

**P1 Assessed Task**

6 Vesto Slipher was an astronomer. In 1915, he measured the speed of a number of distant galaxies.

(a) Which one of the following statements about distant galaxies is true?

Put a tick (✓) in the box next to the correct statement.

Distant galaxies are moving towards our galaxy.

Distant galaxies are at a fixed distance from our galaxy.

Distant galaxies are moving away from our galaxy.

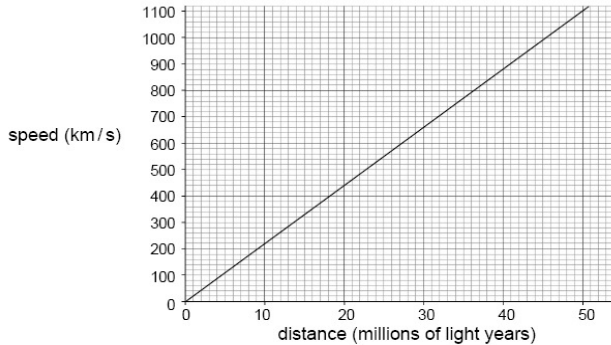
Distant galaxies are orbiting our galaxy.

[1]

(b) These are some of Vesto Slipher's results.

galaxy	speed (km/s)
A	1100
B	500
C	1100
D	600
E	300

Recent work by astronomers shows that these galaxies are moving relative to us with speeds given by this graph:



Use the graph to decide which galaxy in Vesto Slipher's table is 23 million light years away from us.

Show on the graph how you work out your answer.

galaxy ..... [2]

[Total: 3]

7 In 1906, a violent earthquake happened in San Francisco, on the California coast. The map shows the position of the San Andreas Fault and San Francisco.



The following statements describe the events leading to the earthquake. They are in the wrong order.

- A Great pressure builds up where the plates cannot move easily.
- B Two tectonic plates meet at a plate boundary at the San Andreas Fault.
- C Slow movements of the magma make tectonic plates move.
- D Friction at the edges prevents the plates from sliding easily.
- E The sudden movement causes an earthquake.
- F When the pressure becomes too great, the plates suddenly slip.

Fill in the boxes to show the right order. The first two have been done for you.

B	C				
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[3]

[Total: 3]

9 This question is about the movement of the Earth's continents. In 1912, Wegener suggested that the position of the continents had changed over millions of years.

(a) In 1912, geologists rejected this suggestion.

Put a tick (✓) in the box next to their **best** reason for rejecting Wegener's suggestion.

Continents did not seem to move about.

There was no geological theory which could explain how continents could move.

There were only a few similar fossil animals in South America and Africa.

Wegener was not trained in geology.

[1]

(b) Wegener's suggestion is now accepted as correct, even though it was not accepted in 1912.

Put a tick (✓) in the box next to the **best** reason for this change in the thinking of the scientific community.

Africa and South America have shapes which seem to fit together.

Fossils of similar animals have been found in Africa and South America.

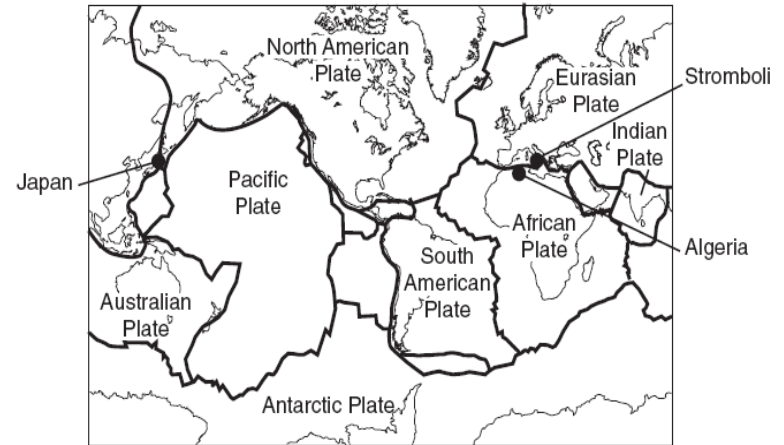
Sea floor spreading was discovered in the 1960s.

Similar rocks have been found in Africa and South America.

[1]

[Total: 2]

2 This question is about earthquakes. The map shows some of the tectonic plates that cover the surface of the Earth.



source: BBC website

(a) In May 2003, there were earthquakes in Algeria and Japan.

Explain why earthquakes are likely to occur in Algeria and Japan.

Use the information shown on the map to help you.

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.....[2]

- (b) The earthquakes in Algeria and Japan were of similar strengths. The earthquake in Japan caused little damage to buildings. The earthquake in Algeria killed more than 2000 people and left over 10 000 people homeless. A newspaper article reporting the earthquake in Algeria said:

## Why did so many die?



Northern Algeria's slums and luxury villas are now piles of rubble. Local residents blamed illegal property deals for the poor construction. The initial shock turned to anger, with victims turning on developers. "Why is it that the new buildings have collapsed and the old ones are still standing?" asked one man, surveying a pile of flattened buildings. Many people are believed to be still buried in the rubble. Entire areas of housing crumbled like houses of cards. When the quake struck, families were gathering at home for dinner, or to watch the UEFA Cup football final on the television.

*based on a report in The Times 24th May 2003*

- (i) Explain why so many people died in this earthquake in Algeria.  
 .....[1]
- (ii) Suggest ways in which the government in Algeria could help to prevent future earthquakes causing so much damage.  
 .....  
 .....  
 .....[3]

- (c) In December 2002 the volcano, Stromboli, on an island near Italy erupted. A burst of gas from the tiny volcanic island sent a mass of rock into the sea, causing a tidal wave. Stromboli is shown on the map.

Use your ideas about energy to explain what causes a volcano to erupt.

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 .....  
 .....  
 .....  
 .....[3]

[Total: 9]

Grade	Per Cent
<b>A*</b>	<b>95</b>
<b>A</b>	<b>85</b>
<b>B</b>	<b>75</b>
<b>C</b>	<b>65</b>
<b>D</b>	<b>55</b>
<b>E</b>	<b>45</b>