

UNDERSTANDING

MULTIPLICATION AND DIVISION

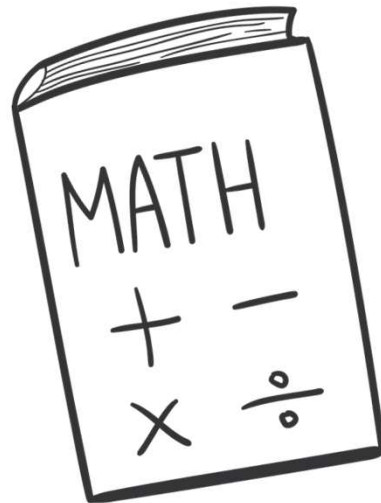
HOW MANY GROUPS?

LESSON 7

TODAY'S OBJECTIVE

Today we will explore division as finding the number of equal groups.

TAKE OUT YOUR **MATH JOURNALS**





WATCH ME FIRST



In the previous lessons, we figured out how many objects were in each group.

In this lesson, we are going to find the number of equal groups.

Let's do a quick review.





Let's Review...

There are two ways to think about division.

Partitive Division

“How many in each group?”

Solving to find how many objects belong in each group.

Measurement Division

“How many groups?”

Solving to find how many equal groups can be made.



Today we are going to use the measurement division model.

Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

Watch me as I create a division model, record a matching equation, and solve this problem.

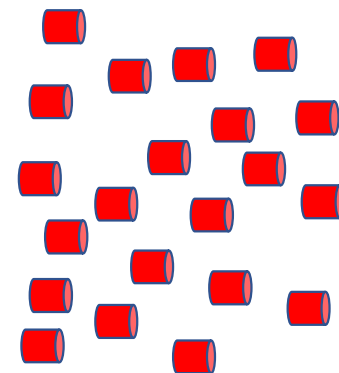


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

I need to divide 21 beads into equal groups to find out how many groups (charms) Tina can make.

Each necklace charm is made up of 3 beads.

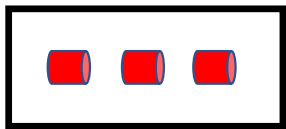
Beads





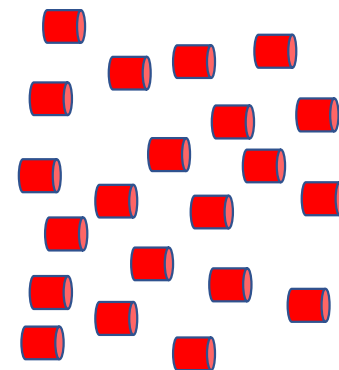
Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

I'll start by making one group of 3 beads.



Charm #1

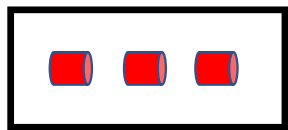
Beads



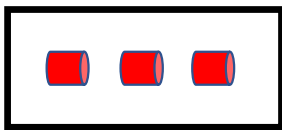


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

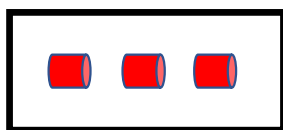
I'll keep making groups until all the beads are equally shared.



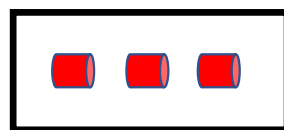
Charm #1



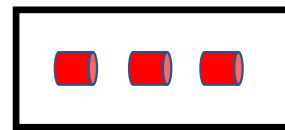
Charm #2



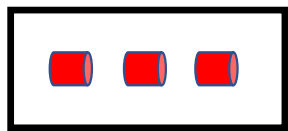
Charm #3



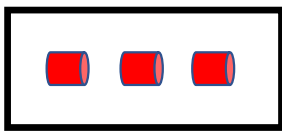
Charm #4



Charm #5

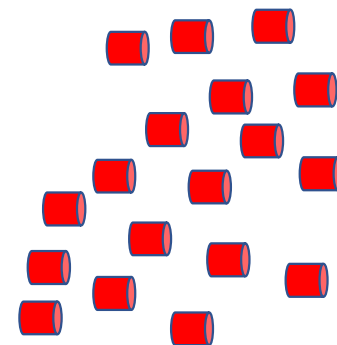


Charm #6



Charm #7

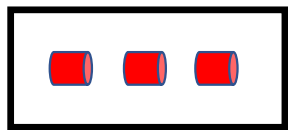
Beads



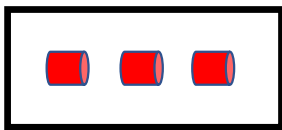


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

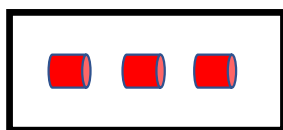
It's time to write a matching equation.



