

Doubling, Halving, and Fractions

Fair Shares

You need

- paper bag
- counters

Take a handful of counters out of the bag.

STEP 1 Counting

How many counters did you take? _____

Do you think you can share the counters equally with your partner? _____

STEP 2 Sharing

Are there leftover counters? _____

Is the total number of counters even or odd? _____

STEP 3 Predicting Leftovers

Repeat the activity several times. Record each time.

Number of Counters						
Any Leftover?						
Even or Odd?						

How can you predict if there will be a leftover?





School-Home Connection

Dear Family,

Today we started Chapter 8 in *Think Math!* In this chapter, I will learn about mirror lines and I will draw mirror images. I will double and halve amounts of money and find a number that is halfway between two numbers. I will also learn how to write halves, fourths, and thirds. 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 doubling, halving, and fractions.

Love,

Family Fun

Doubling Coins

Work with your child to double a collection of dimes, nickels, and pennies.

- Gather 18 pennies, 18 nickels, 18 dimes and a number cube.
- Players take turns tossing the number cube and taking that number of coins from a mixed pile of dimes, nickels, and pennies.
- Each player counts to find out how much the collection is worth and then uses more coins to make a collection that is worth twice as much.
- Players use their amounts to complete this sentence: "I had ____¢. I doubled my coins and then I had ____¢."



21¢

42¢

Halfway Between

Work with your child to find the number that is halfway between two numbers on a number line.

- Gather two number cubes and two small objects such as dry beans or toys.
- On a large sheet of paper draw a number line from 0 to 12 as shown below.



- Place one object above 0 on the number line. Toss the number cubes and find the sum. Place the other object above this number on the number line.
- Each player guesses the number that is halfway between these numbers. Then work together to move the objects toward each other, one step at a time.
- The player whose guess was the closest, wins a point. Play for at least four more rounds.

Mirrors and Folding

NCTM Standards 3, 6, 7, 8, 9, 10

Draw the mirror image.

1.



2.



3.

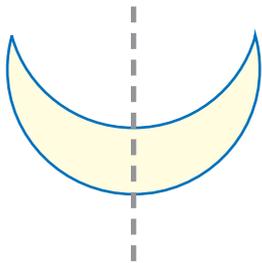


4.



Draw a line to show halves.

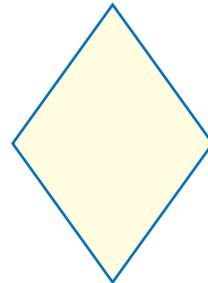
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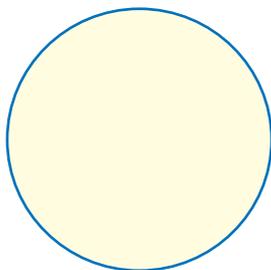
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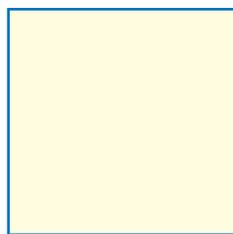
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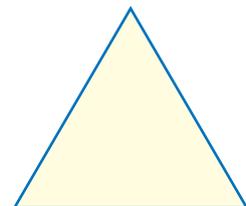
8.



9.



10.



NOTE: Your child is learning to recognize and create symmetric figures. Place a mirror on the line to see the other half of each figure.

Draw the mirror image.

<p>11.</p>	<p>12.</p>	<p>13.</p>
<p>14.</p>	<p>15.</p>	<p>16.</p>
<p>17.</p>	<p>18.</p>	<p>Line up a mirror on the gray line to see the mirror image.</p>



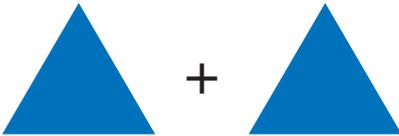
Challenge

<p>19.</p>	<p>20.</p>
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Doubling Your Money

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

What are the missing costs?

		
1.	5¢	10¢
2.	10¢	
3.	6¢	
4.	8¢	
5.	20¢	
6.		60¢
7.		50¢
		



NOTE: Your child is learning to double collections of coins and amounts of money. To practice, tell your child the cost of one item and ask your child to tell you the cost of two items.

Complete each sentence.
You may use coins to help.

8. If one balloon costs 50¢ ,
then two balloons cost _____.

9. If one balloon costs _____ ¢ ,
then two balloons cost 30¢ .

10. If one balloon costs 25¢ ,
then two balloons cost _____ ¢ .

11. If one balloon costs _____ ¢ ,
then two balloons cost _____ ¢ .

Make your own.

12. If one balloon costs _____ ¢ ,
then two balloons cost _____ ¢ .

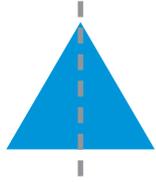
Problem Solving

13. If a big balloon costs 24¢ and a little one costs 7¢ , then two big balloons and two little balloons
cost _____ ¢ .

Sharing to Find Half

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

What are the missing costs?

	Total 	Half 
1.	20¢	10¢
2.	40¢	
3.		30¢
4.	50¢	
5.		15¢
6.	18¢	
7.	24¢	

Use coins to help you.



NOTE: Your child is learning to halve money amounts.

Ask your child to share a collection of dimes and pennies equally between two people.

