UNDERSTANDING

MULTIPLICATION AND DIVISION

HOW MANY IN EACH GROUP?

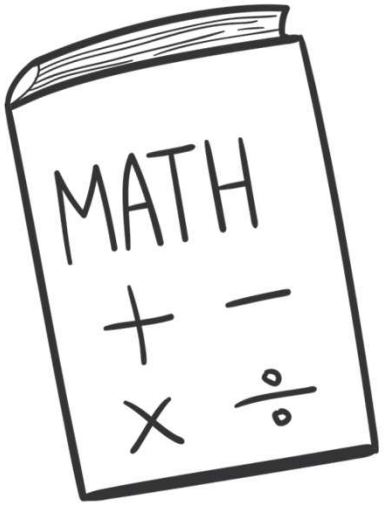
LESSON 5

TODAY'S OBJECTIVE

Today we will explore division as finding the number of objects in each group.

TAKE OUT YOUR

MATH JOURNALS



We are going to explore division.

BUT FIRST…WHAT IS DIVISION?

When we divide, we separate things into equal groups or equal parts.

Did You Know?

There are two ways to think about division.

Partitive Division

"How many in each group?"

You need to find how many objects belong in each group.

Measurement Division

"How many groups?"

You need to find how many equal groups can be made.

Today we are going to learn about partitive division.

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

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

WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

I need to divide 30 beads into 3 equal groups.

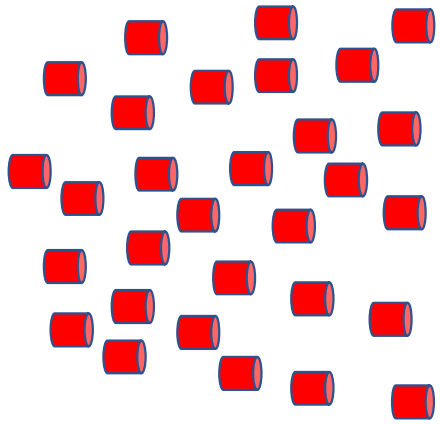
Each necklace is a group, so there are 3 groups.

30 beads

Necklace #1

Necklace #2

Necklace #3

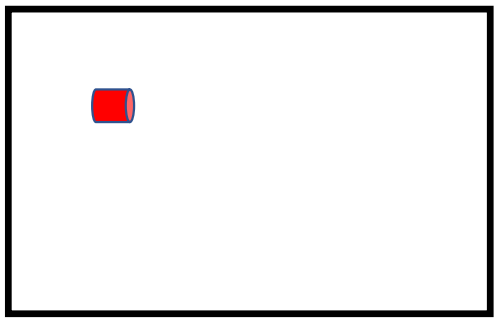


WATCH ME FIRST

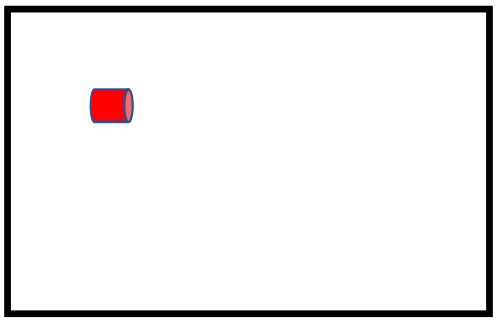
Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

I'll start dividing by giving each group one bead.