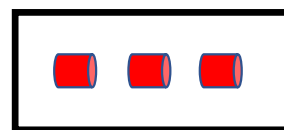
Charm #1



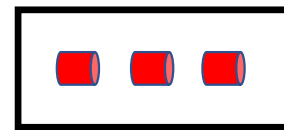
Charm #2



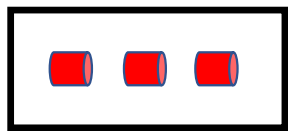
Charm #3



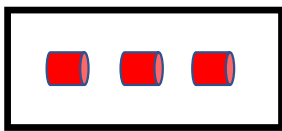
Charm #4



Charm #5



Charm #6



Charm #7

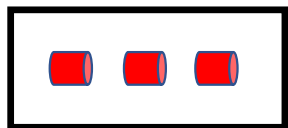
Equation:

$$21 \div 3 = 7$$

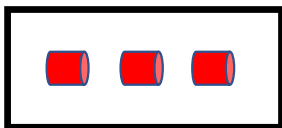


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

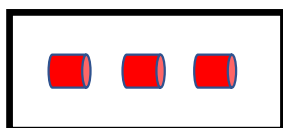
21 represents the total number of beads.



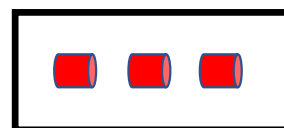
Charm #1



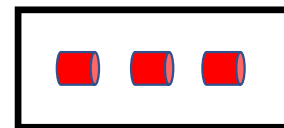
Charm #2



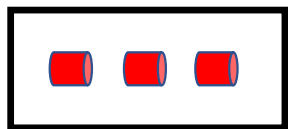
Charm #3



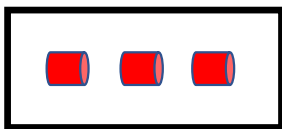
Charm #4



Charm #5



Charm #6



Charm #7

Equation:

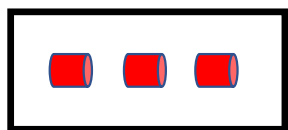
$$21 \div 3 = 7$$

↓
total #
of objects

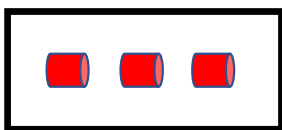


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

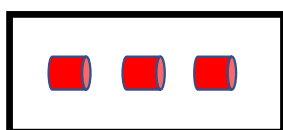
3 represents the number of beads on each charm.



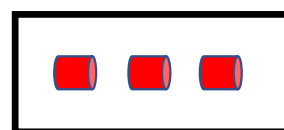
Charm #1



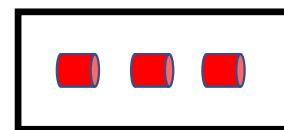
Charm #2



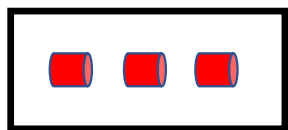
Charm #3



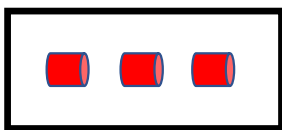
Charm #4



Charm #5



Charm #6



Charm #7

Equation:

$$21 \div 3 = 7$$

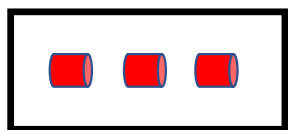
total #
of objects

of objects
in each group

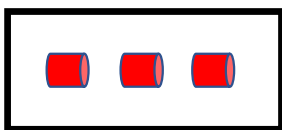


Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

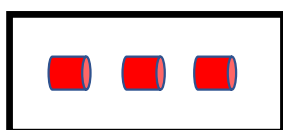
And 7 represents the number of necklace charms.



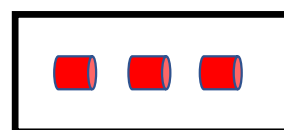
Charm #1



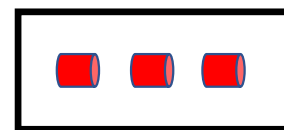
Charm #2



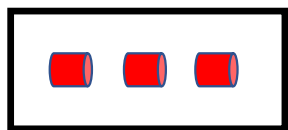
Charm #3



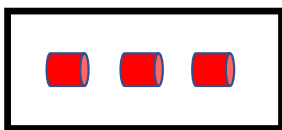
Charm #4



Charm #5



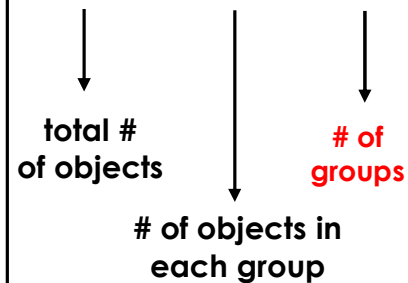
Charm #6



Charm #7

Equation:

$$21 \div 3 = 7$$

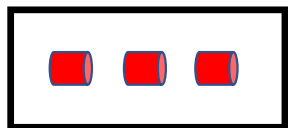




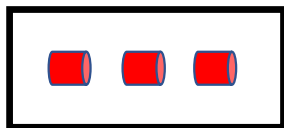
Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

Now I'll answer the question in the word problem.

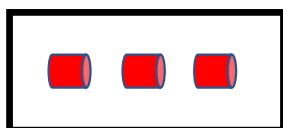
Tina made 7 charms.