Complete each sentence.

8. Two friends share 80 marbles equally.

Each friend gets 40 marbles.

9. Two friends share _____ marbles equally.

Each friend gets 24 marbles.

10. Two friends share 26 marbles equally.

Each friend gets _____ marbles.

Make your own.

11. Two friends share _____ marbles equally.

Each friend gets _____ marbles.

Problem Solving

12. A  costs 62¢.

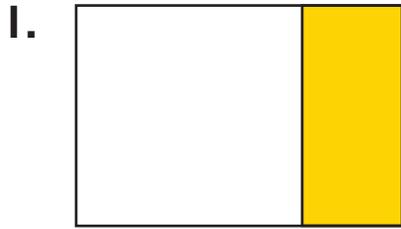
A  costs half as much.

A  and a  cost _____¢.

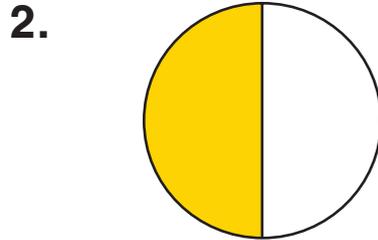
Exploring One Half

NCTM Standards 1, 2, 3, 6, 7, 8, 9, 10

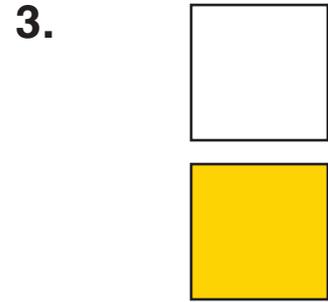
Is one half shaded?



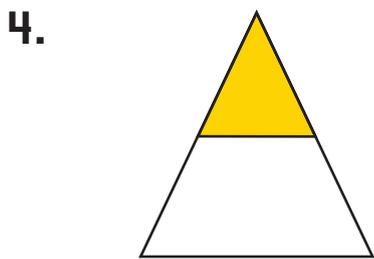
yes
no



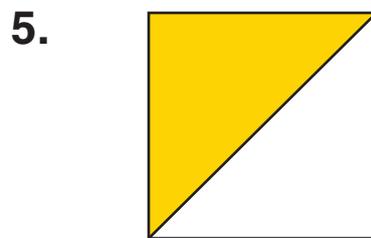
yes
no



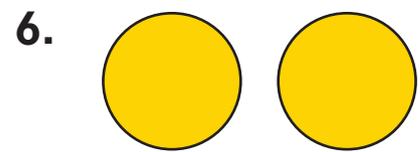
yes
no



yes
no

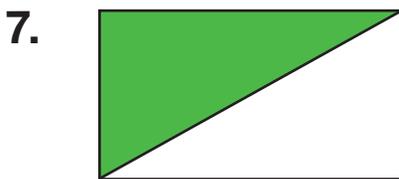


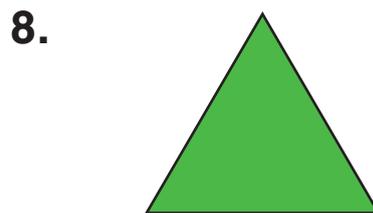
yes
no

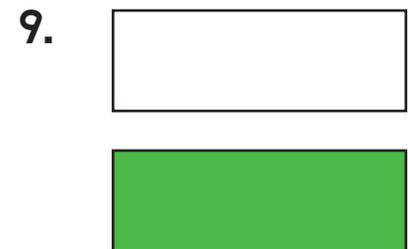


yes
no

How much is shaded?





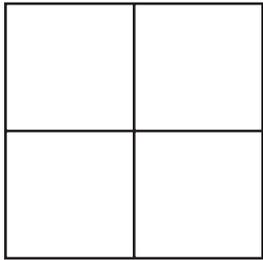




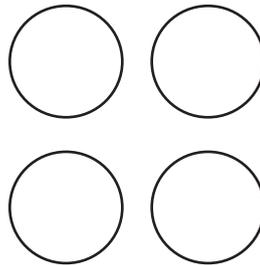
NOTE: Your child is learning to find half of an object and half of a set of objects. Ask your child to find half of a collection of objects in your home.

Color one half.

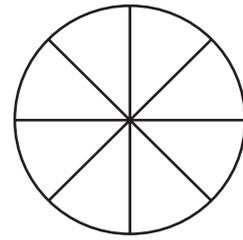
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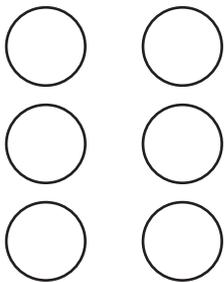
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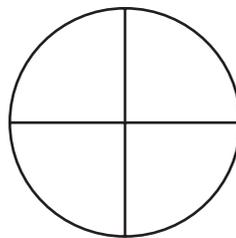
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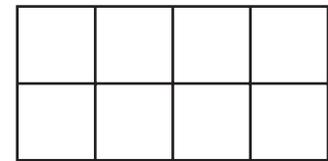
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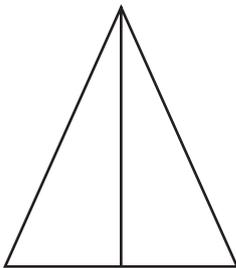
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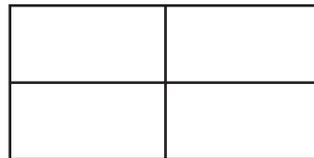
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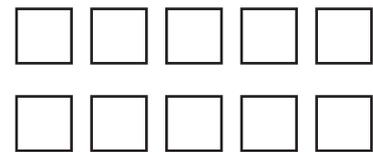
16.



