

Name \_\_\_\_\_

## Collect and Organize Data

**Essential Question** How can you collect and organize data by conducting a survey or making an observation?

### UNLOCK the Problem REAL WORLD

**Data** is a set of numbers or pieces of information. Conducting a survey is one way to collect data. When you ask people questions and record their answers, you are conducting a survey. Making an observation is another way to collect data. When you collect data by looking at an object or event, you are making an observation.

You can use a tally table to record the data you collect.



**Activity** Conduct a survey of the students in your class and record the results in a tally table.

**STEP 1** Think of a survey question that has at least three possible answers. Write your question on the line below.

Survey question: \_\_\_\_\_

**STEP 2** Complete the labels of the tally table. Include a title and headings. List at least three possible answers to your question.

**STEP 3** Survey the students in your class. Record the results in your tally table.

**STEP 4** Analyze your data.

Which choice got the most tally marks?

\_\_\_\_\_

Which choice got the least tally marks?

\_\_\_\_\_

How many students did you survey? \_\_\_\_\_

	Tally

#### Remember

A tally mark stands for one vote. It looks like this: I. Five tally marks look like this: IIII.

**Math Talk** Describe how your survey results compare with those of a friend.

## Examples

### **A** Survey Questions

- Would you rather have a brown crayon or a beautiful red crayon?  
(Brown Crayon, Beautiful Red Crayon)

You can answer this question, but the word *beautiful* might lead you to choose the red crayon. It is not a fair question. So, this survey question is not a good question.

- Do you like the color and smell of bananas? (Yes, No)

You cannot answer this question if you like the color but not the smell. The question asks about too many things. So, this survey question is not a good question.

- How did you get to school today? (Bus, Car, Walk, Other)

You \_\_\_\_\_ answer this question, even if you rode a horse to school. It is fair and does not ask about too many things. So, this

survey question \_\_\_\_\_ a good question.

### **B** Observations

- Record the number of phone calls you get in 1 week.

It is possible to count how many calls you get each day for a week. So, this observation is a good way to collect data.

- Sit in your house and record the birds that land on the roof.

It \_\_\_\_\_ possible to see your roof from inside your house. So, this

observation \_\_\_\_\_ a good way to collect data.



## Share and Show



Tell if the survey question or observation is good.

1. What kind of pet do you like best? (Cat, Dog, Other)

You \_\_\_\_\_ answer this question, even if you like parakeets

best. So, this survey question \_\_\_\_\_ a good question.

2. Observe children in the park and record how many like math.

It \_\_\_\_\_ possible to look at children to know if they like math.

So, this observation \_\_\_\_\_ a good way to collect data.



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Tell if the survey question or observation is good.  
Explain your reasoning.

3. Would you rather eat a boring apple or a pineapple?  
(Boring Apple, Pineapple)

\_\_\_\_\_  
\_\_\_\_\_

4. Observe three turtles and record the number of seconds it takes them to each walk 2 feet.

\_\_\_\_\_  
\_\_\_\_\_

Use the tally table for 5–6.

5. Liam recorded the results of a survey of his classmates in the tally table at the right. What survey question did Liam most likely ask?

Subject	Tally
Reading	
Math	
Science	
Other	

\_\_\_\_\_

6. How many classmates were surveyed? \_\_\_\_\_

**Math Talk** Write an unfair survey question and explain why it is not fair. Then correct the question so it is fair.

## On Your Own .....

Tell if the survey question or observation is good.  
Explain your reasoning.

7. What is your favorite sandwich? (Ham, Turkey, Egg, Other)

\_\_\_\_\_  
\_\_\_\_\_

8. Do you like the feel and warmth of wool? (Yes, No)

\_\_\_\_\_  
\_\_\_\_\_

9. Record the number of times the letters *r*, *s*, and *t* are used on a page in a book.

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Use the tally table at the right for 10–12.