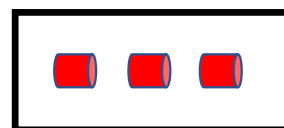
Charm #1



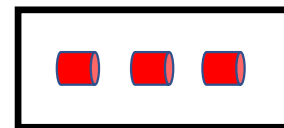
Charm #2



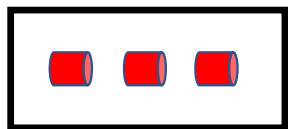
Charm #3



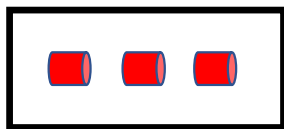
Charm #4



Charm #5



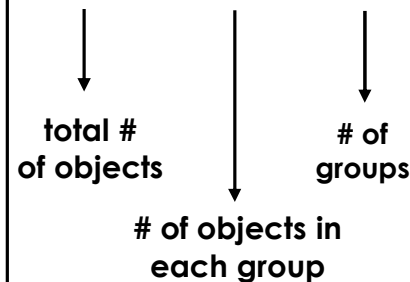
Charm #6



Charm #7

Equation:

$$21 \div 3 = 7$$

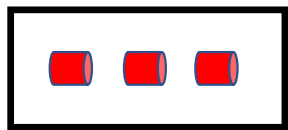




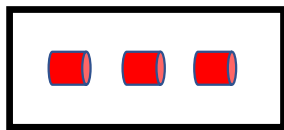
Tina is making charms for a necklace. Each charm will have 3 beads. If Tina has 21 beads, how many charms will she make using all the beads?

This is an example of **measurement division** because I found out **how many groups** could be made.

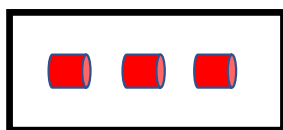
Tina made 7 charms.



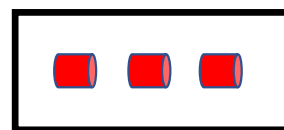
Charm #1



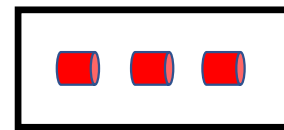
Charm #2



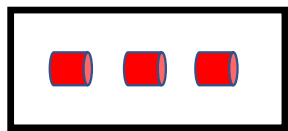
Charm #3



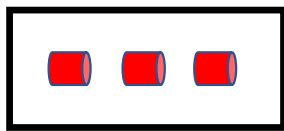
Charm #4



Charm #5



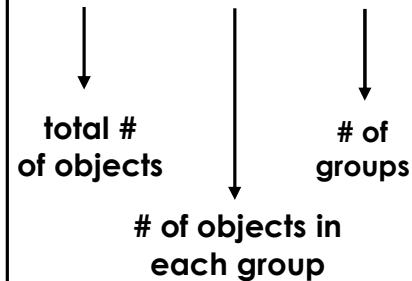
Charm #6



Charm #7

Equation:

$$21 \div 3 = 7$$





LET'S WORK TOGETHER



Problem #1

LET'S WORK TOGETHER

Let's do one together!

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

We are going to create a division model and record a matching equation to solve this problem.

 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

First, let's create a model to represent the problem. Let's start with what we know.

Model

Donuts

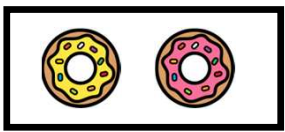


 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

How many donuts do we need to draw in one bag?

