

Biology

LESSON OBJECTIVE	In this lesson, students learn about the study of genetics and how characteristics are inherited. They learn to interpret a Punnett square.
LANGUAGE REFERENCE	Unit 3: Word formation: prefixes (<i>misconception</i>); Verb + object + infinitive (<i>help someone to do something</i>) Unit 4: Second conditional; <i>chromosome, life-threatening</i>

WARMER

Ask students to say who in their family looks the most similar and why. Elicit whether they know what the reasons are.

- 1 Direct students to the photo. In small groups, they discuss and make a list of as many different characteristics represented as possible. If you wish, elicit one or two as a class first, e.g. hair (different colours, some curly, some straight, etc).

Suggested answers

Eye colour, hair colour, hair type, skin colour, gender, height, weight

- 2 Students work alone to quickly read the text and note the different characteristics mentioned. When you check answers, you may wish to check students understand what is meant by 'roll your tongue'.

Answers

hair colour, eye colour, whether you can roll your tongue or not, having life-threatening illnesses such as cystic fibrosis

Before reading the text again, write the words in the *Vocabulary focus* box on the board and ask students to find them in the text. Pre-teach some of the words if necessary.

- 3 Students read the text and match the terms to the definitions.

Answers

1 f 2 c 3 a 4 e 5 d 6 b

- 4 Students read the text in more detail and answer the questions. If you feel your class needs extra support here, students could do this in pairs or small groups.

Answers

- 1 Because genetic information, which determines our characteristics, is passed down between generations.
- 2 It is a gene which will always be expressed, regardless of whether it's paired with a dominant or recessive gene.
- 3 It is a gene which will only be expressed if paired with another recessive gene.
- 4 Yes. If both parents have one blue (recessive) gene, then the child could be blue-eyed if he/she receives a recessive gene from both parents.
- 5 It can help to identify life-threatening conditions that are caused by faulty genes.

- 5 Students work in pairs to discuss the questions. Note: the second question could be sensitive if any students are adopted. If this is the case, they can discuss a relative or friend for this question instead. The answer to the third question is that it would be extremely rare, because blue-eyed parents will each have two blue (recessive) genes.

?? DID YOU KNOW?

Direct students to the *Did you know?* box and read out the fact. Ask if any of them find the information surprising and why/why not.

PROJECT

- 1 Students work in pairs to choose one of the characteristics that is determined by dominant or recessive genes. You may need to check they understand some of the characteristics in the list.
- 2 Students look online to find a Punnett square to illustrate the different outcomes.
- 3 They make notes on how to explain the different outcomes.
- 4 Pairs take turns to tell the class about their characteristics and explain the different possible outcomes. They can draw their Punnett square on the board.