

Traits Meet Environment

Track which characteristics come from parents and which can change with conditions.

SC.4.L.16.2 "Explain that although characteristics of plants and animals are inherited, some characteristics can be affected by the environment."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each inherited characteristic in the passage. Circle each characteristic that the environment affects so you can compare the two kinds of characteristics.

Bean Plants in Two Places

- ① At the school garden, students planted bean seeds from the same kind of plant. As the seedlings grew, most had smooth, oval leaves and curling vines. These traits came from the parent plants through seeds. A seed carries inherited information that helps guide many features, such as the plant's leaf shape, flower color, and the kind of fruit it can make.
- ② The students placed some pots in a sunny window and others in a shaded hallway. Every pot received the same soil and bean seeds. After three weeks, the sunny plants were taller and greener. The shaded plants were shorter and paler because they received less light. Light affected their growth, but it did not change the leaf shape inherited from their parents.
- ③ Plants are not the only living things with inherited traits. A rabbit may inherit fur color and ear shape from its parents. Yet the environment can affect some characteristics during the rabbit's life. For example, a rabbit with too little food may grow more slowly than a well-fed rabbit of the same kind. Food changes growth, not the rabbit's inherited ear shape.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Name two characteristics that bean plants can inherit from their parent plants.

2 How did the amount of light affect the bean plants after three weeks?

3 Did less light change the bean plants' inherited leaf shape? Use information from the passage to explain.

4 For the rabbits, name one characteristic affected by the environment and one inherited characteristic.

3 YOUR TURN _____ Your own words

Choose a plant or animal not named in the passage. Write three sentences that name one inherited characteristic, name one environmental factor, and explain a characteristic that the factor can affect.

PART 1 • READ AND MARK

Underline each inherited characteristic in the passage. Circle each characteristic that the environment affects so you can compare the two kinds of characteristics. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Name two characteristics that bean plants can inherit from their parent plants.	Any two: leaf shape, flower color, the kind of fruit the plant can make, smooth oval leaves, or curling vines.
2	How did the amount of light affect the bean plants after three weeks?	Plants in the sunny window were taller and greener. Plants in the shaded hallway were shorter and paler.
3	Did less light change the bean plants' inherited leaf shape? Use information from the passage to explain.	No. Less light affected growth, but it did not change the leaf shape inherited from the parent plants.
4	For the rabbits, name one characteristic affected by the environment and one inherited characteristic.	Too little food can affect how slowly a rabbit grows. Ear shape or fur color is inherited.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A sunflower can inherit yellow petals from its parent plants. If it gets too little water, it may grow shorter and have drooping leaves. Water affects its growth, but it does not change the petal color it inherited.

Accept inherited traits and environmental effects that are scientifically reasonable and clearly separated. The student should explain that the environmental factor affects a characteristic during life, not the inherited trait itself.