Model

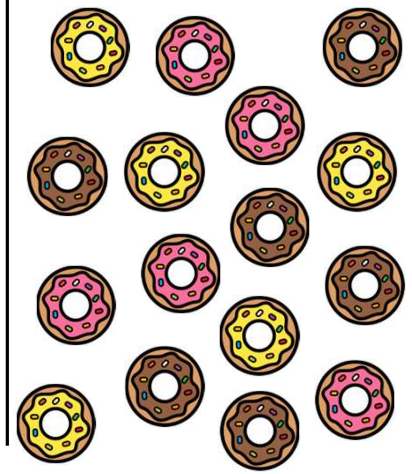


Bag #1



**We know how many objects are in a group.
Now we are trying to figure out many groups there are.**

Donuts

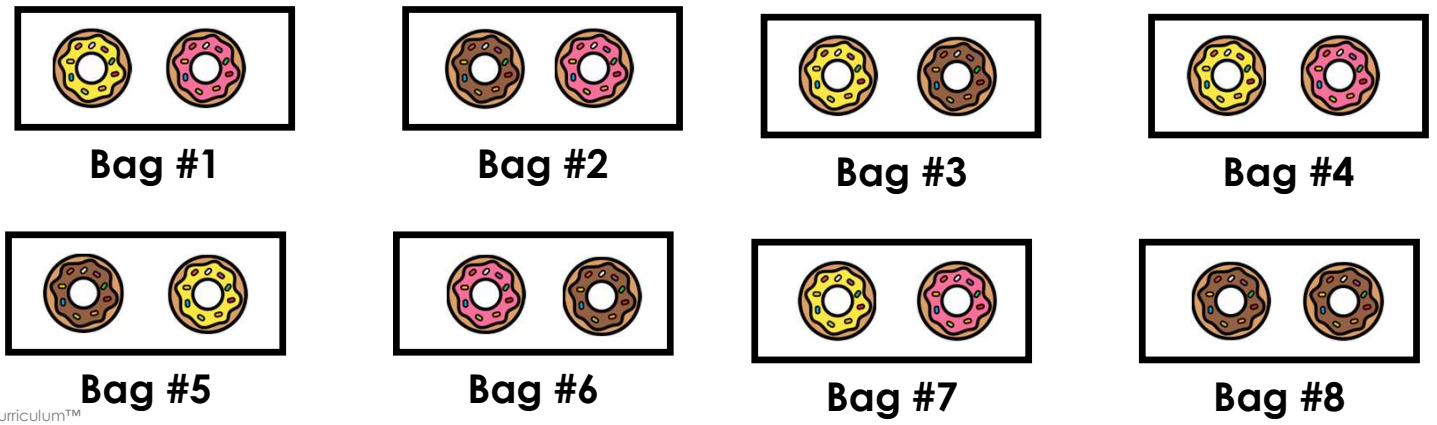


 **Problem #1**
LET'S WORK TOGETHER

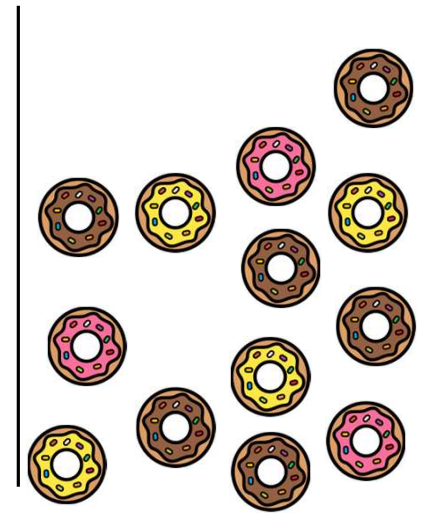
Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

How many groups of donuts can we make?

Model



Donuts

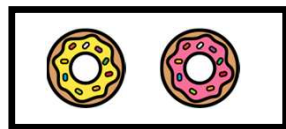


 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

What's the matching equation?

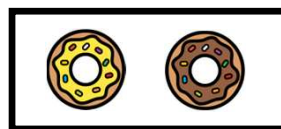
Model



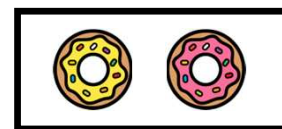
Bag #1



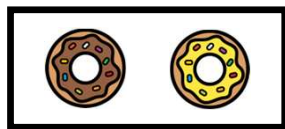
Bag #2



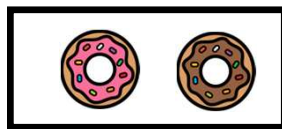
Bag #3



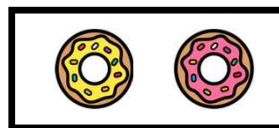
Bag #4



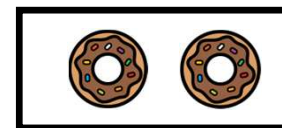
Bag #5



Bag #6



Bag #7



Bag #8

Equation:

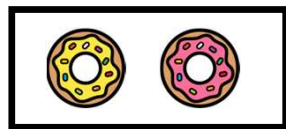
$$16 \div 2 = 8$$

 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

What does the 16 in the equation represent?

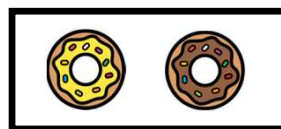
Model



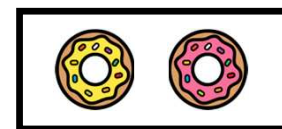
Bag #1



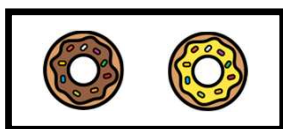
Bag #2



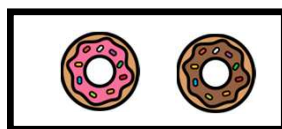
Bag #3



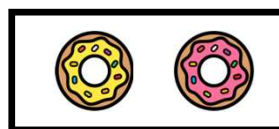
Bag #4



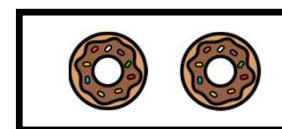
Bag #5



Bag #6



Bag #7



Bag #8

Equation:

$$16 \div 2 = 8$$

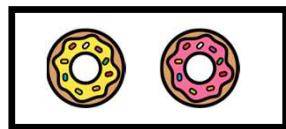
total #
of objects
(donuts)

 **Problem #1**
LET'S WORK TOGETHER

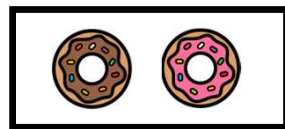
Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

What does the 2 in the equation represent?

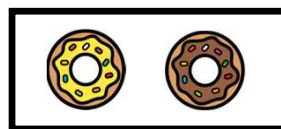
Model



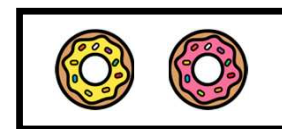
Bag #1



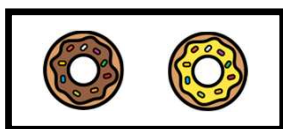
Bag #2



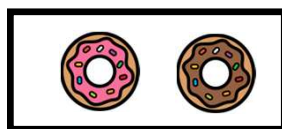
Bag #3



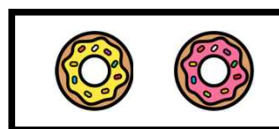
Bag #4



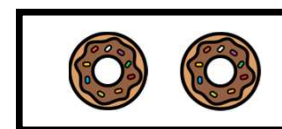
Bag #5



Bag #6



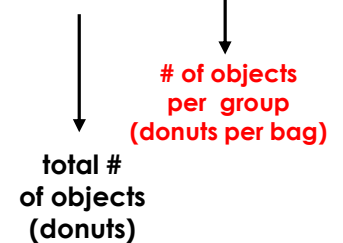
Bag #7



Bag #8

Equation:

$$16 \div 2 = 8$$



 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

What does the 8 in the equation represent?