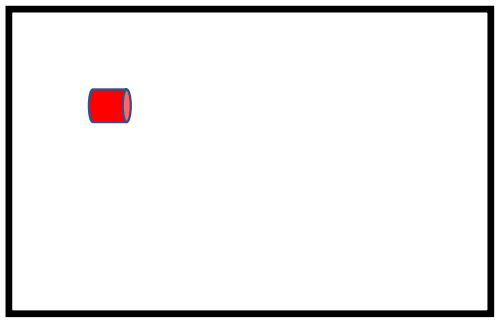
30 beads



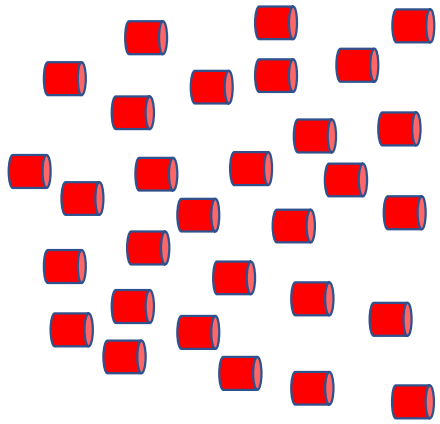
Necklace #1



Necklace #2



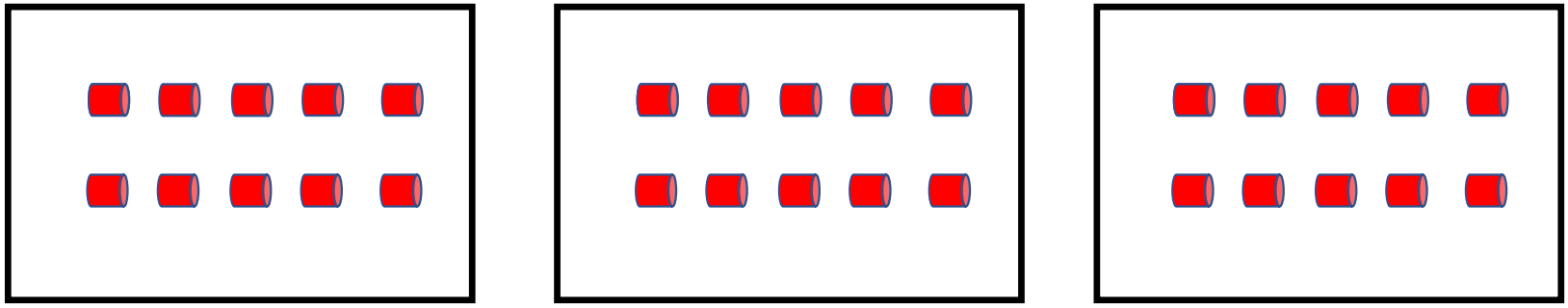
Necklace #3



WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

Once all the beads are equally shared, this is how the groups will look.

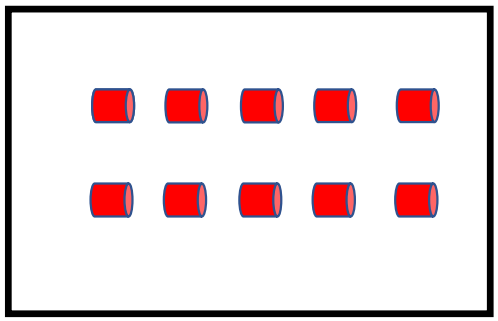


Necklace #1 **Necklace #2** **Necklace #3**

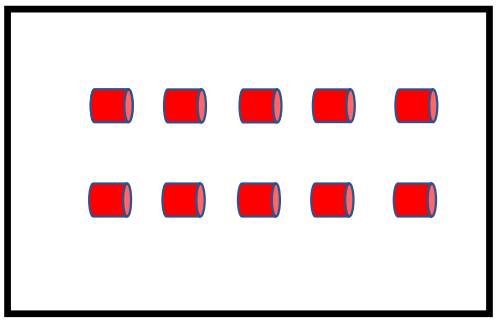
WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

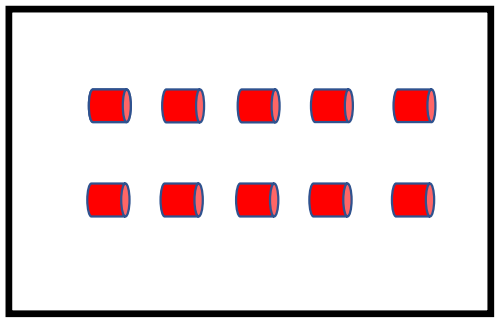
It's time to write a matching equation.



Necklace #1



Necklace #2



Necklace #3

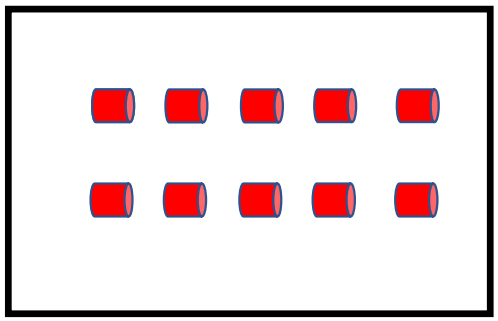
Equation:

30 ÷ 3 = 10

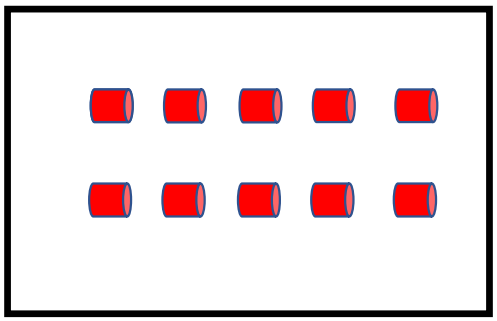
WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

