

9Ab INHERITED VARIATION

1 Look at the bar chart.

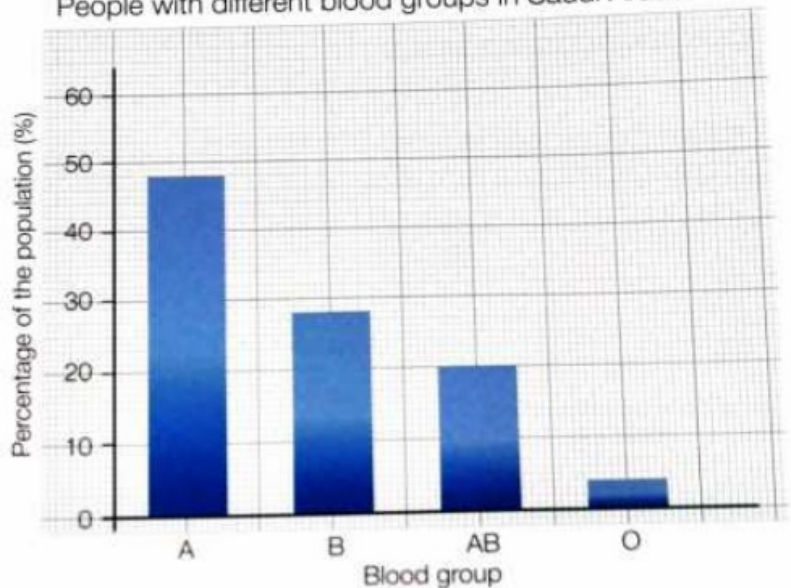
a What percentage of people have blood group A?

48%

b In a group of 300 people from Saudi Arabia, how many would you expect to have blood group AB?

$$300 \times 20\% = 60$$

People with different blood groups in Saudi Arabia



c Tick (✓) the boxes that best describe this type of variation.

- ☐ continuous
- ☒ discontinuous
- ☐ environmental
- ☒ inherited
- ☐ normal
- ☐ offspring

2 Complete the sentences using words from the box. Use each word once.

characteristics fertilisation fuse genetic information
inherited offspring parents zygote

The nucleus of the cell contains the **genetic** information that controls

inherited

characteristics. When two gametes

(join together) during **fertilisation**, they produce a **zygote**

(or fertilised egg cell). The fertilised egg cell contains genetic **information**

from both the **parent**, and so contains instructions for inherited

characteristics

from both parents. The **offspring**

will have some

characteristics of each parent.

9Ab MORE VARIATION

- 1 Which of these variations in characteristics are caused by genes, which by the environment and which by both? Tick (✓) the correct boxes.

Characteristic that varies

Variation caused by ...

genes

environment

being able to speak more than one language

☐
☒

length of hair

☐
☒

human height

☒
☒

natural eye colour

☒
☐

SB

- 2a Suggest a variation in tomatoes caused by both genetic information and environmental factors.

Explain your reasoning.

height of plant, size of tomatoes, colour of tomatoes;
these are affected by growing conditions and by genes.

- X Share your answers to part a with others in your group. Use a different colour to make an improvement to your answer, if you can.

- 3 The inherited variation between members of different species allows us to tell one species from another. This can be done using a biological key. Use the key below to identify the two whales, X and Y.



Key to whales

Statement:	Next step:
1 Bottom jaw longer than top jaw. Bottom jaw not longer than top.	go to 2 go to 5
2 Teeth sticking out of its jaws. No teeth sticking out of its jaws.	go to 3 go to 4
3 Teeth stick from the front of its mouth. Teeth stick down of the side of its mouth.	Longman's beaked whale Strap-toothed whale
4 Grooves underneath its body. No grooves underneath its body.	Blue whale Bowhead whale
5 Fin on its back. No fin on its back.	go to 6 go to 7
6 Large white patch behind eyes. No white patches behind eyes.	Killer whale Long-finned pilot whale
7 Lumps on its back. No lumps on its back.	Sperm whale Beluga whale

a Whale X is beluga whale

b Whale Y is blue whale.