

Lesson Plan

Genetic Relationships

Book: *Gene Editing*

Series: Engineering the Human Body

Level: Navigator

Objective

To help students practice identifying the relationships between key concepts in a text about gene editing.

Supplies

- *Gene Editing* book
- Genetic Relationships worksheet (attached)
- Pencils

Before the Activity

Read *Gene Editing* out loud, or assign it to students to read on their own. Give each student a pencil and a copy of the Genetic Relationships worksheet.

Activity

The worksheet lists several pairs of concepts related to gene editing. Students should write down the relationship between the two concepts and include the page number where they found that information.

Evaluation

Use the attached answer key to evaluate students' responses and award students 1 point for each correct relationship, for a total of 11 points.

Standards

This lesson may be used to address the Common Core State Standards' reading standards for informational texts, grade 5 (RI 5.3).

Genetic Relationships

1) genes and proteins – page _____

2) genes and DNA – page _____

3) genes and cells – page _____

4) genes and gene therapy – page _____

5) gene therapy and gene editing – page _____

6) body cells and germ cells – page _____

7) germ cells and embryos – page _____

8) germ cells and germline editing – page _____

9) enzymes and gene editing – page _____

10) enzymes and cells – page _____

11) enzymes and RNA – page _____

Genetic Relationships **ANSWER KEY**

1) genes and proteins – page 6

Genes tell the body to make proteins.

2) genes and DNA – page 6

Genes are sections of DNA.

3) genes and cells – page 6

Genes are in every cell in the human body.

4) genes and gene therapy – pages 6–7

Gene therapy is the process of adding a missing gene to a cell.

5) gene therapy and gene editing – page 9

Gene editing is a new type of gene therapy.

6) body cells and germ cells – page 14

Body cells and germ cells are the two main types of cells in the human body.

7) germ cells and embryos – pages 14, 28

Germ cells develop into embryos, which then become babies.

8) germ cells and germline editing – pages 14, 27–28

Germline editing is the process of making changes to germ cells.

9) enzymes and gene editing – page 22

Enzymes are tools that scientists can use in gene editing to cut up genes.

10) enzymes and cells – page 22

Enzymes are molecules that can make changes in a cell.

11) enzymes and RNA – page 22

In gene editing, an RNA molecule guides the enzyme to the right spot on the gene that needs to be cut.