

Name _____

Date _____

**Cloze
Activity**

Section 4.2

Use with textbook pages 138-143.

The effects of mutations

Vocabulary

DNA	negative mutations
gene mutation	neutral mutations
gene therapy	organism
healthy gene	positive mutations
mutagens	proteins
mutated gene	

Use the terms in the vocabulary box to fill in the blanks. You will not need to use every term. You may use terms more than once.

1. A _____ is a change in the genetic material of a gene.
2. Changes to DNA may cause _____ to be made incorrectly or with an incorrect shape.
3. Factors in the environment, called _____ can cause mutations.
4. Radiation, cigarette smoke, and pesticides are examples of _____.
5. Mutations that are harmful to an organism are called _____.
6. Mutations that are helpful to an organism are called _____.
For instance, some plants carry a mutated gene that protects them from disease.
7. Mutations that have no effect on an organism are called _____.
8. New techniques for treating gene mutations are called _____
and may involve replacing a _____
with a _____.

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Use with textbook pages 136–143.

Mutation

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.	
Term	Descriptor
1. _____ gene mutation	A. techniques developed to replace mutated genes
2. _____ gene therapy	B. a mutation that does not affect the organism
3. _____ mutagens	C. a mutation that harms an organism
4. _____ negative mutation	D. a change in the genetic material
5. _____ neutral mutation	E. a mutation that benefits an organism
6. _____ positive mutation	F. a healthy gene
	G. substance or factor that can cause mutations in DNA

Circle the letter of the best answer.

7. The coat colour of the Spirit Bear is due to
- A. change of the seasons
 - B. global warming
 - C. a mutated gene
 - D. environmental stresses
8. Most mutations
- A. are helpful to the organism
 - B. are harmful to the organism
 - C. have no effect on the organism
 - D. can be treated in an organism

9. Which of the following is an example of a neutral mutation?

I.	white fur instead of black fur
II.	a mutated gene protects a plant from a disease
III.	curved red blood cells instead of disc-shaped cells

- A. I
 - B. II
 - C. III
 - D. none of the above
10. Which type of mutation is beneficial to an organism and, therefore, aids in the organism's ability to survive?
- A. neutral
 - B. positive
 - C. negative
 - D. deletion
11. Errors in the DNA that appear to neither harm nor help an organism are called
- A. neutral
 - B. positive
 - C. negative
 - D. substitutions
12. Which of the following can cause mutated genes?

I.	cigarette smoke
II.	radiation
III.	pesticides

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III