

Data and Probability

Flipping a Two-Color Counter

You need

- two-color counter
- red crayon
- yellow crayon

Flip the counter to see which color it will land on.

STEP 1 Flipping the Counter

Did you flip red or yellow? _____



STEP 2 Recording Results

Color 1 box to show the color you flipped.

--	--	--	--	--	--	--	--	--	--

What do you think will happen if you flip the counter 10 times?

STEP 3 Gathering Data

Flip the counter 9 more times.
Color a box to show each flip.

How many times did you flip red? _____

How many times did you flip yellow? _____

What do you think you would flip next?





School-Home Connection

Dear Family,

Today we started Chapter 6 in *Think Math!* In this chapter, I will collect, organize, and graph data and describe how likely things are to happen. There are NOTES on the Lesson Activity Book pages to explain what I am learning every day.

Here are some activities for us to do together at home. These activities will help me understand data and probability.

Love,

Family Fun

Tossing Sums

Work with your child to practice sums to 12.

- Gather two number cubes labeled 1 to 6 and a sheet of paper.
- Have your child toss the number cubes and find the sum of the numbers tossed.
- Check the sum and record it on a sheet of paper.
- Repeat this for at least 10 tosses, making a list of each sum tossed.
- Ask your child "Which number came up most often? Which came up least often?"



Sums Tossed		
8	5	3
5	2	9
7	8	8
4		

Coins in a Bag

Work with your child to record data in a table.

- Gather 2 pennies, 2 nickels, and a paper bag. Place all 4 coins in the bag.
- Ask your child what combinations of two coins could be pulled out of the bag. Work together to make a table to show all of the possible combinations.
- Have your child pull 2 coins out of the bag without looking. Use tally marks to record the combinations of coins he or she pulled. Return the coins to the bag and repeat.
- After a few rounds, ask your child which combinations were pulled most often.



		
		I
		

Collecting and Tallying Data

NCTM Standards 1, 5, 6, 7, 8, 9, 10

Joel asked his friends if they have a dog.

Do you have a dog?		
yes	no	no
no	yes	yes
no	yes	no
yes	no	yes
no	no	no

|||| means 5.



1. Use tally marks to show the data.

Yes	No

2. How many friends have dogs?

_____ friends

3. How many friends do not have dogs?

_____ friends

 4. Do most of his friends have dogs?
Explain how you know.



NOTE: Your child is learning to use tally marks to record and analyze data. Ask your child to use tally marks to keep track of the birds or cars they see outside.



Lisa asked her friends if they like to swim.

Do you like to swim?	
Yes	No

5. How many friends like to swim?

13 friends

6. How many friends do not like to swim?

_____ friends

7. How many friends did Lisa ask?

_____ friends

8. How many more friends like to swim than do not like to swim?

_____ more friends

 9. Explain how you found the answer to Question 8.

Problem Solving

10. Max asked 10 friends if they like pizza. 6 more children like pizza than do not like pizza.

Draw tally marks to show the results.

Do you like pizza?	
Yes	No

Making Graphs with Objects and Pictures

NCTM Standards 1, 5, 6, 7, 8, 9, 10

Kylie sorts her buttons by shape.

1. There are  circle buttons.
2. There are more _____ buttons than circle buttons.
3. There are fewer _____ buttons than star buttons.
4. There are _____ buttons in the graph.

Kylie's Buttons						

Jim sorts blocks by size and shape.

5. There are _____ small triangles.
6. There are more _____ than _____.
7. There are fewer _____ than any other kind of block.
8. There are _____ blocks in the graph.

Shape Blocks					



NOTE: Your child is learning to sort objects and to represent data in graphs. Ask your child how many small triangles there are in the picture graph above.

9. Use the clues to color the graph.

Bouncy Balls			
○			
○			
○			○
○	○		○
○	○		○
○	○	○	○
○	○	○	○
○	○	○	○

Clues
There are 8 green balls.
There are 3 red balls.
There are more blue balls than yellow .

Each column in the graph shows one color.



 10. How did you know which circles to color blue and which to color yellow?

Challenge

II. Use the graph above to complete the sentence.

There are 2 more _____ balls
than _____ balls.

Making Graphs with Pictures and Symbols

NCTM Standards 1, 2, 5, 6, 7, 8, 9, 10

Some children chose their favorite fish. The table shows their choices.