17.



18.



Problem Solving

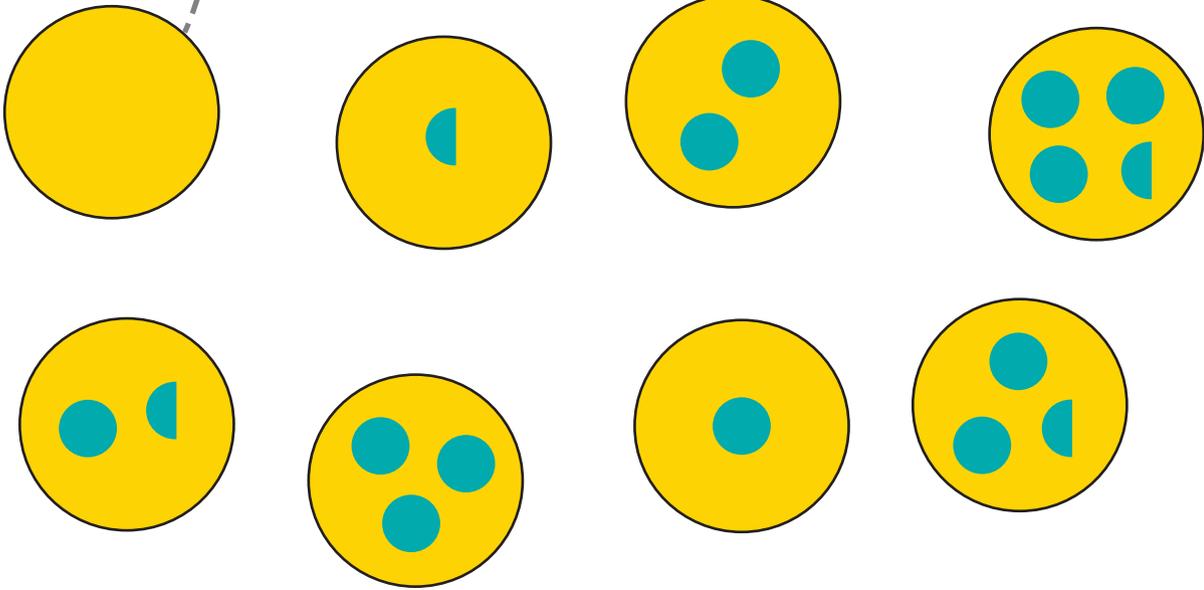
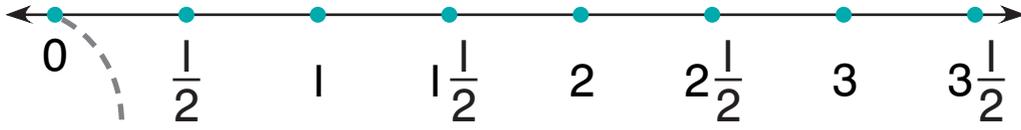
19. Talia wants to buy a pack of stickers.
The stickers costs 60¢ .
The store is having a half-off sale.
What is the sale price?

_____¢

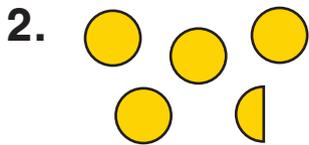
Wholes and Halves

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

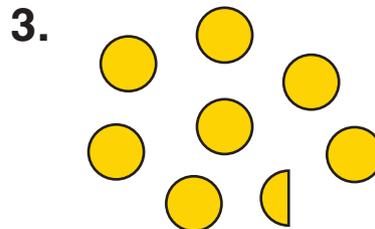
I. Match the pictures to the numbers.

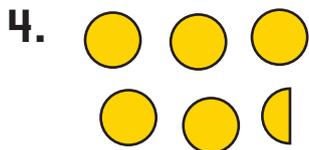


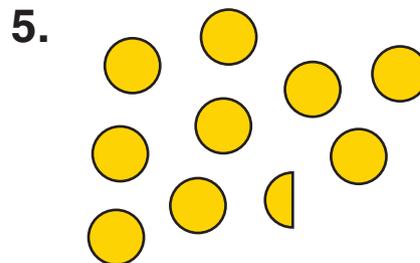
How many circles are there?



4 1/2







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NOTE: Your child is beginning to identify quantities and write numbers that combine wholes and halves. Ask your child to tell you how many wholes and how many halves are in each picture on this page.

How many are there?

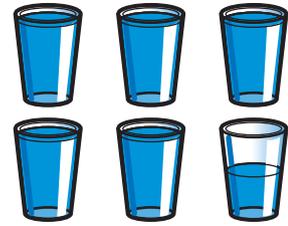
6.



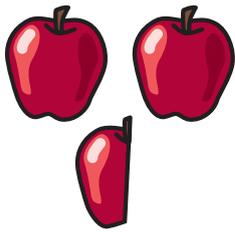
7.



