

SAME OR DIFFERENT?

STUDENT BOOK:	Chapter 5, pp. 129–130
CONCEPTS:	GENETIC DIVERSITY
METHOD:	OBSERVATION

Genes are responsible for most of the physical traits we see in a person. Brown eyes, dimples in cheeks when smiling, a widow's peak at the hairline and the ability to curl the tongue into a U-shape are all traits dictated by dominant genes. In sum, genetic diversity within a population expresses mostly the presence or absence of dominant genes in the individuals making up that group.

IDENTIFYING OBSERVATION CRITERIA

Read pp. 129–130 in your student book for help in answering the following questions.

1. Genes determine an individual's physical traits. Where are the genes located in the cell?

2. What role do genes play in an individual's physical makeup?



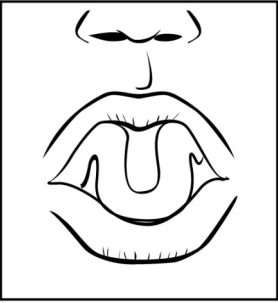



3. Does everyone have similar genes? Explain your answer.

4. What is genetic diversity?



Name: _____ Group: _____ Date: _____

5. For a clearer picture of genetic diversity, look for these four physical traits in your classmates.

Physical traits	Possible variations	
Eye colour	Brown or green	Blue or grey
Hairline on the forehead	Widow's peak 	No widow's peak 
Ability to curl the tongue into a U-shape	Can curl tongue 	Can't curl tongue 
Dimples in cheeks when smiling	Dimples 	No dimples 



Name: _____ Group: _____ Date: _____

ESTABLISHING AN OBSERVATION PROTOCOL

6. Choose a sampling of individuals for your observations.

7. Create a protocol for observing the four physical traits among the individuals in your sampling.

APPLYING THE OBSERVATION PROTOCOL

8. Apply the observation protocol you created and record your answers in the table below.
Remember to title your table of results.

Title: _____

Subject	Eye colour		Hairline on the forehead		Ability to curl tongue into U-shape		Dimples in cheeks when smiling	
	Brown or green	Blue or grey	Widow's peak	No widow's peak	Can	Can't	Dimples	No dimples
1								
2								
3								
4								
5								
6								
7								
8								
9								



Name: _____ Group: _____ Date: _____

(continued)

Subject	Eye colour		Hairline on the forehead		Ability to curl tongue into U-shape		Dimples in cheeks when smiling	
	Brown or green	Blue or grey	Widow's peak	No widow's peak	Can	Can't	Dimples	No dimples
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Name: _____ Group: _____ Date: _____

REFLECTING ON YOUR APPROACH

9. Were you able to observe any genetic diversity? Explain why.

10. Were any of the four physical traits missing from your sampling?

11. Are the possible variations for a given gene always distributed equally among a population?
Explain your answer based on your observations.



Name: _____ Group: _____ Date: _____

12. How could you have improved your observation protocol?

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