

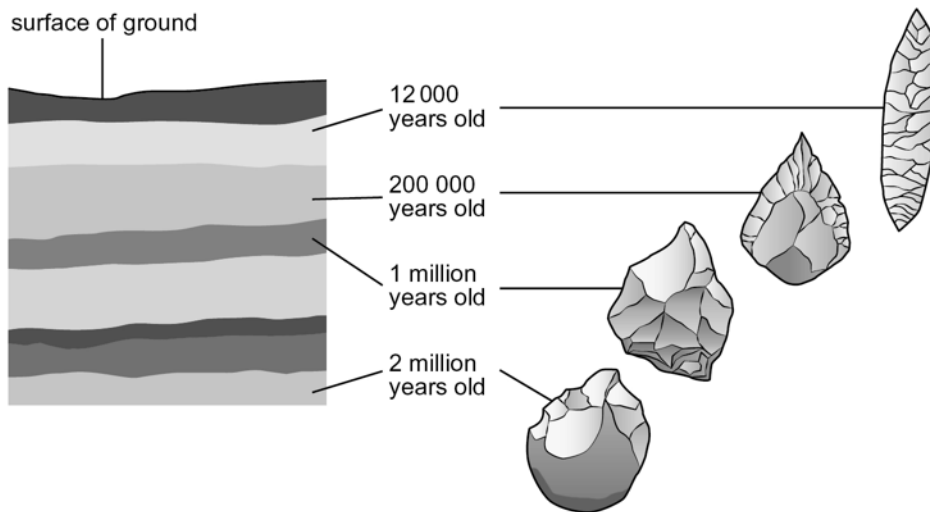
Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_ 

**Fossils** provide evidence of how organisms have evolved. Skull volume is worked out by making a copy of a complete skull from the bits of fossil skull and then working out the volume of the copy.

The table shows information about different human-like fossils.

Species name	<i>Ardipithecus ramidus</i>	<i>Australopithecus afarensis</i>	<i>Homo habilis</i>	<i>Homo erectus</i>	<i>Homo sapiens</i>
Age of species (million years)	4.4	3.9–3.0	2.4–1.4	1.8–0.5	0.2 to present
Average skull volume (cm <sup>3</sup> )	350	400	600	850	1450

- 1
  - a Use the information in the table to draw a bar chart that shows average skull volume on the vertical axis against species name on the horizontal axis.
  - b Add notes to your chart to show the age of each species.
- 2
  - a What does the term **evolution** mean? \_\_\_\_\_
  - b Describe the evolution of skull volume shown in your chart.  
\_\_\_\_\_
- 3 The diagram shows a section cut into the ground. Different layers in the ground are different ages. Scientists can use several methods to date each layer in the ground. This date is when the layer was at the surface.



- a Describe how the age of the ground layers changes as you go down through the ground.  
\_\_\_\_\_
- b Suggest why the date of a stone tool is the same as the date of the ground layer in which it was found.  
\_\_\_\_\_  
\_\_\_\_\_
- c Use the table above to identify the species that could have made the oldest hand axe.  
\_\_\_\_\_
- d Describe how the form of the hand axe developed over time.  
\_\_\_\_\_

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

The table shows some evidence from studies of human **evolution**.

<b>Time</b>	4.4 million years ago	3.2 million years ago	1.6 million years ago
<b>Skull volume (cm<sup>3</sup>)</b>	350	400	850
<b>Stone tools</b>	none	stones with one piece broken off to give a rough cutting edge	stones with many pieces broken off to make points and straight cutting edges

1 a Use names from the box to identify which human-like species lived at which time.

Ardi	<i>Homo erectus</i>	Lucy
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- i 4.4 million years ago \_\_\_\_\_
- ii 3.2 million years ago \_\_\_\_\_
- iii 1.6 million years ago \_\_\_\_\_

b State the source of evidence that scientists used to calculate skull volume.

\_\_\_\_\_

c Describe the change in skull volume with time that is shown in the table.

\_\_\_\_\_

d Suggest how the evidence of change in skull volume supports the idea of increase in brain size in human-like species over the last few million years.

\_\_\_\_\_

e Suggest how the evidence from stone tools supports the idea of an increase in brain size over the last few million years.

\_\_\_\_\_

S1 Some scientists think that environmental changes a few million years ago caused an increase in brain development of human-like species. Suggest evidence to support this idea.

2 Charles Darwin developed a theory to explain evolution.

a State what evolution means.

\_\_\_\_\_

b Darwin's theory states that evolution happens because of **natural selection**. Which statement is a definition of natural selection? Tick *one* box.

- How organisms change over time so they can get more food.
- How conditions in the environment affect which individuals are more likely to survive due to their characteristics.
- How nature makes organisms become more complex over time.
- How different individuals in a species are selected for breeding

EASIER

HARDER