8.



9.



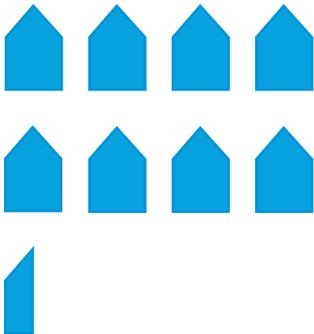
10.



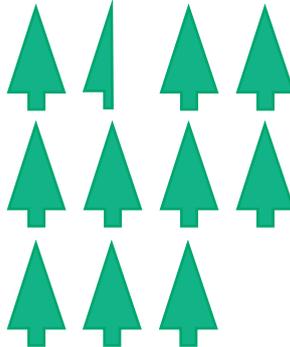
11.



12.



13.

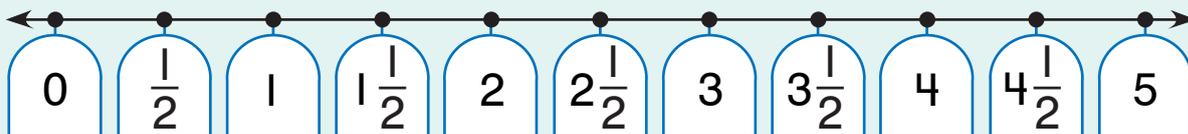


14.



Challenge

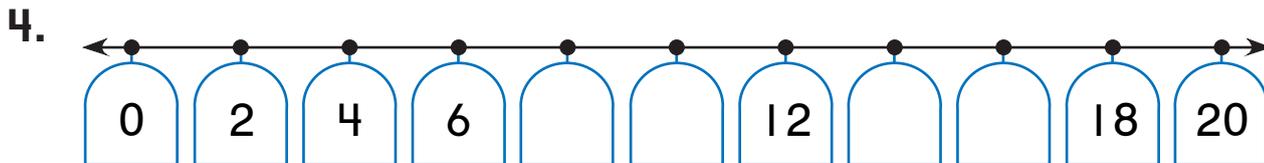
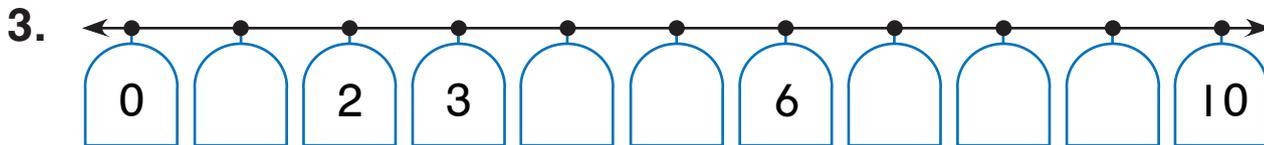
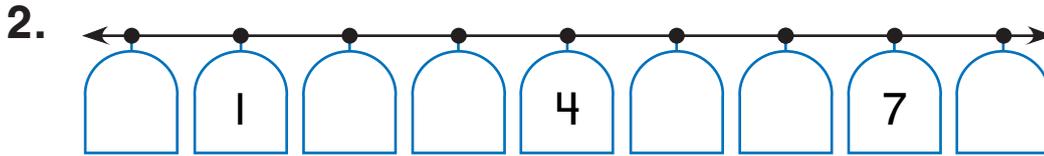
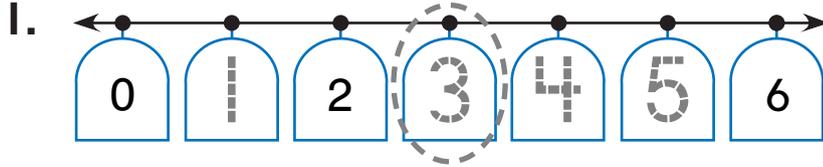
15. What number is halfway between 0 and 5?



Halfway Between Whole Numbers

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

Complete the number line.
Then circle the number in the middle.



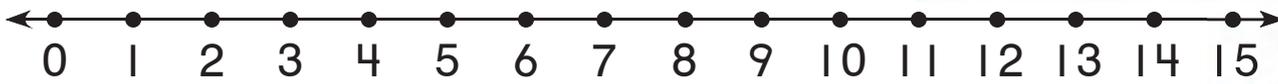
5. How did you find the numbers in the middle?



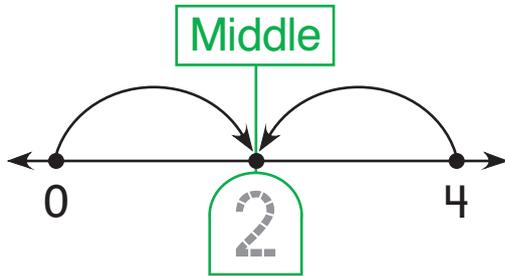
NOTE: Your child is learning to use number lines to find half of even and odd numbers. Have your child find the number that is halfway between 0 and 5.

What number is in the middle?