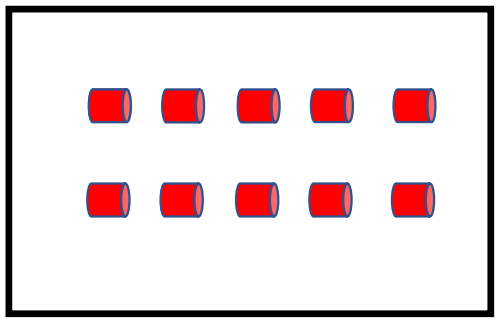
30 represents the total number of beads.



Necklace #1



Necklace #2



Necklace #3

Equation:

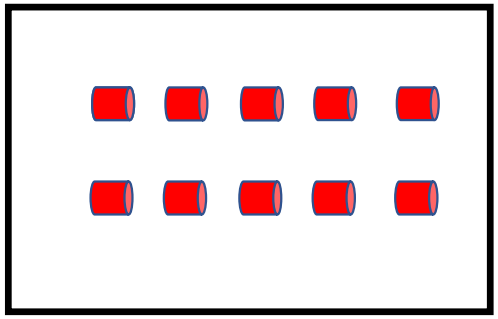
$30 \div 3 = 10$

total # of objects

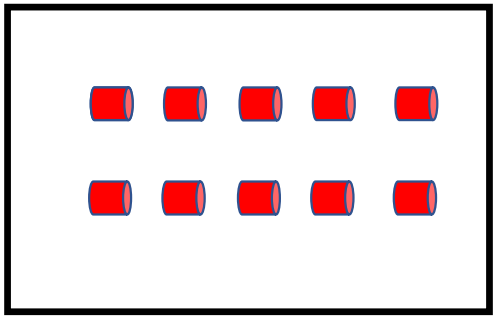
WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

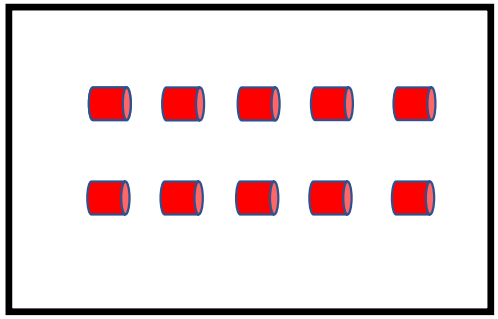
3 represents the number of necklaces.



Necklace #1



Necklace #2



Necklace #3

Equation:

$$30 \div 3 = 10$$

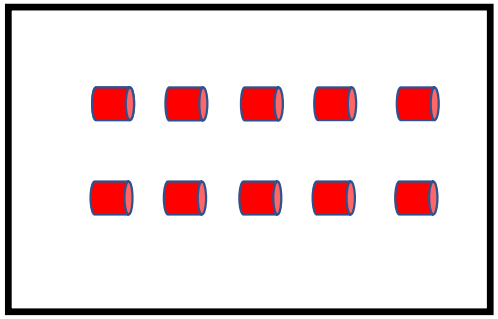
total # of objects

# of groups

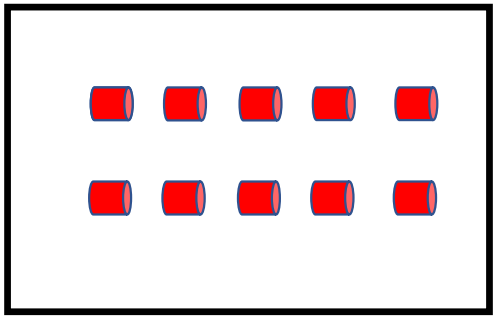
WATCH ME FIRST

Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

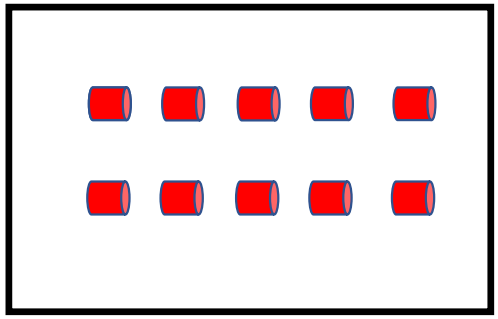
And 10 represents the number of beads in each necklace.