1. Use the data in the table to make a graph.

Fish We Like			
			
Goldfish 	Guppy 	Angelfish 	Neon 

Key: Each 😊 stands for 1 child's choice.

Which of these fish do you like best?	
Goldfish	
Guppy	
Angelfish	
Neon	

Draw 😊 to show each child's choice.



2. Which fish did the most children choose?

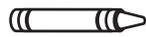
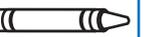
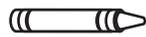
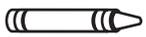
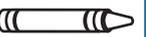
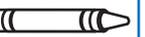
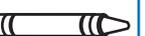
 3. How is the graph like the table? How is it different?



NOTE: Your child is learning to make and use pictographs. Ask your child to tell how many children chose angelfish in the graph above.



Matthew asked his classmates to name their favorite colors. The graph shows his data.

Favorite Colors							
red							
yellow							
blue							
orange							
purple							

Key: Each  stands for 1 child's choice.

4. How many children chose purple?  children
5. Which color did the fewest children choose? _____
-  6. How many more children chose red than blue?
Explain how you know.

Problem Solving

7. Use the clues to complete the graph.

- 3 more children chose baseball than football.
- 2 more children chose soccer than football.

Favorite Sports					
basketball					
baseball					
soccer					
football					

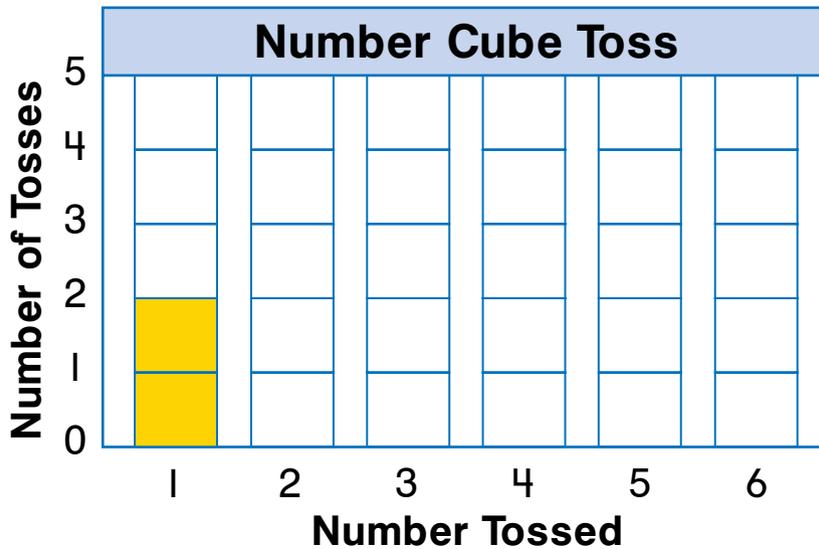
Key: Each  stands for 1 child's choice.

Bar Graphs and Probability

NCTM Standards 1, 5, 6, 7, 8, 9, 10

Trevor tossed a number cube 20 times.
The tally table shows his results.

1. Use the tally table to complete the bar graph.



Number of Cubes	Number of Times
1	
2	
3	
4	
5	
6	

-  2. How did you know how high to color each bar in the graph?

3. Which number did Trevor toss the most? _____

4. Which number did Trevor toss the least? _____



NOTE: Your child is learning to make and analyze bar graphs. Ask your child to use the bar graph above to tell how many times Trevor tossed the number 6.

5. What sums can you get when you toss two number cubes? Write the missing sums.

+	1	2	3	4	5	6
1	2					
2				6		
3						
4			7			
5						
6						

6. What are all the ways to toss a sum of 4?

Challenge

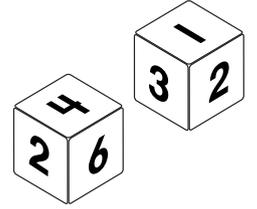
7. What are all the ways to toss a sum of 7?