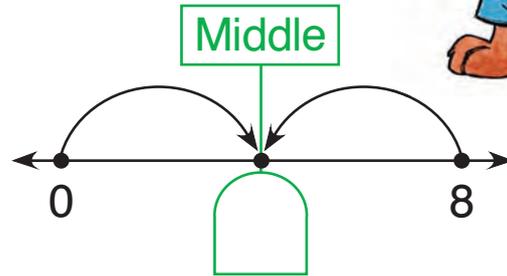
Use the number line to help you.



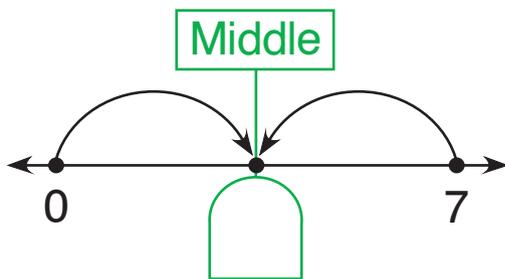
6.



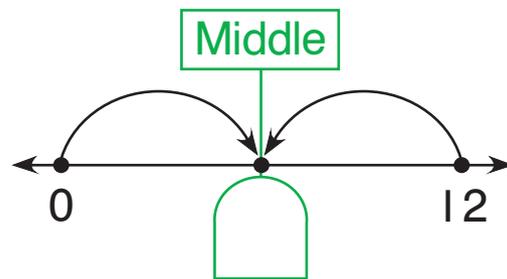
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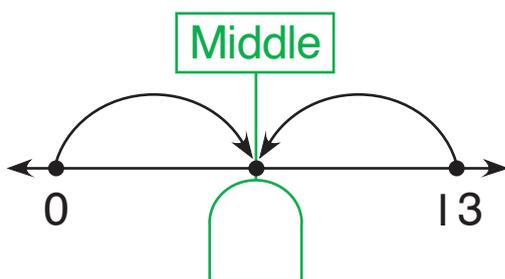
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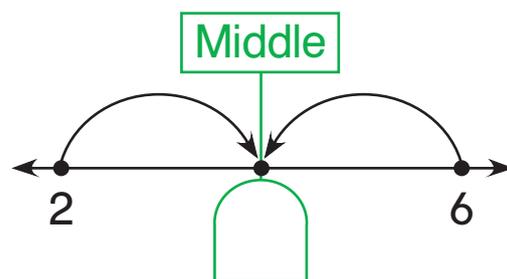
9.



10.

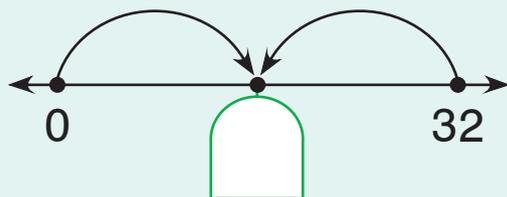


11.



Challenge

12. Write the missing numbers.



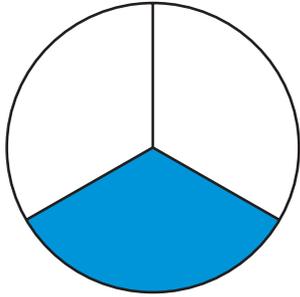
$$\square + \square = 32$$

Half of a Half

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

Is one fourth blue?

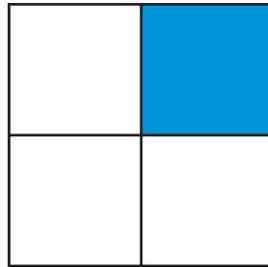
1.



yes

no

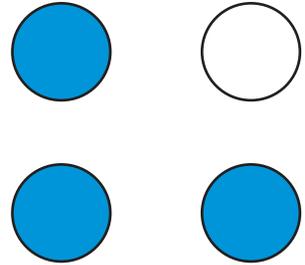
2.



yes

no

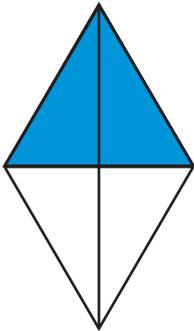
3.



yes

no

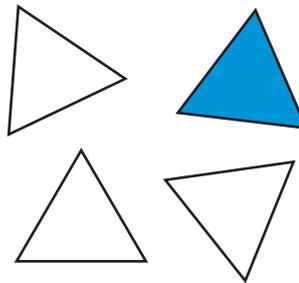
4.



yes

no

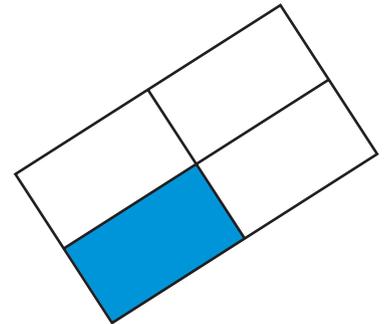
5.



yes

no

6.

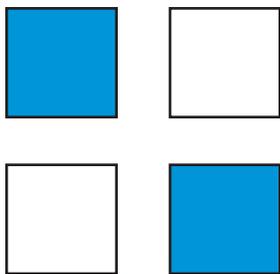


yes

no

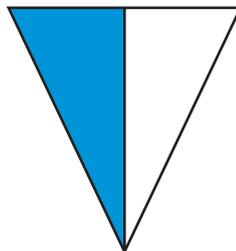
How much is blue?

7.



