

# Butterfly Evidence Lab

Use words, numbers, and a sketch to judge a study claim.

**CCSS.ELA-Literacy.CCRA.R.7** “Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. 1”

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## 1 READ AND MARK \_\_\_\_\_ Read it twice

**YOUR JOB** Underline the study question, circle the two bar groups you would use to answer it, and number two sketch details that you should consider before deciding why the results differ.

### Which Flowers Did Monarchs Visit?

- ① During lunch for five days, the Green Team studied where monarch butterflies landed in the school garden. Students watched two equal flower beds, one planted with purple coneflowers and one with yellow marigolds. Each bed had the same number of open flowers. The team counted a butterfly only when it landed, not when it flew past. Their question was, “Do monarchs choose one flower color more often?” The report below includes their method, a graph of their counts, and a sketch of the garden.
- ② Here is the team’s count graph. Each square represents one butterfly landing. Flower bed Mon  
Tue Wed Thu Fri Purple ■■■■■■ Yellow ■■■■ Across five days, purple coneflowers received 21 landings, while yellow marigolds received 10. The bars show the daily totals from the team’s tally sheets. Students watched from 9:30 to 9:45 each day and recorded landings only. A butterfly flying past or resting on a nearby leaf was not included in these totals at all.
- ③ The garden sketch adds location information. It is not drawn to scale. [Gate] [Purple bed] --- Path --- [Yellow bed] [Fence] [Water fountain] The purple bed stood nearer the gate and fountain. The yellow bed stood nearer the fence. A path ran between the beds. The team made the sketch before counting began. The sketch uses labeled boxes rather than detailed plant drawings. Both beds contained equal numbers of open flowers, but they were planted in these separate places throughout the five-day count.

**2 ANSWER WITH EVIDENCE** \_\_\_\_\_ Use the passage

- 1** Which conclusion is supported by both the team’s counting rule and the bar graph? Write a conclusion that names what was counted and does not claim a cause.

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- 2** Why does the graph not settle whether flower color caused the difference? Use one detail from the sketch and one detail from the study report.

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- 3** What information does the sketch provide that the graph does not? What information does the graph provide that the sketch does not?

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- 4** A reader says, “The purple bed got about twice as many landings as the yellow bed.” Is this an accurate use of the graph? Explain with numbers.

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**3 YOUR TURN** \_\_\_\_\_ Your own words

Choose two places or objects at school, such as two reading spots. Make a labeled tally chart or bar graph using at least 10 observations from a small practice survey, then write two sentences: one claim your visual supports and one question your visual cannot prove.

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**PART 1 • READ AND MARK**

Underline the study question, circle the two bar groups you would use to answer it, and number two sketch details that you should consider before deciding why the results differ. Accept any marking that follows this job and points at the right text.

**PART 2 • ANSWERS**

| # | QUESTION                                                                                                                                                     | ANSWER                                                                                                                                                                                                                                                  |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Which conclusion is supported by both the team's counting rule and the bar graph? Write a conclusion that names what was counted and does not claim a cause. | <b>During the five observation periods, the purple coneflower bed had more recorded monarch landings than the yellow marigold bed.</b>                                                                                                                  |
| 2 | Why does the graph not settle whether flower color caused the difference? Use one detail from the sketch and one detail from the study report.               | <b>The beds were in different locations, with the purple bed near the gate and fountain and the yellow bed near the fence. The report describes an observation count of the existing beds, not a test that changed flower colors between locations.</b> |
| 3 | What information does the sketch provide that the graph does not? What information does the graph provide that the sketch does not?                          | <b>The sketch shows the beds' relative locations, including the gate, fountain, path, and fence. The graph shows the number of butterfly landings on each day and the totals.</b>                                                                       |
| 4 | A reader says, "The purple bed got about twice as many landings as the yellow bed." Is this an accurate use of the graph? Explain with numbers.              | <b>Yes. Purple received 21 landings and yellow received 10, so purple received slightly more than twice as many.</b>                                                                                                                                    |

**PART 3 • YOUR TURN (SAMPLE ANSWER)**

Library Corner Choices Beanbag chairs:  7 Table seats:  4 Eleven students in this practice survey chose the beanbag chairs or table seats, and more chose beanbag chairs. This visual cannot prove why students preferred one reading spot.

Accept equivalent conclusions that accurately distinguish what the graph counts from what the sketch shows. For the open task, accept any clear visual with at least 10 observations, a claim supported by its data, and a reasonable limit on what the data can prove.