Drawing Tool	Tally
Color Pencil	
Crayon	
Marker	
Other	

10. Nella recorded the results of a survey in this tally table. What survey question did she most likely ask?
- 
11. How many people were surveyed? \_\_\_\_\_
12. **HOT** What if Nella's survey question was, "Which two drawing tools did you use for your art project?" How many tallies would Nella record for each person she surveyed? How does that change your answer to Problem 11?
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13. **HOT** **Write Math** Practice: Copy and Solve Write a survey question about insects. Provide at least three possible answers to your question.

## Problem Solving

Use the tally table at the right for 14–18.

14. Tally the number of times each vowel occurs in this sentence.
15. Which vowel occurs most often? \_\_\_\_\_
16. How many vowels were there in all? \_\_\_\_\_
17. **Write Math** Pose a Problem Write a problem similar to Problem 16 that has 6 as its answer.
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Vowel	Tally
A	
E	
I	
O	
U	

18. **Test Prep** In the tally table above, which vowels occurred the same number of times?
- (A) A and U; E and O      (C) I and U
- (B) A and U; I and O      (D) I, O, and U

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Tell if the survey question or observation is good.  
Explain your reasoning.

- Where are you going for summer vacation?  
(Florida, New York, California, Staying Home)

**Not good; I cannot answer this question if I am going somewhere not listed, such as Ohio.**

- Record the number of pieces of mail you get in one week.
- \_\_\_\_\_
- \_\_\_\_\_

Use the tally table at the right for 3 and 4.

- Joan recorded the results of a survey of her classmates in the tally table at the right. What survey question did Joan most likely ask?
- \_\_\_\_\_
- \_\_\_\_\_

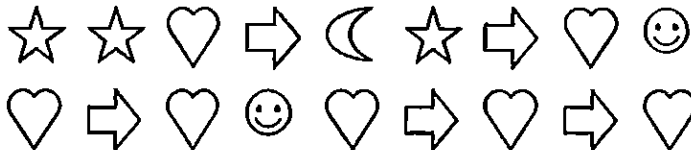
Juice	Tally
Apple	II
Orange	III
Grape	
Other	

- How many classmates did Joan survey? \_\_\_\_\_

**Problem Solving** 

Use the tally table at the right for 5–7.

- Matt has the following stickers. Tally the number of each type of sticker Matt has.



Sticker	Tally
☆	
➡	
♥	
😊	
☾	

- Which type of sticker occurs least often? \_\_\_\_\_
- Matt gives 3 heart stickers to a friend. How many heart stickers does he have left? \_\_\_\_\_

## Lesson Check

- Which of the following survey questions or observations is good?
  - Do you like cheese pizza or stinky anchovy pizza better? (Cheese, Stinky Anchovy)
  - Which season do you like best? (Spring, Summer, Fall, Winter)
  - Observe and record the number of apples your friend eats in one week.
  - Observe students in your class and record how many have an older brother.
- Carlton recorded the results of a survey of his classmates in this tally table. How many students did Carlton survey?
  - 10
  - 19
  - 22
  - 37

Movie	Tally
Comedy	
Action	
Drama	
Other	

## Spiral Review

- Which symbol makes the following number sentence true? (Lesson 3.5)  
 $(7 + 3) \times 5 \bigcirc (7 \times 7) + 1$ 
  - =
  - <
  - >
  - +
- Jamaica buys 24 flowers at the nursery. She plants some flowers,  $f$ , on Saturday. She has 13 flowers left to plant.  
 $24 \bigcirc f \bigcirc 13$   
 Which symbols make the equation true? (Lesson 3.8)
 

(A) +, =	(C) =, +
(B) =, -	(D) ÷, =
- At a wedding reception, there are 25 tables. Each table has 8 party favors. How many party favors are there in all? (Lesson 4.5)
  - 40
  - 200
  - 260
  - 1,640
- Which number is 200 more than the product of 6 and 3,950? (Lesson 4.10)
  - 23,500
  - 23,630
  - 23,700
  - 23,900