1	6				

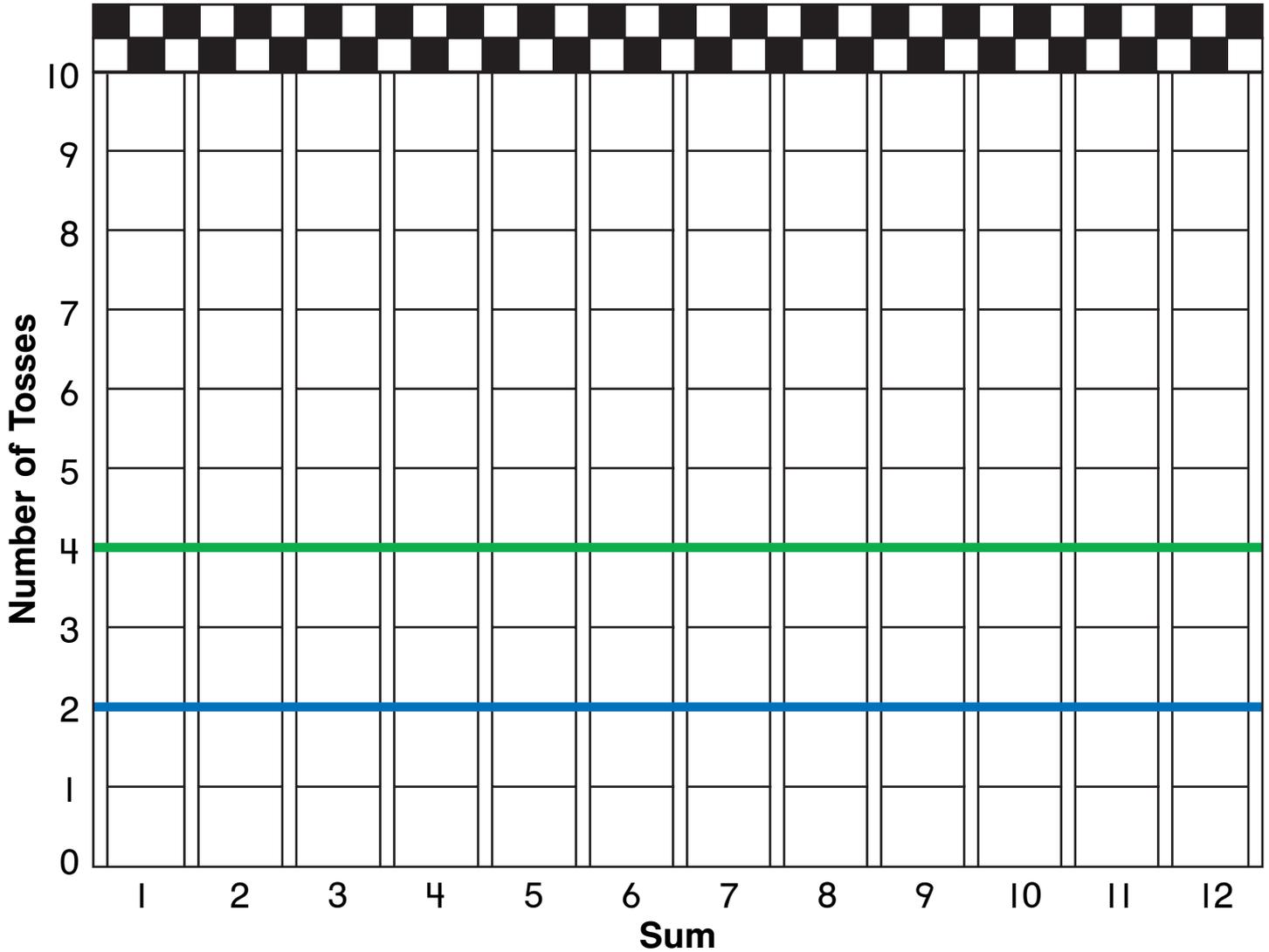
Investigating Probability

NCTM Standards 1, 5, 6, 7, 8, 9, 10

- Toss two number cubes.
Color a box for the sum.
Which numbers win? Have fun!



Number Race



Winner!



Winner!



Winner!



NOTE: Your child is learning to describe events as *certain*, *uncertain*, *likely*, and *unlikely*. Ask your child to name events that are either *likely* or *unlikely*.

Is it *possible* or *impossible*?

2. A car will drive by the school.



possible

3. A cow will fly over your house.



impossible

4. A bird will land in front of a house.



 5. Draw a picture of an impossible event.

Challenge

Is it *certain*, *likely*, or *unlikely*? Draw lines to match.