Necklace #1



Necklace #2



Necklace #3

Equation:

$$30 \div 3 = 10$$

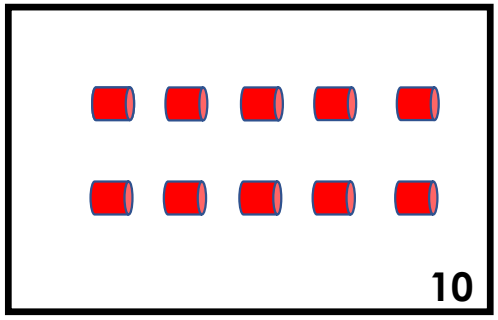
- 30: total # of objects
- 3: # of groups
- 10: # of objects in each group

WATCH ME FIRST

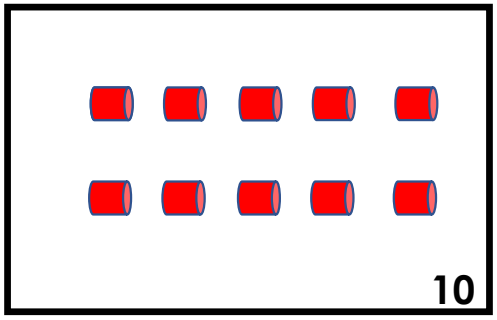
Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

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

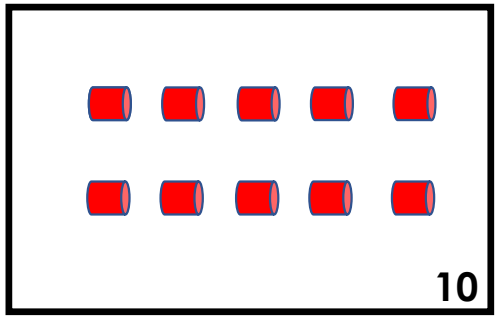
Maggie used 10 beads for each necklace.



Necklace #1



Necklace #2



Necklace #3

Equation:

$$30 \div 3 = 10$$

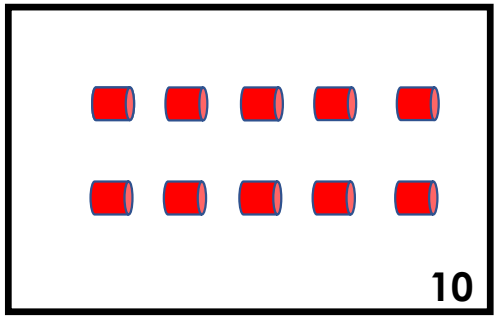
- 30: total # of objects
- 3: # of groups
- 10: # of objects in each group

WATCH ME FIRST

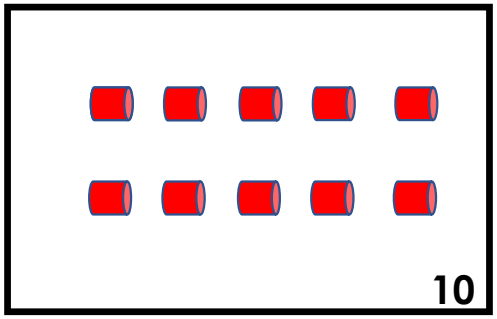
Maggie made 3 necklaces. Each necklace has the same number of beads. If Maggie used 30 beads, how many beads are in each necklace?

This is an example of **partitive division** because I found out **how many objects belonged in each group**.

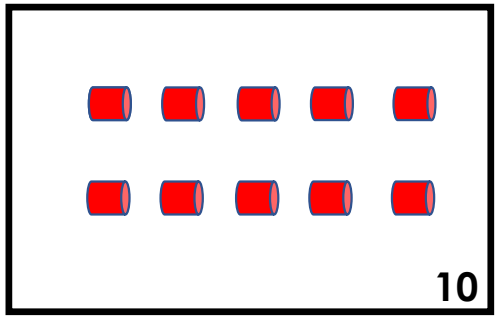
Maggie used 10 beads for each necklace.



Necklace #1



Necklace #2



Necklace #3

Equation:

30 ÷ 3 = 10

total # of objects — **# of groups** — **# of objects in each group**

LET'S WORK TOGETHER

Problem #1
LET'S WORK TOGETHER

Let's do one together!

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

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

Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

First, let's create a model to represent the problem. How many groups do we need to draw and what do the groups represent?

