LESSON MAKER PRO

Graph Detectives

Read, build, and think about scaled graphs.

GRADE 3 · 3.DS.A.1

3.DS.A.1 "Ask and answer questions by collecting, organizing and summarizing data, recognizing the importance of context when analyzing data. Create a scaled data visualization (e.g., picture graph, bar graph for categorial data..."

NAME _____ DATE _____

READ THE KEY

A graph's key tells you how many people or things each symbol stands for. Multiply the number of symbols by the key to find the total. Before you use a graph to make a claim, think about who or what the data came from.

WORKED EXAMPLE

How many more votes did the kite get than the boat?

Votes for a Class Mural

Boat	★ ★
Kite	★ ★ ★ ★

Key: ★ = 7 votes

1. Boat: 2 × 7 = 14 votes.
2. Kite: 4 × 7 = 28 votes.
3. 28 - 14 = 14 votes.

Answer: The kite got 14 more votes.

PRACTICE 6 problems

1 How many students voted in all?

Favorite Playground Spots

Swings	● ● ●
Slide	● ● ● ●
Field	●

Key: ● = 2 students

ANSWER _____

2 How many more books were checked out on Tuesday than on Wednesday?

Library Books Checked Out

Monday	■ ■
Tuesday	■ ■ ■
Wednesday	■

Key: ■ = 4 books

ANSWER _____

3 Which snack got the most votes? How many votes were cast in all?

SNACK VOTES



votes, count by 3

ANSWER _____

_____

4 Make a picture graph from the table. Use 1 symbol for 4 ribbons. How many symbols will you draw for each color?

RIBBONS MADE FOR THE FAIR

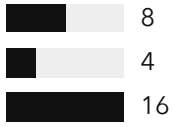
Color	Ribbons
Red	8
Blue	12
Green	4

ANSWER _____

_____

5 How many more cards were made on Friday than on Thursday?

CARDS MADE EACH DAY



cards, count by 4

ANSWER _____

6 How many students chose either activity? A half symbol stands for half of the number in the key.

After-School Activities

Chess	◆ ◂
Dance	◆ ◆ ◂

Key: ◆ = 6 students

ANSWER _____

APPLY IT Show your work

1 Your class counted decorations for a school party. Use the table to draw a picture graph. Let 1 symbol stand for 6 decorations. How many symbols does each row need?

PARTY DECORATIONS

Decoration	Number
Balloons	6
Paper flowers	12
Streamers	18

ANSWER _____

2 A class asked students at one recess which game they wanted to play. How many chose tag? Does this graph prove tag is the favorite game at every recess? Explain.

Game Choices at One Recess

Tag	▲ ▲ ▲ ▲
Hopscotch	▲ ▲
Jump rope	▲ ▲ ▲

Key: ▲ = 2 students

ANSWER _____

CHALLENGE One step up

Which craft got the most votes? If you made a new picture graph with 1 symbol for 2 votes, how many symbols would that craft need? Can you tell from this graph which craft students in other grades would choose most? Explain.

Third-Grade Craft Votes

Painting	♥ ♥ ♥
Paper folding	♥
Bead art	♥

Key: ♥ = 4 votes

WORK SPACE AND ANSWER

ANSWER KEY

Graph Detectives

GRADE 3 · 3.DS.A.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	How many students voted in all?	**16 students**
2	How many more books were checked out on Tuesday than on Wednesday?	**8 books**
3	Which snack got the most votes? How many votes were cast in all?	**Pretzels; 27 votes in all**
4	Make a picture graph from the table. Use 1 symbol for 4 ribbons. How many symbols will you draw for each color?	**Red: 2 symbols; Blue: 3 symbols; Green: 1 symbol**
5	How many more cards were made on Friday than on Thursday?	**12 cards**
6	How many students chose either activity? A half symbol stands for half of the number in the key.	**24 students**

PART 2 · APPLY IT

1. **Balloons: 1 symbol; paper flowers: 2 symbols; streamers: 3 symbols.** Divide each number by 6 to find its symbol count. Accept any picture graph with a key showing that 1 symbol stands for 6 decorations.
2. **8 students chose tag. No, the graph shows choices from only one recess.** Multiply 4 symbols by 2 students per symbol. The choices at another recess could be different.

CHALLENGE

Painting got the most votes. It got 12 votes, so it would need 6 symbols with the new key. No, the graph only shows third-grade votes.

For graphs students draw, accept any symbol if the key and symbol counts are correct. Accept other clear explanations that one group or one recess cannot tell us what every group or recess would choose.