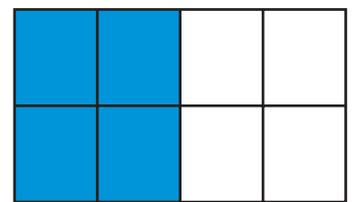
_____ out of _____
equal parts

8.



_____ out of _____
equal parts

9.



_____ out of _____
equal parts



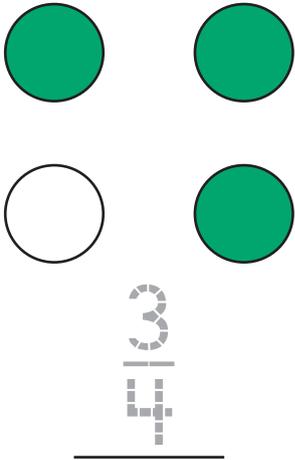
NOTE: Your child is learning to identify fourths.

Ask your child to identify what part of each figure or set of figures is not shaded.

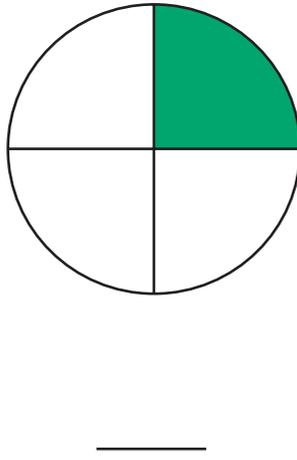


Write a fraction for the green part.

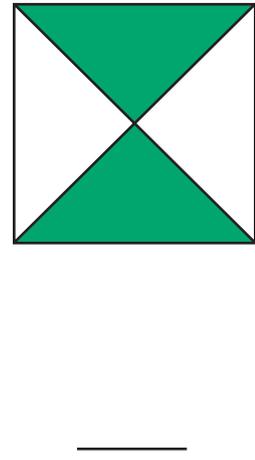
10.



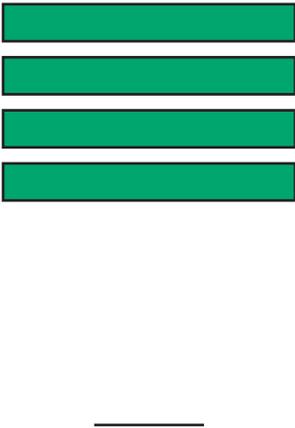
11.



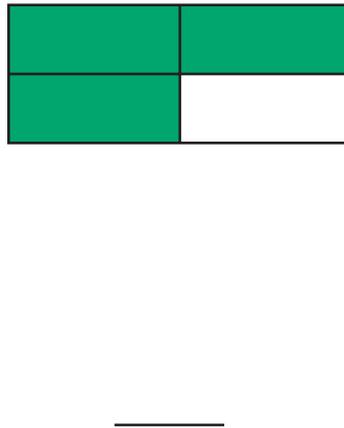
12.



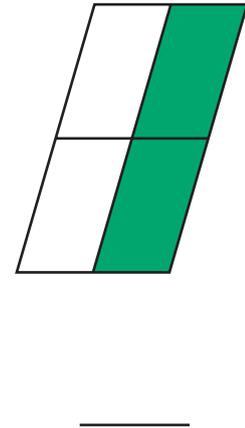
13.



14.



15.



Problem Solving

16. Geri wants to give $\frac{1}{4}$ of her stickers to her brother. She has 8 stickers. How many stickers will her brother get?

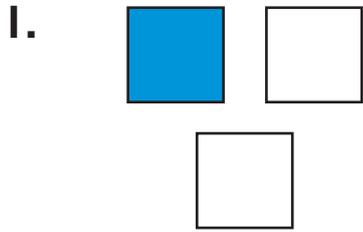


_____ stickers

Thirds

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

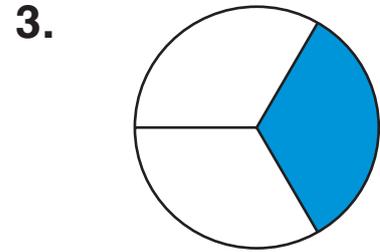
Is one third blue?



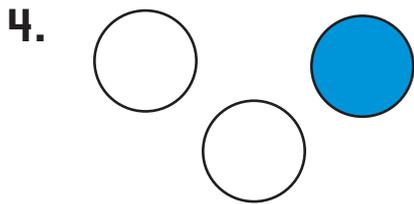
yes no



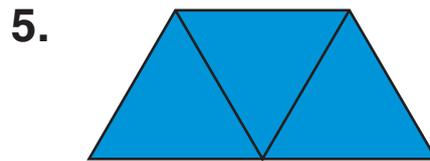
yes no



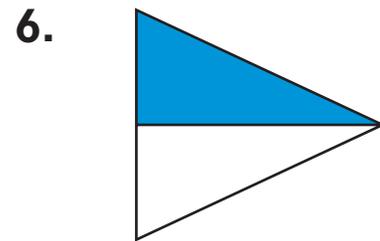
yes no



yes no



yes no

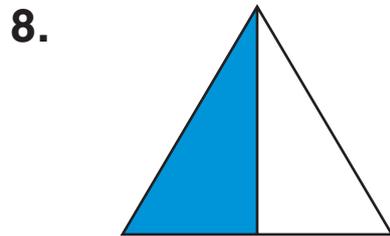


yes no

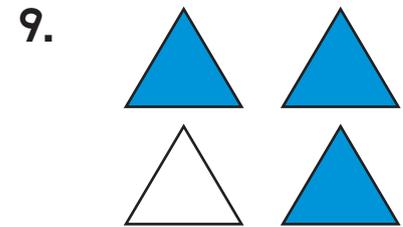
How much is blue?



