

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?

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

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

fuse

(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

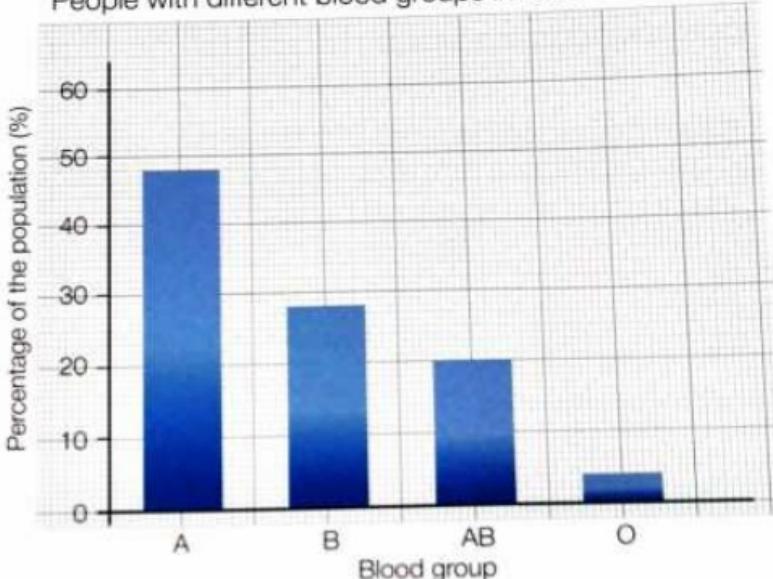
from both parents. The

offspring

will have some

characteristics of each parent.

People with different blood groups in Saudi Arabia



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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

being able to speak more than one language
length of hair
human height
natural eye colour

	Variation caused by ...
genes	environment
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
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2a Suggest a variation in tomatoes caused by both genetic information and environmental factors.

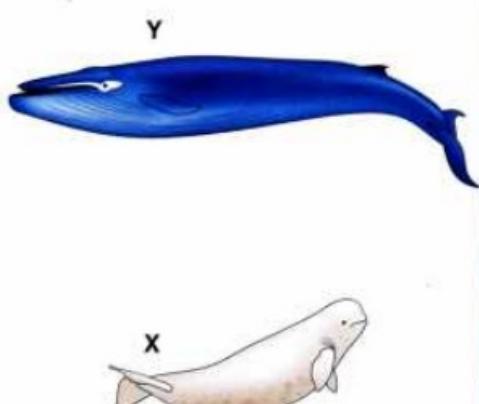
SB

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.**