Signals and Seeds

Trace how traits can affect reproductive success.

7.10 "Obtain, evaluate, and communicate information about characteristic animal behaviors and specialized plant structures and their effect on the probability of successful reproduction."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one animal behavior and one plant structure in the passage. For each, circle a possible result for reproduction and draw a line connecting the cause to the result.

A Song and a Hinged Flower

1 At the edge of a marsh, a male red-winged blackbird sings from a tall reed and spreads his red shoulder patches. These displays can warn rival males and attract females to his territory. A female may choose a territory with food and places to hide a nest. If a male's display helps him gain a mate, he has a better chance of producing young. But a loud song alone does not ensure success. A predator could still find the nest before the chicks survive.

2 In a nearby garden, a snapdragon flower has petals that form a hinged opening. A large bee can push the petals apart to reach nectar. As the bee enters, it may brush against pollen and carry some to the stigma of another snapdragon flower. This transfer can lead to fertilization, which allows seeds to develop. The hinged shape may keep smaller insects from taking nectar without touching the flower's reproductive parts. Still, a flower that receives no suitable visitors may make few seeds.

3 Both cases show a possible cause-and-effect link, not a promise. A scientist might record which blackbird displays attract mates and whether those pairs raise young. For snapdragons, the scientist might record bee visits and then count seeds in the visited flowers. Watching a bird sing or a bee enter a flower shows only the first step, not successful reproduction. Food shortages, predators, and weather can also affect the results. Comparing outcomes across many birds or flowers gives stronger evidence than watching just one.

2 ANSWER WITH EVIDENCE

Use the passage

1. How could a male blackbird's song and red shoulder patches increase his chance of producing young?

2. How could a snapdragon's hinged petals help it produce seeds?

3. Name one condition that could prevent success for the blackbird and one that could prevent success for the snapdragon, even if each trait works as described.

4. A student sees one bee enter a snapdragon and says the flower has reproduced successfully. What would you check before accepting that claim, and why?

3 YOUR TURN

Your own words

Choose an animal behavior or plant structure not named in the passage. In 3 to 4 sentences, explain how it could increase the chance of successful reproduction and describe an observation that would help test your claim.

ANSWER KEY

Signals and Seeds

GRADE 7 · 7.10

PART 1 · READ AND MARK

Underline one animal behavior and one plant structure in the passage. For each, circle a possible result for reproduction and draw a line connecting the cause to the result. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How could a male blackbird's song and red shoulder patches increase his chance of producing young?	**The displays can attract a female to his territory. If he gains a mate, he has a better chance of producing young.**
2	How could a snapdragon's hinged petals help it produce seeds?	**A large bee can push the petals open and brush against pollen. It may carry that pollen to another snapdragon's stigma, allowing fertilization and seed development.**
3	Name one condition that could prevent success for the blackbird and one that could prevent success for the snapdragon, even if each trait works as described.	**A predator could find the blackbird's nest. The snapdragon might receive no suitable visitors.**
4	A student sees one bee enter a snapdragon and says the flower has reproduced successfully. What would you check before accepting that claim, and why?	**Check whether the flower develops seeds. A bee visit is only a possible first step, not proof of successful reproduction.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A trumpet vine has long, tube-shaped flowers that offer nectar to hummingbirds. As a hummingbird feeds, it can carry pollen between flowers, which may lead to seeds. I would compare seed production in flowers visited by hummingbirds with seed production in flowers they did not visit.

Accept other accurate cause-and-effect explanations supported by the passage. For Part 3, the example must differ from both passage examples and include a way to check a reproductive outcome, not just a visit or display.