

Data Detectives

Ask, observe, graph and decide.

GRADE 3 • 3.MDR.5.1

3.MDR.5.1 "Excerpt: Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life."

NAME _____

DATE _____

Find an answer in data

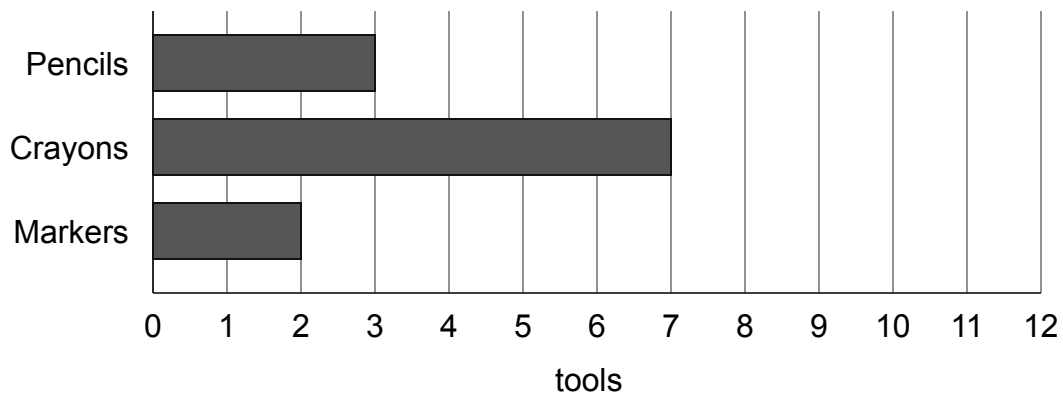
A data question can be answered by collecting information. Count each object once. A bar graph shows how many are in each group. Use the graph to support your answer.

Try it together

Another group asked: Which kind of writing tool is most common in our tray?

Another group: writing tools

Tool



They sorted and counted 12 tools. The crayon bar reaches 7, farther than either other bar. Crayons are most common in this tray.

Materials: a tray of exactly 12 pencils, crayons and markers, prepared by your teacher. Work in a small group to observe the tray; each learner completes their own sheet. Use your own counts in tasks 2-4, 6 and 7. You may explain your reasoning aloud to your teacher after recording your counts and graph.

1. Ask your question

You will observe a tray of 12 writing tools: pencils, crayons and markers. Write a question about their counts. You could ask which kind is most common or compare two kinds.

2. Gather information

Observe your own tray. Sort the tools into the three kinds and count each kind once. Record the counts in the table. Check that your counts add to 12.

Your observed counts

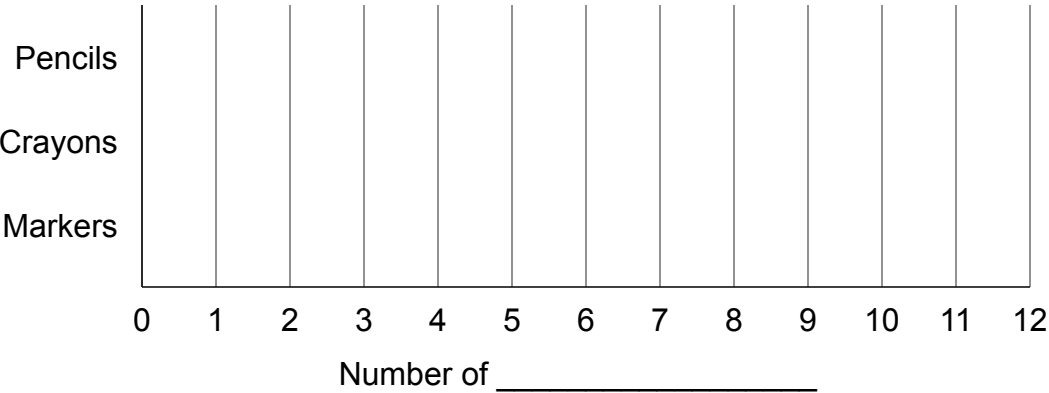
Tool	Count
Pencils	
Crayons	
Markers	

3. Build your graph

Graph your counts from task 2. Begin every bar at 0. Write your own title on the blank title line and finish the number-axis label. A count of 0 needs no bar.