2 out of 3
equal parts $\frac{2}{3}$



_____ out of _____
equal parts



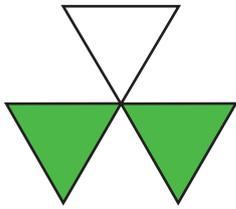
_____ out of _____
equal parts



NOTE: Your child is learning to identify and write thirds. Ask your child to identify the parts of Problems 1 to 6 that are not shaded.

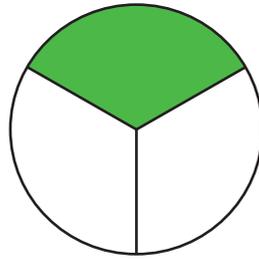
Write a fraction for the green part.

10.

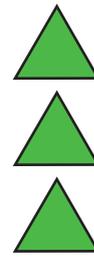


$\frac{2}{3}$

11.



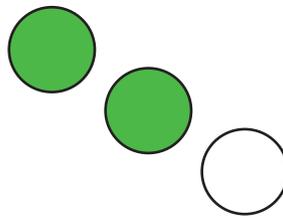
12.



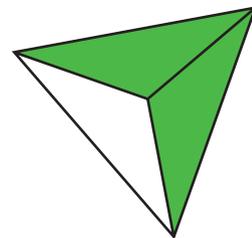
13.



14.



15.



Challenge

Write $<$ or $>$.

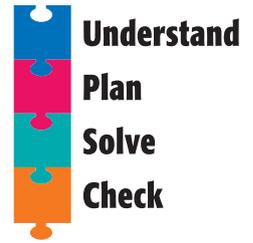
16. $\frac{1}{3}$ ○ $\frac{2}{3}$

17. $\frac{1}{2}$ ○ $\frac{1}{3}$

Problem Solving Strategy

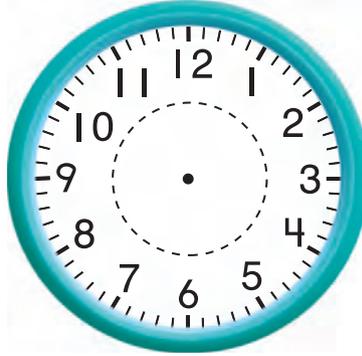
Guess and Check

NCTM Standards 1, 4, 6, 7, 8, 9, 10

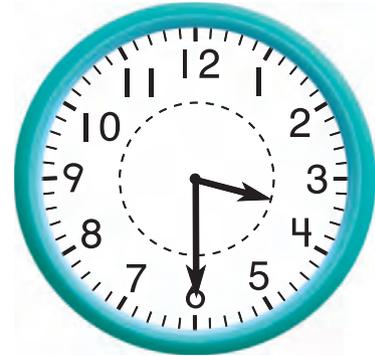


1. The school fair starts at 10:30. It ends at 3:30.
What time will it be halfway through the fair?

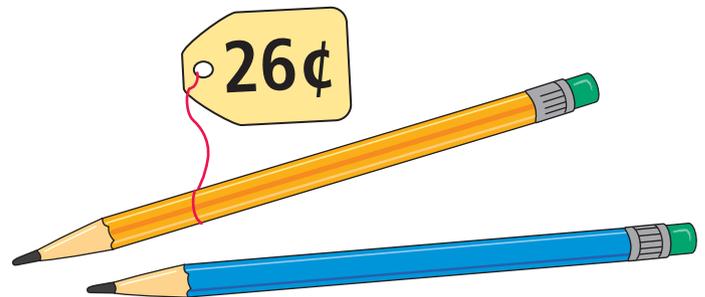
Start
10:30



End
3:30



2. Two pencils cost 26¢.
Don buys 1 pencil.
How much does the pencil cost?



_____¢

3. Jack has some marbles.
Ben has twice as many.
Together, they have 12 marbles.
How many marbles does each boy have?

Jack has _____ marbles.

Ben has _____ marbles.



NOTE: Your child is exploring different ways to solve problems.
Guessing and checking can help you get started. Using your first guess can help to make a better second guess.

Problem Solving Test Prep

1. Thelma has nickels and pennies in her piggy bank. How many ways can she make 10¢?

(A) 2

(C) 4

(B) 3

(D) 10

2. Carl has 30¢ today. Yesterday he lost 2 dimes. How much money did Carl have before?

(A) 10¢

(C) 40¢

(B) 30¢

(D) 50¢



Show What You Know

3. Chris had 10¢. Then he found 3 nickels. He bought an eraser for a dime. How much money does he have now?

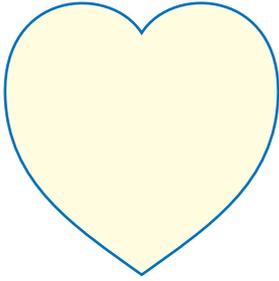
Use words, numbers, or pictures to explain.

