that the volcano will erupt anytime soon.

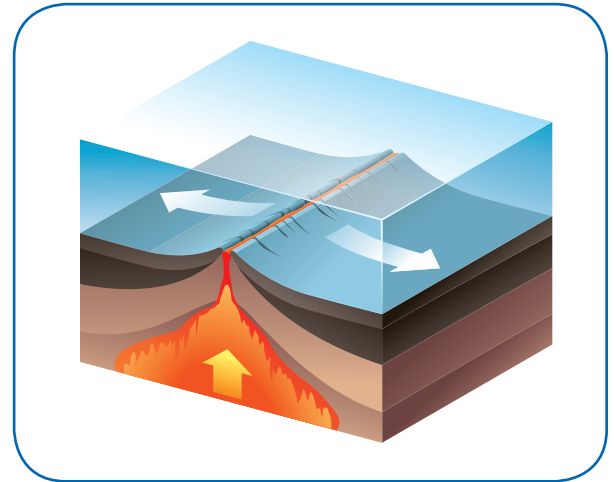
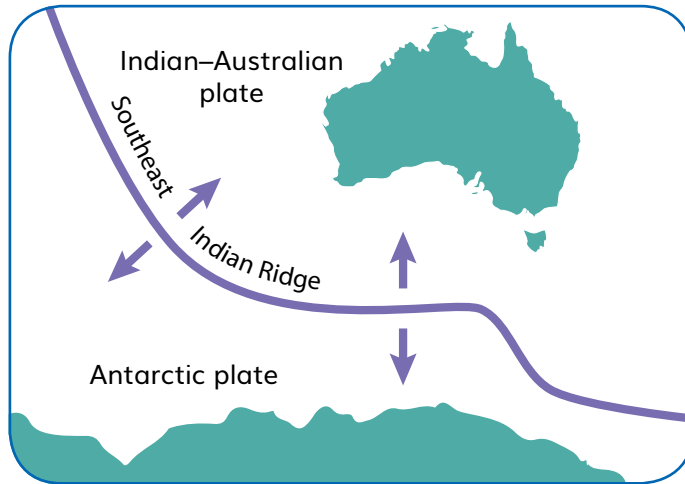
- B They should lower the warning level to Advisory. The data shows that the volcanic activity is decreasing.

- C They should lower the warning level to Normal. The data shows the typical variations of an inactive volcano.

- D They should raise the warning level to Warning. The data indicates that an eruption is imminent.

- 7 Four students have been asked to analyze a map of two plate boundaries and a 2-D model of the plates. They are asked to identify what type of boundary the images show and describe the process that is occurring in the model.

Select the most accurate theory from the statements.



- A Tomas thinks this is a divergent plate boundary where a continent is breaking apart into two different pieces. As the continent splits, magma rises and fills in the fault.
- B Anna thinks this is a divergent plate boundary where an oceanic plate and continental plate are separating. As the two diverge, rocks are expelled through the fault, and create a beach.
- C Camila thinks this is a divergent plate boundary in the middle of an ocean. As the oceanic plates separate, magma rises, cools, and creates new rock in the gap.
- D Jackson thinks this is a convergent boundary. As the two plates collide, they create a mountain.

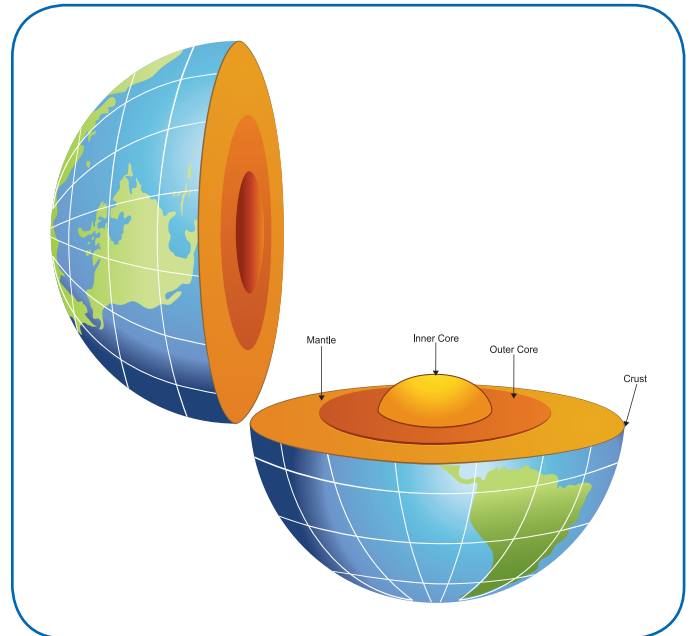
8 The Earth is made up of four different layers:

- Inner core
- Mantle
- Outer core
- Crust

The geosphere contains the tectonic plates. It is made of two parts of the Earth's layers.

Which two layers make up the geosphere?

- A The crust and the inner core
-
- B The crust and part of the mantle
-
- C The outer core and part of the mantle
-
- D The outer core and the inner core



9 An intrusive igneous rock is buried deep in the Earth's crust.

Which statement is **not** likely to occur in the next step of this rock's cycle?

- A The rock crystallizes and becomes an extrusive igneous rock.
-
- B The rock is subjected to heat and pressure and becomes metamorphic.
-
- C The rock melts and becomes magma.
-
- D The rock is gradually pushed up and becomes part of the mountain.

10 These tables contain data for four undermonitored volcanoes.

Volcano A	
Type	Shield volcano
Average VEI	1
Population within 20km	15,852

Volcano C	
Type	Stratovolcano
Average VEI	3
Population within 20km	89,567

Volcano B	
Type	Stratovolcano
Average VEI	5
Population within 20km	98,521

Volcano D	
Type	Cinder cone
Average VEI	2
Population within 20km	892

Which volcano would pose the biggest threat if it erupted?

- A Volcano A
- B Volcano B
- C Volcano C
- D Volcano D

11 Aiden was asked to draw a diagram of three types of volcanoes and write a description of each one. This is his written description and diagram.

Select the response that best describes how you think he met the requirements of his task.

- A The student's diagram is correct, but the description doesn't account for the different viscosities of lava, amount of gas, rock and ash, or the change in volcano incline.
- B The student doesn't draw all three types of volcanoes in the diagram. The description doesn't include the different viscosities of lava, amount of gas, rock and ash or the change in volcano incline.
- C The student's description is correct, but he did not draw diagrams of all three types of volcanoes.
- D Both the student's description and diagram are correct.

