

## Pictographs and Bar Graphs

Pictographs use pictures (each picture stands for a number) and bar graphs use bars (each bar's height stands for a number). Both ways display data so you can compare quickly.

Graph Type	How to read
Pictograph	Count the pictures and multiply by the key ( $\star = 2$ means $4 \star = 8$ )
Bar graph	Read the height of each bar against the scale on the side

### Key Concepts

1. A **pictograph** uses a small picture to stand for a quantity. The *key* tells you what each picture is worth.
2. A **bar graph** uses rectangular bars; the height (or length) of each bar shows how big that category is.
3. To compare two categories, look at the difference. “How many more” usually means subtraction.
4. For pictographs, always multiply by the key. “5 stars” and “each star = 2” means  $5 \times 2 = 10$ .

### Worked Examples

① From the bar graph: how many students voted for Dog?

 Look at the height of the Dog bar against the side scale. Say it reaches 7. Then 7 students voted for Dog.

 **Answer:** 7

② How many more students chose Dog than Fish?

 Subtract the two counts. Say Dog = 7 and Fish = 2:  $7 - 2 = 5$  more for Dog.

 **Answer:** 5 more

③ What is the total number of votes?

 Add up all categories. If the bars are 7, 5, 4, 2 then the total is  $7 + 5 + 4 + 2 = 18$ .

 **Answer:** 18

### Practice Problems

Use the imagined chart values to answer.

1. Which pet got the most votes? \_\_\_\_\_
2. Which pet got the fewest votes? \_\_\_\_\_
3. How many voted for Cat? \_\_\_\_\_
4. How many more chose Cat than Fish?  
\_\_\_\_\_
5. Total votes for Cat and Fish? \_\_\_\_\_
6. If 2 more students vote Dog, new total?  
\_\_\_\_\_
7. In a pictograph, each  $\star = 2$ .  $4 \star = ?$   
\_\_\_\_\_

8. Each ★ = 5. 3 ★ = ? \_\_\_\_\_
9. Each ★ = 2. Half a ★ = ? \_\_\_\_\_
10. Bar reaches 8. Another reaches 5. Difference? \_\_\_\_\_
11. Bar A: 7, Bar B: 4, Bar C: 9. Total? \_\_\_\_\_
12. Bar A: 7, Bar C: 9. How many more for C? \_\_\_\_\_

**Study Tips**

- 👉 Always check the *key* on a pictograph first. “Each picture = 2” is different from “each picture = 5.”
- 👉 For “how many more,” subtract the smaller from the larger.
- 👉 For totals, add every category.

**Word Problems**

1. A pictograph shows: Soccer = 5 balls, Baseball = 3 balls. Each ball = 2 students. How many more students like soccer?

Answer: \_\_\_\_\_

2. A bar graph shows 8 red cars, 5 blue cars, and 7 white cars. How many cars were counted in all?

Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

1. The tallest bar wins. (Example answer: Dog.)

 **Answer:** *Dog*

2. The shortest bar. (Example: Fish.)

 **Answer:** *Fish*

3. Read the Cat bar value. (Example: 5.)

 **Answer:** 5

4. Cat – Fish. (Example:  $5 - 2 = 3$ .)

 **Answer:** 3 *more*

5. Cat + Fish. (Example:  $5 + 2 = 7$ .)

 **Answer:** 7

6. Old Dog total +2. (Example:  $7 + 2 = 9$ .)

 **Answer:** 9

7.  $4 \times 2 = 8$ .

 **Answer:** 8

8.  $3 \times 5 = 15$ .

 **Answer:** 15

9. Half of 2 = 1.

 **Answer:** 1

10.  $8 - 5 = 3$ .

 **Answer:** 3

11.  $7 + 4 + 9 = 20$ .

 **Answer:** 20

12.  $9 - 7 = 2$ .

 **Answer:** 2 *more*

**Word Problems**

1. Soccer 10 vs Baseball 6: 4 more for soccer.

 **Answer:** 4 *more*

2.  $8 + 5 + 7 = 20$  cars total.

 **Answer:** 20 *cars*

# Want a Complete Grade 3 Math Program?

## Check Out Our Michigan M-STEP Grade 3 Math Bundle!



### Michigan M-STEP Grade 3 Math Bundle

Practice tests, complete answer keys, and step-by-step explanations  
Everything a third grader needs to feel ready!

Tests +  
Answer Keys  
One Bundle

Find it online:

<https://www.effortlessmath.com/product/michigan-m-step-grade-3-math-made-ridiculously-simple/>

**Important:** This bundle combines the practice and the explanations into one easy-to-print package designed for Grade 3 students. **Made for parents, teachers, and tutors who want everything in one place.**

#### Full Practice Tests

- ✓ Complete M-STEP-style practice tests
- ✓ Mirrors the real exam format and difficulty
- ✓ Builds test-taking confidence
- ✓ Aligned with state Grade 3 math standards

Start with a full-length practice test!

#### Step-by-Step Answer Keys

- ✓ Every question worked out, not just an answer
- ✓ Friendly, third-grade-ready explanations
- ✓ Catches and explains common misconceptions
- ✓ Parents can help even without a math background

Learn from every mistake!

#### Single-Skill Worksheets

- ✓ Targets one Grade 3 math skill per page
- ✓ Covers place value, multiplication, fractions, measurement, geometry
- ✓ Includes a Quick Review + Practice + Word Problems
- ✓ Built-in friendly Answer Key for self-checking

Master one skill at a time!