Model

12 donuts

Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

We need 3 groups! Each group represents one friend.

Model

Friend #1 **Friend #2** **Friend #3**

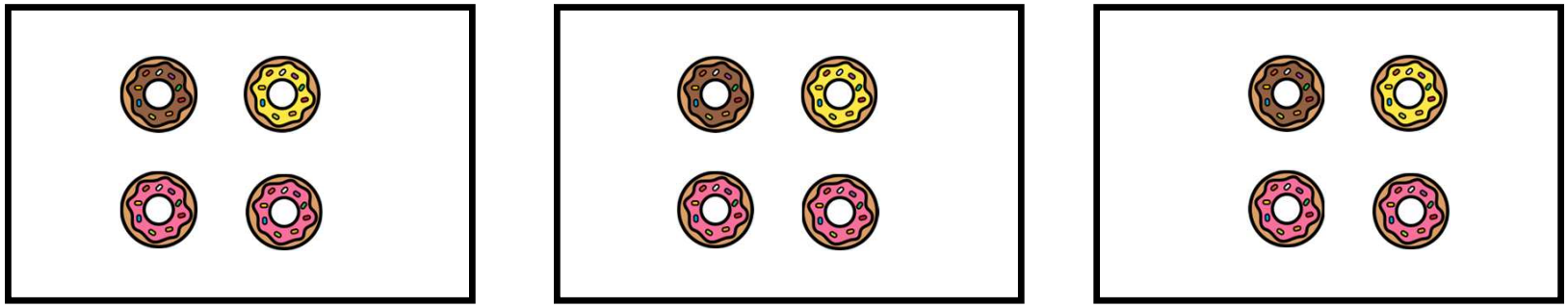
12 donuts

Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

Let's distribute the donuts into equal groups.

Model



Friend #1 **Friend #2** **Friend #3**

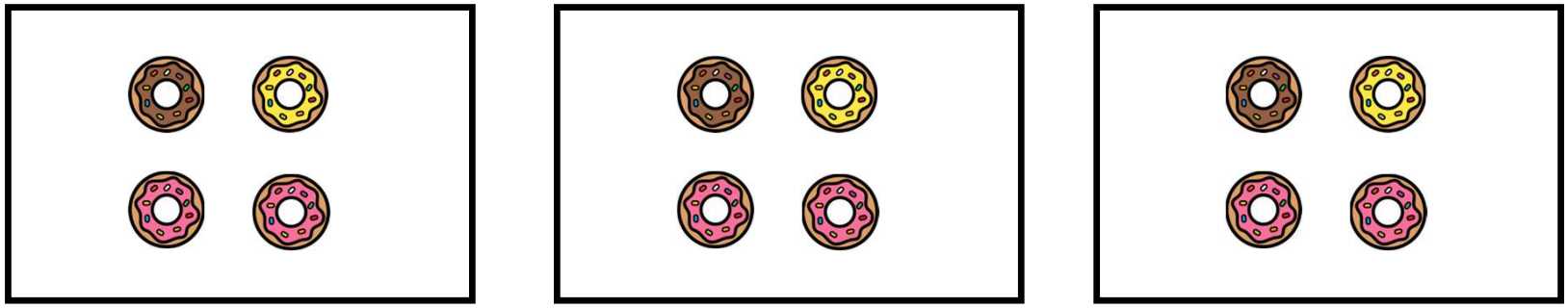
12 donuts

Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

What's the matching equation?

Model



Friend #1 Friend #2 Friend #3

Equation:

12 ÷ 3 = 4

Problem #1
LET'S WORK TOGETHER

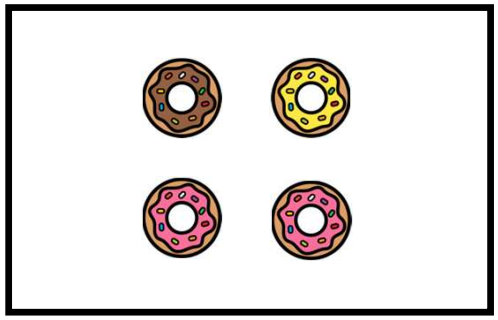
James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

What does the 12 in the equation represent?