Model



Equation:

$$16 \div 2 = 8$$

total # of objects (donuts) # of objects per group (donuts per bag) # of groups (bags)

 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

Now let's answer the original question.
How many bags will Ron need?

Ron will need 8 bags.



Equation:

$$16 \div 2 = 8$$

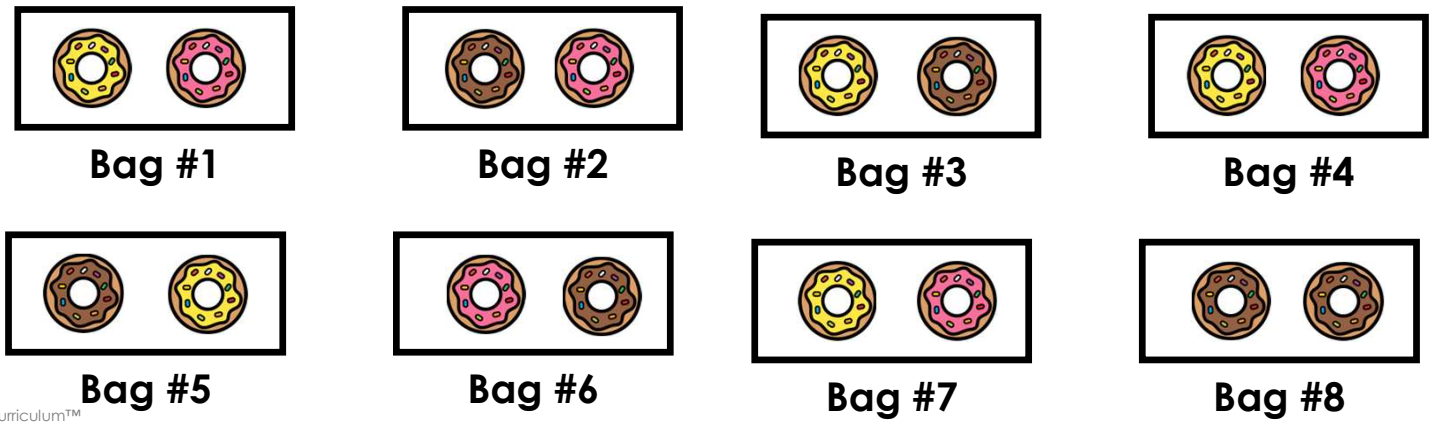
total # of objects (donuts) # of objects per group (donuts per bag) # of groups (bags)

 **Problem #1**
LET'S WORK TOGETHER

Ron purchased 16 donuts. He can only fit 2 donuts in a bag. If he packs all the donuts, how many bags will he need? Draw a model and solve.

This is a **measurement** division problem because we found out **how many groups** (bags) there were.

Ron will need 8 bags.



Equation:

$$16 \div 2 = 8$$

Labels for the equation: total # of objects (donuts) points to 16; # of objects per group (donuts per bag) points to 2; # of groups (bags) points to 8.

CHECK - IN

- What did you notice?
- Can you make a connection to anything else you already know? How?
- Do you have any questions?

IT'S YOUR TURN

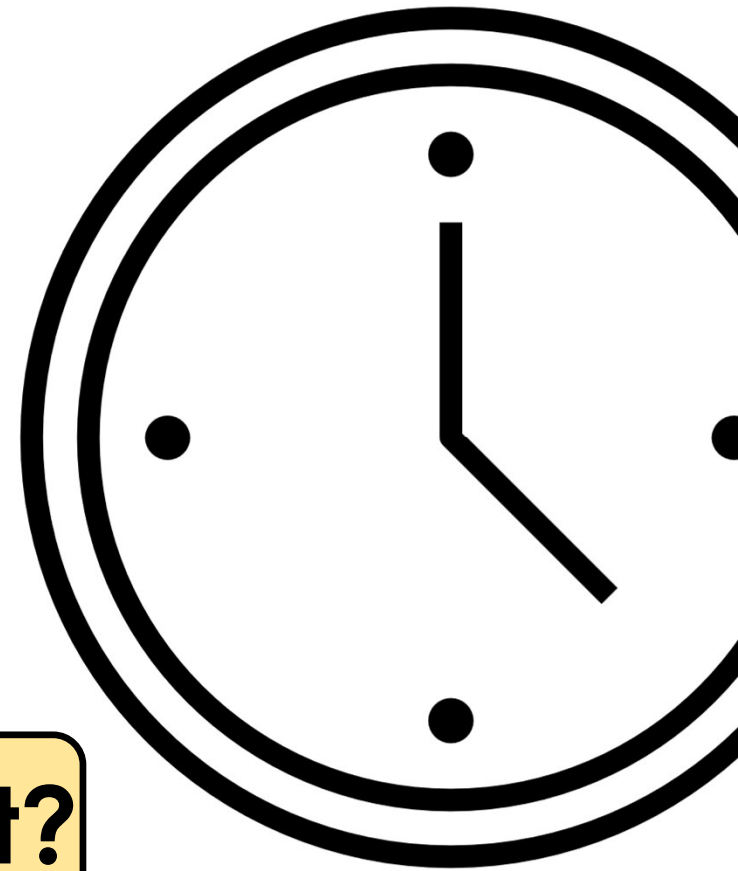


Now It's **“YOUR TURN”** to Solve

Don't forget to explain your thinking!



