Colors in the Grass

Use field data to explain how a trait may help an animal survive.

L.3.4.3 "Analyze and interpret data to explain how variations in characteristics among organisms of the same species may provide advantages in surviving, finding mates, and reproducing (e.g.…."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentence in paragraph 1 that describes the field's colors, then circle the larger number in the table's "Alive after three weeks" column. Use these clues to think about which body color may help grasshoppers survive.

Grasshoppers in a Field

1. In a grassy field, one kind of grasshopper has two body colors. Some are green, and some are brown. Birds that hunt grasshoppers use their eyes to find food. The field has many green blades of grass and only a few brown patches of dirt. A body color might affect how easily a bird spots a grasshopper.

2. Imagine scientists counting 40 grasshoppers of this one species. Half have green bodies, and half have brown bodies. After three weeks of birds hunting in the field, the scientists count the grasshoppers still alive. The next spring, they count the young that hatch from eggs laid by the survivors in each color group. Their counts are shown below.

MODEL FIELD COUNTS

Body color	At start	Alive after three weeks	Young hatched next spring
Green	20	14	28
Brown	20	6	10

3. Each color group started with the same number of grasshoppers. The table shows how many survived and how many young hatched from each group. The counts do not tell us what happened to every grasshopper. Some may have died for reasons besides birds. Scientists can use the counts to make a careful explanation, not a sure claim.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which body color seems to help grasshoppers survive in this field? Use the starting and surviving counts.

2. Which color group had more young hatch? How might the survival counts help explain this?

3. How might the field's colors and the way birds hunt help explain the survival counts?

4. Do the counts prove that birds ate every grasshopper that did not survive? Explain.

3 YOUR TURN

Your own words

Imagine this same species lives in a field with mostly brown dirt and only a little green grass. In two or three sentences, predict which body color might help grasshoppers survive and have young there, and explain one reason your prediction might not happen.

ANSWER KEY

Colors in the Grass

GRADE 3 · L.3.4.3

PART 1 · READ AND MARK

Underline the sentence in paragraph 1 that describes the field's colors, then circle the larger number in the table's “Alive after three weeks” column. Use these clues to think about which body color may help grasshoppers survive. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which body color seems to help grasshoppers survive in this field? Use the starting and surviving counts.	**Green. Both groups started with 20 grasshoppers, but 14 green grasshoppers survived compared with 6 brown grasshoppers.**
2	Which color group had more young hatch? How might the survival counts help explain this?	**The green group had 28 young hatch, compared with 10 in the brown group. More green grasshoppers survived, so more may have laid eggs.**
3	How might the field's colors and the way birds hunt help explain the survival counts?	**Green grasshoppers may be harder for birds to spot among the green grass, so more of them may survive.**
4	Do the counts prove that birds ate every grasshopper that did not survive? Explain.	**No. The counts show how many survived, but some grasshoppers may have died for reasons besides birds.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

In a field with mostly brown dirt, brown grasshoppers might be harder for birds to see. More brown grasshoppers might survive and lay eggs, so more of their young might hatch. This might not happen if many brown grasshoppers die for other reasons.

Accept predictions that connect body color to the new field, bird hunting, survival, and young hatching. Students should treat the prediction as possible, not certain.