4. Dori is in front of Keith. Sam is behind Dori. There are no others in line. Who is at the front of the line?

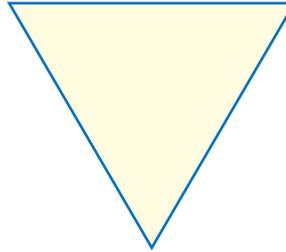
Explain how you know your answer is correct.

Draw a line to show halves. Lesson 1

1.



2.

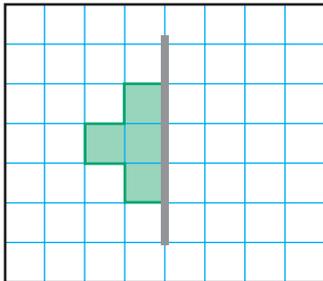


3.

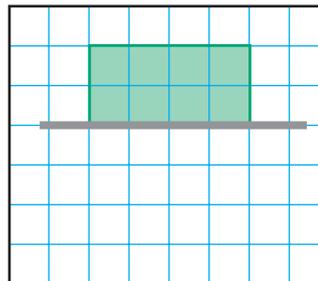


Draw the mirror image. Lesson 1

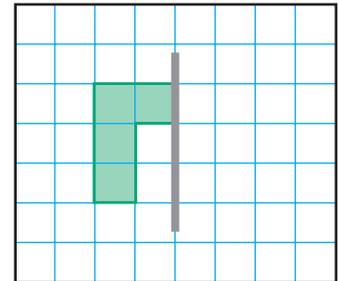
4.



5.



6.



Complete each sentence. Lessons 2 and 3

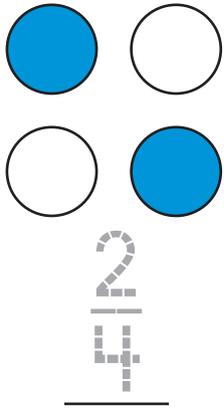
7. If one book costs 25¢,
then two books cost _____¢.

8. Two friends share 40 pennies equally.

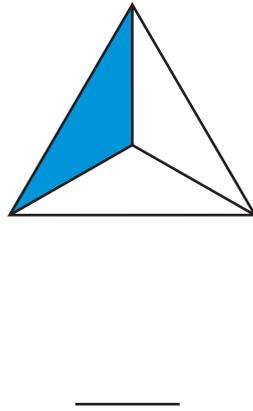
Each friend gets _____ pennies.

Write a fraction for the shaded part. Lessons 4, 7, and 8

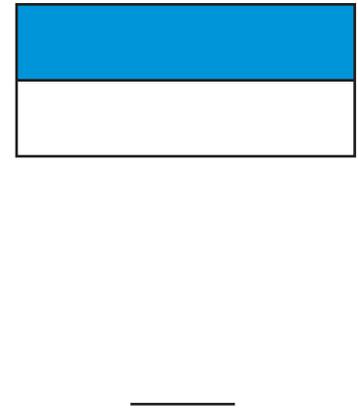
9.



10.

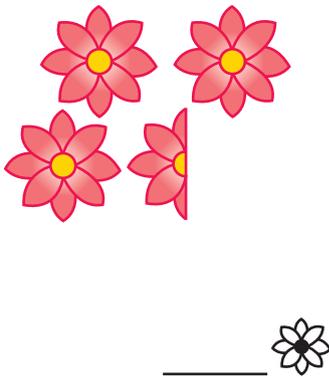


11.



How many are there? Lesson 5

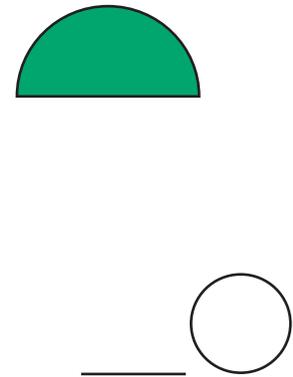
12.



13.

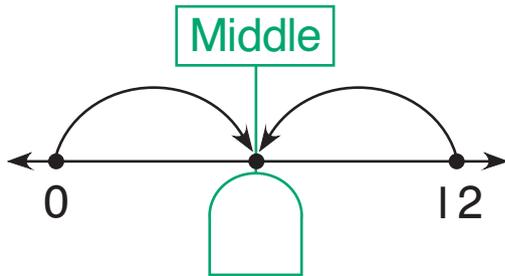


14.

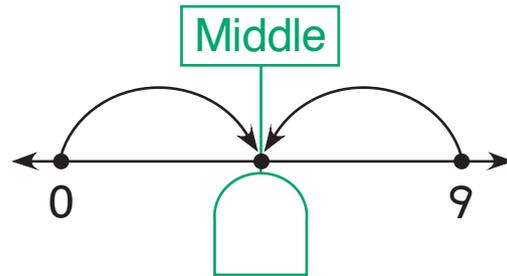


What number is in the middle? Lesson 6

15.



16.



Problem Solving Lesson 9

17. The school play begins at 1:30 and ends at 3:30.
What time will it be halfway through the play?
- _____