Time to **Discuss** and **Check** Your Answers



How did you solve it?



Problem #1

YOUR TURN

Will is decorating gingerbread men. He has 36 gumdrops. He needs 4 gumdrops for each gingerbread man. How many gingerbread men can he decorate? Draw a model and solve.

Model

Equation

Answer

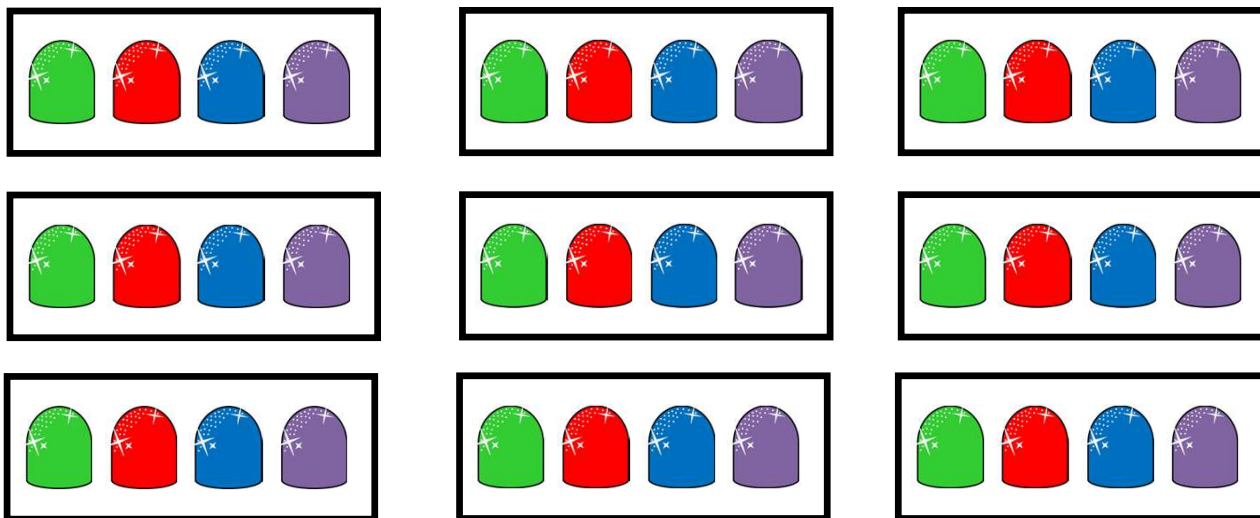


Problem #1

YOUR TURN

Will is decorating gingerbread men. He has 36 gumdrops. He needs 4 gumdrops for each gingerbread man. How many gingerbread men can he decorate? Draw a model and solve.

Model



Equation

$$36 \div 4 = 9$$

Answer

Will can decorate
9 gingerbread
men.



Problem #2

YOUR TURN

The Tick Tock Shop received a shipment of 45 watches. There were 9 watches in each box. How many boxes did the shop receive? Draw a model and solve.

Model

Equation

Answer

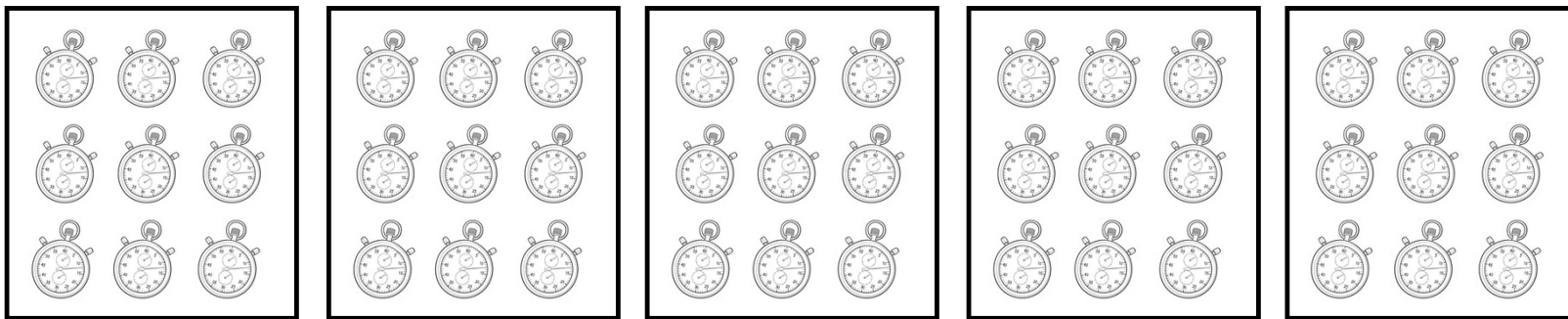


Problem #2

YOUR TURN

The Tick Tock Shop received a shipment of 45 watches. There were 9 watches in each box. How many boxes did the shop receive? Draw a model and solve.