Graph title: _____

Tool



4. Answer with evidence

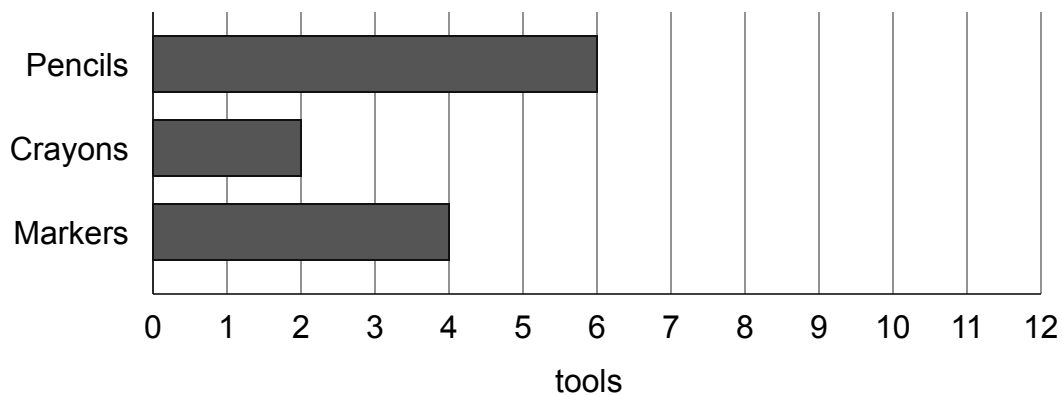
Use your graph to answer the question you wrote in task 1. Include the counts that support your answer.

5. Read another display

This different tray has the counts shown. How many more pencils than crayons are there? Which kind is least common?

Another group: writing tools

Tool



6. Make a useful choice

Look at YOUR tray data. Your teacher can add one extra tool. Which kind would you suggest adding? Explain your choice using your counts.

7. Check a change

Imagine adding 2 pencils to YOUR tray. Which bar would change, and what would its new count be? Would the answer to your question change? Explain.

TEACHER NOTES

Prepare one tray of exactly 12 writing tools per group, drawn from pencils, crayons and markers. Include at least two kinds; repeated objects are intended. Each child writes a question and records the observations. Permit 0 for an absent kind and ties. All answers for the student tray are variable. The completed key graph is labeled as an example only. A count above 12 in the imagined challenge need not be drawn on the supplied graph.

TASK 1

Answers vary. Accept a question answerable from the three observed counts, such as Which kind is least common?

TASK 2

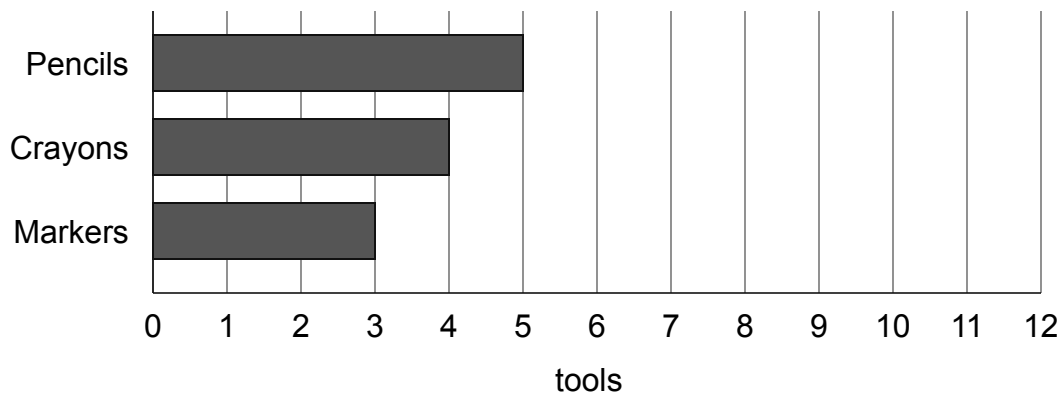
Counts vary with the tray; they must match observations and total 12. Record 0 for an absent kind. Teacher example only: 5 pencils, 4 crayons, 3 markers.

TASK 3

Answers vary. Each bar must match the corresponding count in task 2, with a title and Number of tools as the axis label. The key graph is an example only; do not require these particular counts.

Example only: writing tools

Tool

**TASK 4**

The answer must address the student question and correctly use their actual graph. Accept a tie when applicable.

TASK 5

4 more pencils than crayons: $6 - 2 = 4$. Crayons are least common with 2. Check the reasoning and units as well as the answer.

TASK 6

Answers vary. A reasonable choice is the least common kind, supported by the actual count. Other choices are acceptable with a count-based reason. For a tie, either tied kind may be selected. Check the reasoning and units as well as the answer.

TASK 7

The pencil bar increases by 2; the other bars stay the same. The effect on the original question depends on that question and the actual counts. Judge the explanation against the recorded data; no one fixed answer is required.