

Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Overview

Students run an anonymous class survey (for example, a favorite fruit vote with tally marks). They make a picture graph and a single-unit bar graph with up to four categories and solve put-together, take-apart and compare problems.

Time: 2 class periods · **Product:** Survey Graph Poster
Standards: 2.MD.D.10
Prerequisite skills: Counting and comparing within 20

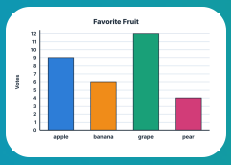
Learning targets

- I can make a picture graph and a bar graph with a scale of 1.
- I can read a graph.
- I can solve problems with data from a graph.

Timing and materials

- Day 1 (40 min): collect votes and make a tally chart and picture graph (Parts 1–2).
- Day 2 (40 min): the bar graph and questions (Parts 3–4).

Materials: Sticky notes for anonymous votes; Tally chart and graph frames (printable support page); Crayons; Poster paper. No accounts, paid products or student personal information are needed.



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

The three versions

- Remedial: hints for a first step, partly filled tables, sentence frames and fewer open choices; the same learning targets.
- Standard: the full task set at grade level; students choose their strategies and models.
- Advanced: open design constraints, missing information, error analysis and a written justification; no hints.

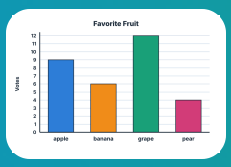
All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- Votes are anonymous; no names are recorded.
- Remind students that each picture stands for 1 and the scale starts at 0.
- Advanced students write three questions about their graph and answer them.
- Before Part 1, read the challenge aloud and ask students to restate the goal.
- Close with a gallery walk: each group explains one strategy.

Rubric

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can make a picture graph and a bar graph with a scale of 1.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can read a graph.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can solve problems with data from a graph.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My survey graph poster is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Solutions · Remedial KEY

Part 1: Tally Chart

Here are the class votes for a favorite fruit (or use your own anonymous votes).

Fruit	Votes
apple	6
banana	4
grape	8

1. How many votes are there in all?
18 votes

Part 2: Picture Graph

Make a picture graph. Each picture stands for 1 vote.

2. How many pictures go in the apple row?
6

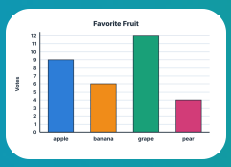
3. Which fruit has the most votes?
grape

Part 3: Bar Graph

Make a bar graph with a scale of 1.

4. How tall is the bar for banana?
4

5. What does the graph need besides bars?
A title, labels, and a scale that counts by 1s



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Part 4: Questions

Use your graph.

6. How many more votes for grape than banana?

4 votes

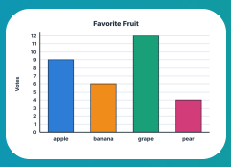
7. How many votes for apple and banana together?

10 votes

Extension

Three more votes for the fruit with the fewest votes come in. Does it still have the fewest?

Answers depend on the data; compare the new total with the others.



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Solutions · Standard KEY

Part 1: Tally Chart

Here are the class votes for a favorite fruit (or use your own anonymous votes).

Fruit	Votes
apple	9
banana	6
grape	12
pear	4

1. How many votes are there in all?
31 votes

Part 2: Picture Graph

Make a picture graph. Each picture stands for 1 vote.

2. How many pictures go in the apple row?
9

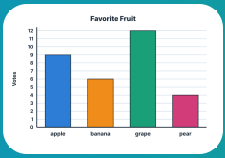
3. Which fruit has the most votes?
grape

Part 3: Bar Graph

Make a bar graph with a scale of 1.

4. How tall is the bar for banana?
6

5. What does the graph need besides bars?
A title, labels, and a scale that counts by 1s



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Part 4: Questions

Use your graph.

6. How many more votes for grape than pear?

8 votes

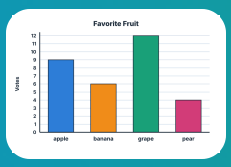
7. How many votes for apple and banana together?

15 votes

Extension

Three more votes for the fruit with the fewest votes come in. Does it still have the fewest?

Answers depend on the data; compare the new total with the others.



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Solutions · Advanced KEY

Part 1: Tally Chart

Here are the class votes for a favorite fruit (or use your own anonymous votes).

Fruit	Votes
apple	14
banana	9
grape	17
pear	6

1. How many votes are there in all?
46 votes

Part 2: Picture Graph

Make a picture graph. Each picture stands for 1 vote.

2. How many pictures go in the apple row?
14

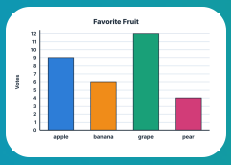
3. Which fruit has the most votes?
grape

Part 3: Bar Graph

Make a bar graph with a scale of 1.

4. How tall is the bar for banana?
9

5. What does the graph need besides bars?
A title, labels, and a scale that counts by 1s



Class Survey Graphs

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Part 4: Questions

Use your graph.

6. How many more votes for grape than pear?

11 votes

7. How many votes for apple and banana together?

23 votes

Part 5: Graph Check

Explain your thinking.

8. Leo says grape has 18 votes because he counted the line at 0. What is wrong?

Read the number at the top of the bar: 17. The line at 0 is not a vote.

9. Write a two-step question about the graph and answer it.

Answers vary; both steps must use graph data correctly.

Extension

Three more votes for the fruit with the fewest votes come in. Does it still have the fewest?

Answers depend on the data; compare the new total with the others.