Model



Equation

$$45 \div 9 = 5$$

Answer

The shop received 5 boxes.



Problem #3

YOUR TURN

There are 28 markers in a closet. The markers are in cases. There are four markers in each case. How many cases of markers are in the closet? Draw a model and solve.

Model

Equation

Answer

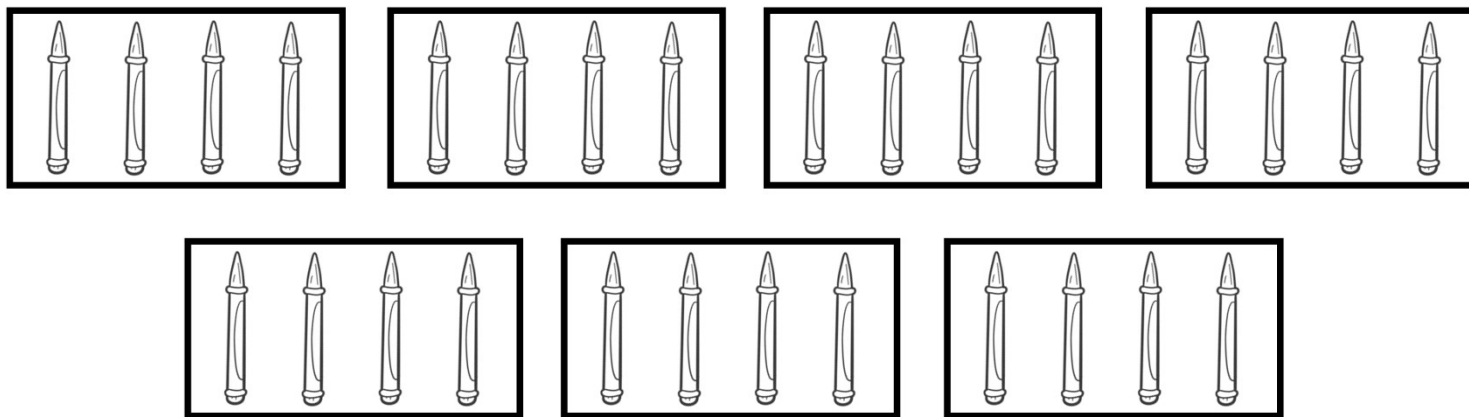


Problem #3

YOUR TURN

There are 28 markers in a closet. The markers are in cases. There are four markers in each case. How many cases of markers are in the closet? Draw a model and solve.

Model



Equation

$$28 \div 4 = 7$$

Answer

There are 7 bags of markers in the closet.



Problem #4

YOUR TURN

To play a game, every child needs 4 marbles. There are 24 marbles in a jar. How many children can play? Draw a model and solve.

Model

Equation

Answer

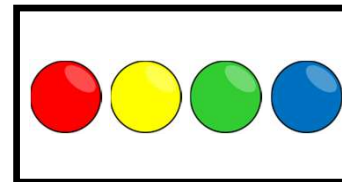
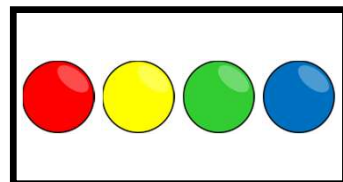
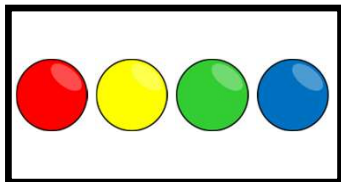
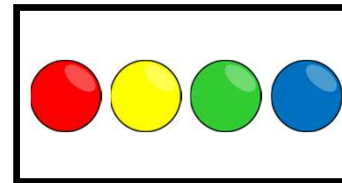
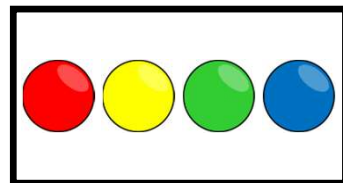
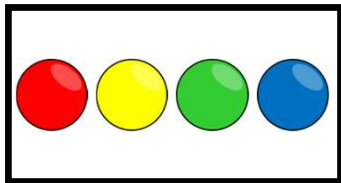


Problem #4

YOUR TURN

To play a game, every child needs 4 marbles. There are 24 marbles in a jar. How many children can play? Draw a model and solve.

Model



Equation

$$24 \div 4 = 6$$

Answer

6 children can play the game.



Problem #5

YOUR TURN

Blake has 56 pieces of candy. He wants to give 7 pieces of candy to each one of his teammates. How many teammates can Blake give candy to? Draw a model and solve.

