

A Question in Two Graphs

Turn individual choices into data you can read and explain.

GRADE 3 • 3.PS.1

3.PS.1 "Excerpt: The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on pictographs and bar graphs."

NAME _____

DATE _____

The marks show the count

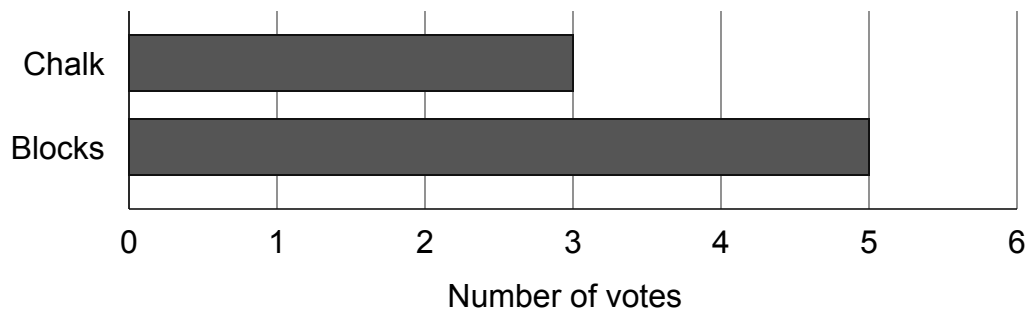
A bar starts at zero. Its length shows a count on the number scale. A picture graph uses a key to tell how many each picture stands for.

Try it together

How many children chose chalk? How does the bar show that number?

Practice choices

Choice



Start at 0 and follow the chalk bar. Its end lines up with 3 on the number scale. The bar shows 3 children. Each equal space on this scale means 1 child.

All survey data are made up for practice. Use a pencil. Show your own answers in the blank spaces.

1. Ask and count

These are 20 made-up survey replies. Each child chose once. Write a question these replies could answer. Count each choice and fill the table.

Survey replies - one reply per child

1. Soccer

2. Art

3. Music

4. Soccer

5. Art

6. Music

7. Soccer

8. Art

9. Music

10. Soccer

11. Art

12. Music

13. Soccer

14. Art

15. Soccer

16. Art

17. Soccer

18. Soccer

19. Soccer

20. Soccer

Count each choice

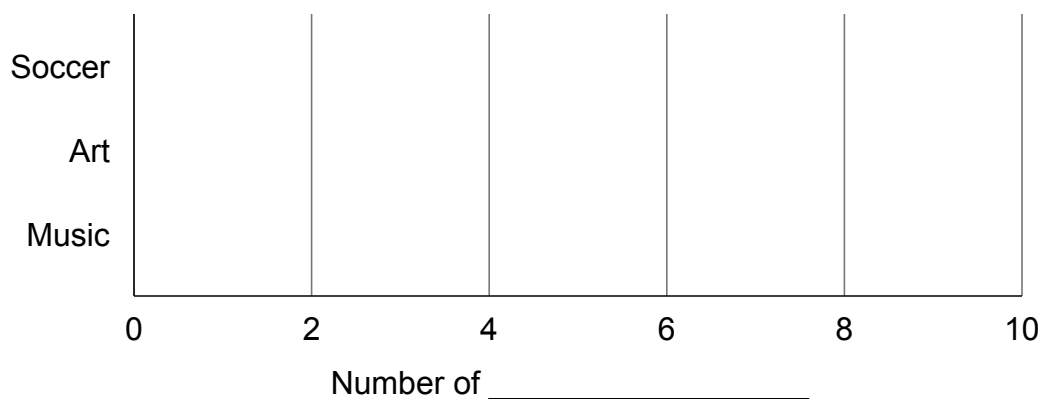
Choice	Number of votes
Soccer	
Art	
Music	

2. Build the bar graph

Use your table from task 1. Add a title and finish the number-axis label. Draw one bar for each choice. Start every bar at 0. Each space on the scale means 2 votes.

Graph title: _____

Choice

**3. Compare your bars**

Which choice has the most votes? How many more votes does it have than Music? Show the subtraction.

4. Check every reply

Add your three counts. How does your total help you check that no reply was lost or counted twice?

5. Show the same data with pictures

Use the counts in your task 1 table. Add a title. Draw circles in each row. Read the key: one circle stands for 2 votes.

Graph title: _____

Choice / Pictures

Soccer

Art

Music



Key: 1 circle = 2 votes

6. Use the results

How many more children chose Soccer and Art together than chose Music? Write both number steps.

7. Make a prediction

Which choice might be most popular if another small group answered the same question? Make a prediction. Use a count from your graph to explain it. Tell a partner why the next group could choose differently.

TEACHER NOTES

Read directions aloud if helpful. Keep the key separate. Accept sensible graph titles and equivalent labels. Check counts, a zero starting point, equal scale spaces, and the picture key. Every numbered survey reply counts once. For open questions, accept different correct answers supported by the displayed data.

TASK 1

Which after-school activity would each child choose? Counts: Soccer 10, Art 6, Music 4. Total 20; each reply counted once.

Count each choice

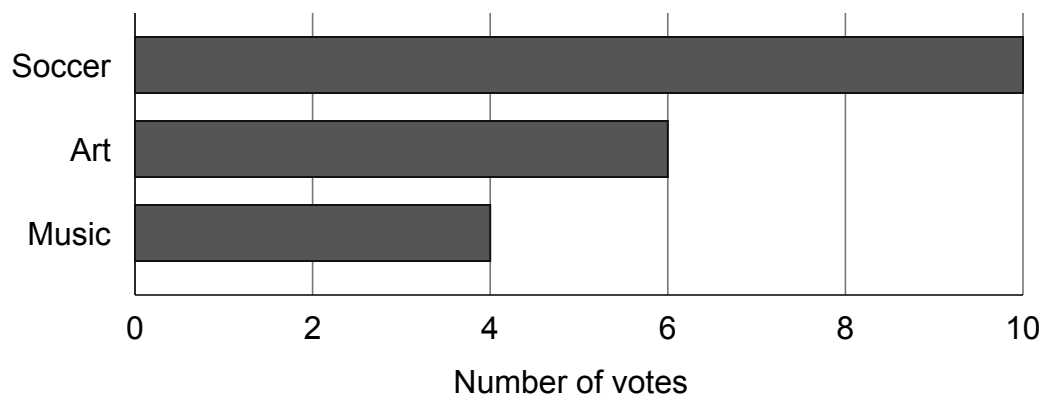
CHOICE	NUMBER OF VOTES
SOCCER	10
ART	6
MUSIC	4

TASK 2

Title may be Class choices; number axis: Number of votes; choice labels are supplied. Bars end at 10, 6, 4, in the printed order.

Class choices

Choice

**TASK 3**

Soccer has most: 10 votes. $10 - 4 = 6$ more than Music.

TASK 4

$10 + 6 + 4 = 20$. The total matches 20 replies. This checks the total, but also check each choice against the numbered replies.

TASK 5

Draw 5 circles for Soccer, 3 circles for Art, 2 circles for Music. Sample title: Class choices. Key: 1 circle = 2 votes. Count by twos to check that each picture row represents the same count as its bar.

Class choices

Choice / Pictures

Soccer ● ● ● ● ●

Art ● ● ●

Music ● ●

● Key: 1 circle = 2 votes

TASK 6

$10 + 6 = 16$; $16 - 4 = 12$ more children. Use the original class survey in task 1, not a different group's data.

TASK 7

Sample prediction: Soccer may be most popular because it received 10 votes, the most in this survey. This is a prediction, not a fact about the next group. A different group may have different preferences. Accept another reasonable prediction supported by the data.