



Name: \_\_\_\_\_

Class: \_\_\_\_\_

## Student worksheet

### 1.7 Alleles for blood group traits co-dominate

Pages 16–17

## Co-dominant traits

1 What is co-dominance?

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2 List all the different alleles for ABO blood grouping.

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3 Which allele is recessive and which alleles are co-dominant with regards to ABO blood grouping?

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4 What is the phenotype for each of the following individual's genotypes?

a  $I^A I^B$  \_\_\_\_\_

b  $I^B i$ : \_\_\_\_\_

c  $ii$ : \_\_\_\_\_

d  $I^B I^B$ : \_\_\_\_\_

5 What percentage of individuals are rhesus negative?

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6 Emma has the genotype  $I^A I^B$  and Geoff has the genotype  $I^A i$ .

a What is Emma's phenotype? \_\_\_\_\_

b What is Geoff's phenotype? \_\_\_\_\_



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- c Draw a diagram in the space below to show how the surface of Emma's red blood cells differ to those of Geoff's.

Emma's red blood cells:

Geoff's red blood cells:

- d Complete the Punnett square below to determine the possible genotypic and phenotypic ratios of Emma and Geoff's children.

		Geoff	
		$I^A$	$i$
Emma		$I^A I^A$	$I^A i$
		$I^A I^B$	$I^B i$

Genotypic ratio:

Phenotypic ratio:

### Extend your understanding

- 7 Explain why it is preferable for a patient to be given the same blood group when receiving a blood transfusion.

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- 8 Explain why it is possible in an emergency for a patient who is AB+ to receive blood from any other blood group, while a patient who is O– can only receive blood from an O– donor. You may need to use the internet to research this topic.

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