Model

Equation

Answer

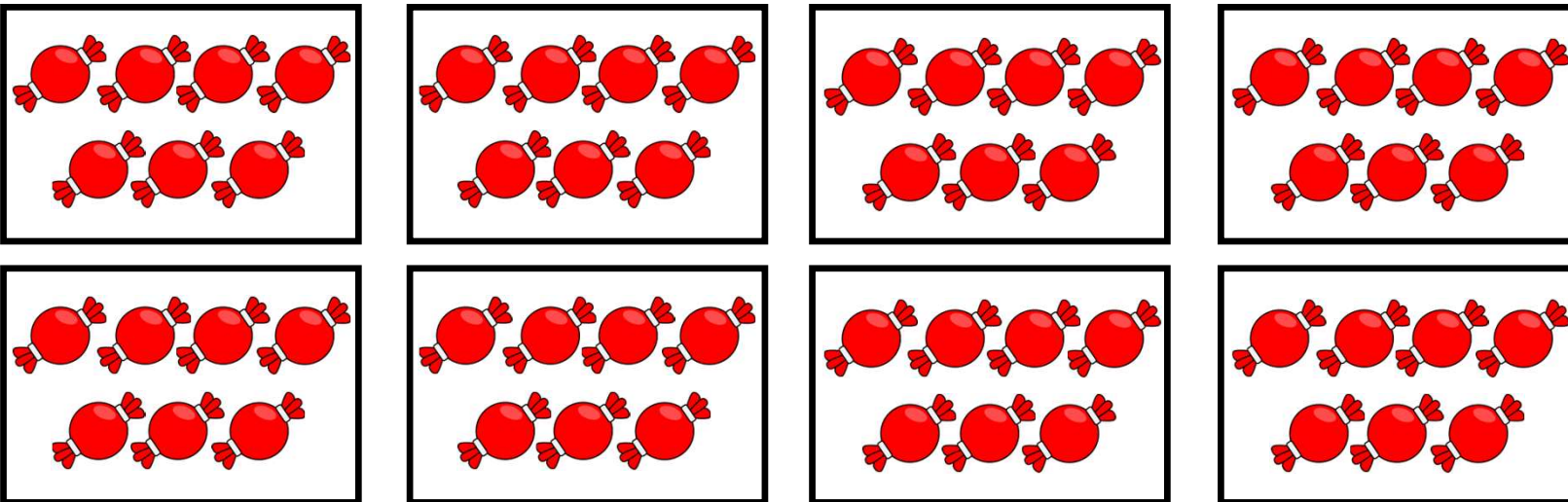


Problem #5

YOUR TURN

Blake has 56 pieces of candy. He wants to give 7 pieces of candy to each one of his teammates. How many teammates can Blake give candy to? Draw a model and solve.

Model



Equation

$$56 \div 7 = 8$$

Answer

Blake can give candy to 8 teammates.



Problem #6

YOUR TURN

A librarian packed 40 books into boxes. If each box holds 8 books, how many boxes did she pack? Draw a model and solve.

Model

Equation

Answer

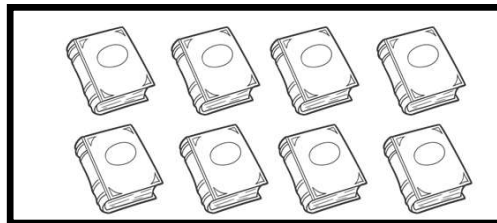
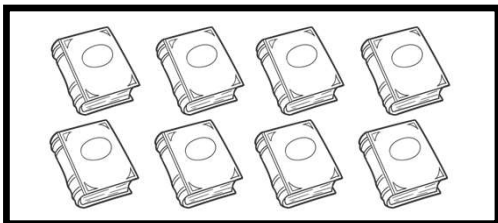
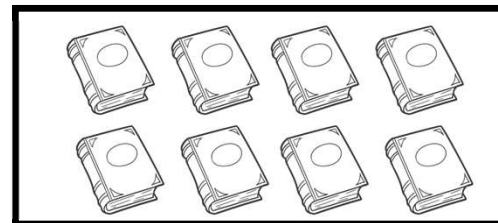
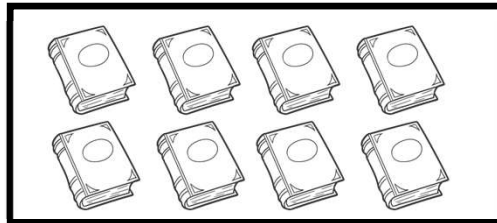
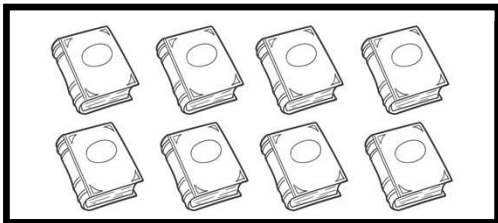


Problem #6

YOUR TURN

A librarian packed 40 books into boxes. If each box holds 8 books, how many boxes did she pack? Draw a model and solve.

Model



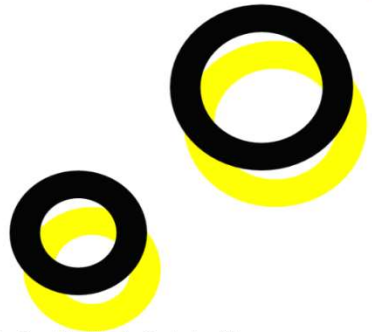
Equation

$$40 \div 8 = 5$$

Answer

She packed 5 boxes.

 **Let's Reflect**



It's reflection time!