6. You will wear matching socks tomorrow. certain

7. The sun will rise tomorrow morning. likely

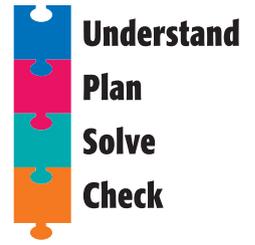
8. All of your classmates will go to the dentist today. unlikely



Problem Solving Strategy

Make a Table

NCTM Standards 1, 2, 5, 6, 7, 8, 9, 10



Complete the table to solve the problem.

1. How many more children chose apples than grapes?

Favorite Kind of Fruit	
apples	grapes
bananas	bananas
apples	apples
grapes	apples
bananas	grapes
bananas	apples

Favorite Kind of Fruit	
 apples	
 grapes	
 bananas	

_____ more children

2. What are all the ways to add two numbers to get a sum of 10?



10

	0											
	10											

_____ ways



NOTE: Your child is exploring different ways to solve problems. Making a table can help to organize the information you need to solve a problem.



Problem Solving Test Prep

1. Kelly buys 8 pairs of socks. Some are white. The rest are black. She has 2 more white pairs than black. How many pairs are white?

- (A) 3 (C) 8
(B) 5 (D) 10

2. Paolo has 18¢. Erasers cost 5¢ each. How many erasers can he buy?

- (A) 3 (C) 18
(B) 4 (D) 20



Show What You Know

3. Derek makes a pattern with squares.



How many squares are in the next figure? _____
Explain.

4. Ann has some dimes and pennies. She has 32¢. How many dimes and pennies could she have?

_____ dimes _____ pennies
Explain.

Chapter 6

Review/Assessment

NCTM Standards 1, 2, 5, 6, 7, 8, 9, 10

Claire asked her classmates if they like apples. Lesson 1

1. Use tally marks to show the data.

Yes	No

Do you like apples?		
yes	no	yes
yes	yes	yes
no	yes	no
yes	no	yes
no	yes	yes

2. How many classmates like apples? _____ classmates

Use the graph for Problems 3 and 4. Lesson 2

- 3. There are _____ circles.
- 4. There are more _____ than squares.

Shapes		
		
		
		
		
		
		

Use the graph for Problems 5 and 6. Lesson 3

- 5. Which pet did most children choose?

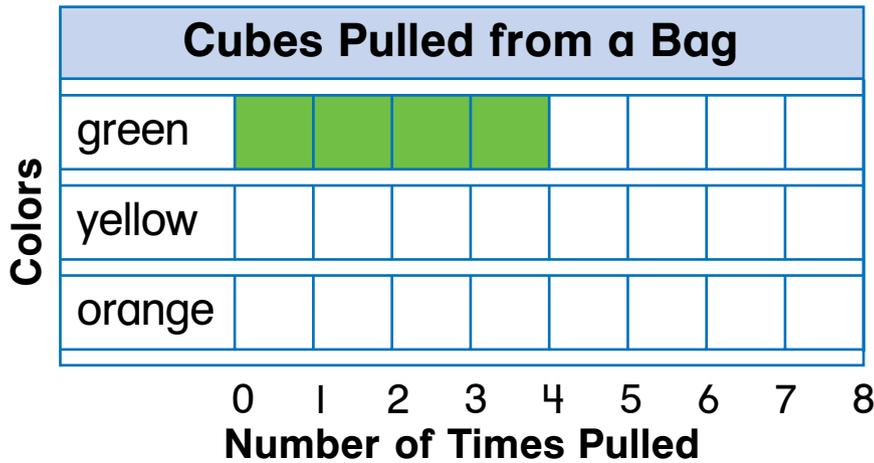
- 6. How many more children chose dogs than cats?
_____ more children

Favorite Pets							
cats							
dogs							
hamsters							

Key: Each  stands for 1 child's choice.

David pulled cubes out of a bag without looking. The tally table shows his results. Lesson 4

7. Use the table to complete the bar graph.



Colors	Number of Times Pulled
green	
yellow	
orange	

8. Which color did David pull the fewest times? _____

9. How many times did David pull out a yellow cube? _____ times

Is it *certain, likely, or unlikely*?

Draw lines to match. Lesson 5

- | | |
|---|----------|
| 10. All of your classmates will wear the same color shirt tomorrow. | certain |
| 11. It will rain sometime this year. | likely |
| 12. Tomorrow it will be today. | unlikely |

Problem Solving Lesson 6

13. Mr. Lee has 4 tables in his classroom. He wants 4 chairs around each table. How many chairs does he need?

tables	1	2	3	4
chairs				

_____ chairs