Model

Friend #1

Friend #2



Friend #3

Equation:

$12 \div 3 = 4$

total # of objects (donuts)

Problem #1
LET'S WORK TOGETHER

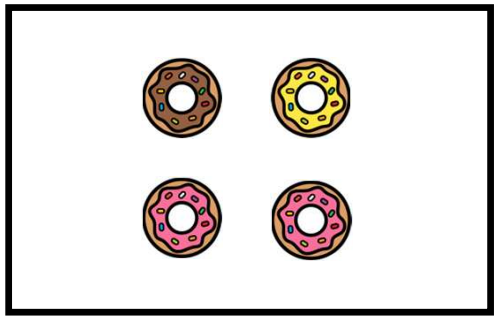
James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

What does the 3 in the equation represent?

Model

Friend #1

Friend #2



Friend #3

Equation:

$$12 \div 3 = 4$$

total # of objects (donuts)

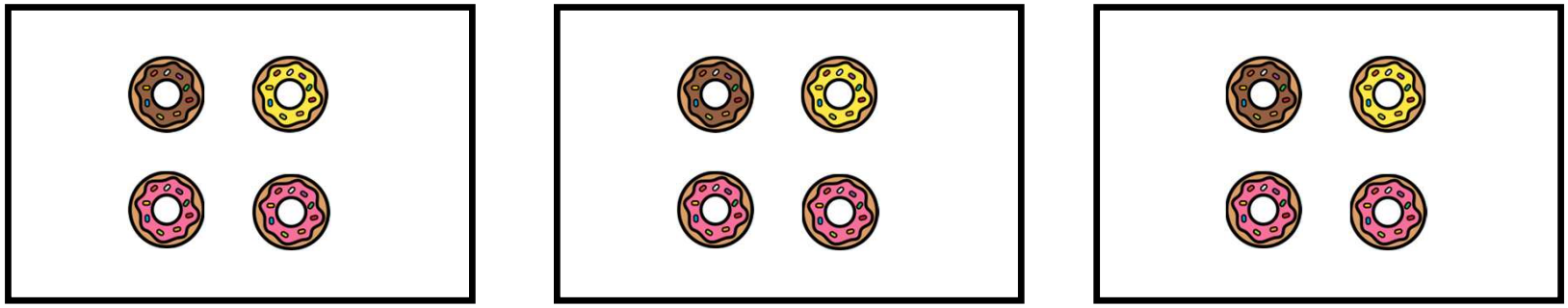
# of groups (friends)

Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

What does the 4 in the equation represent?

Model



Friend #1 Friend #2 Friend #3

Equation:

of objects per group
(donuts per friend)

$12 \div 3 = 4$

total # of objects (donuts) | # of groups (friends)

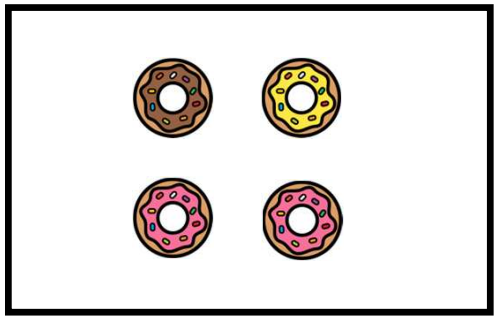
Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

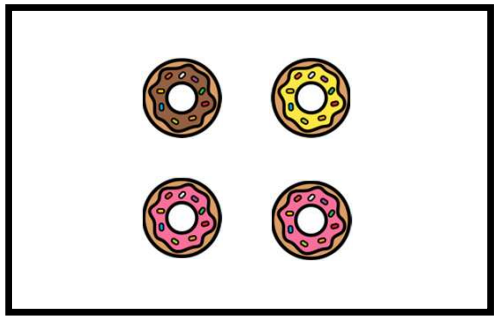
Now let's answer the original question.
How many donuts will each friend get?

Each friend will get 4 donuts.

Friend #1



Friend #2



Friend #3

Equation:

$$12 \div 3 = 4$$

- 12: total # of objects (donuts)
- 3: # of groups (friends)
- 4: # of objects per group (donuts per friend)

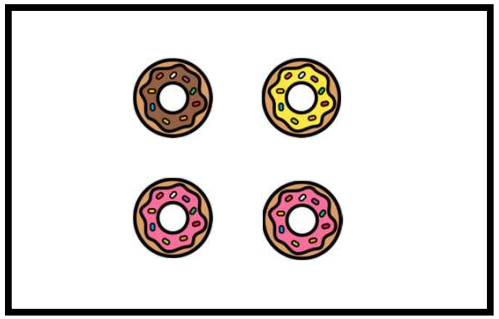
Problem #1
LET'S WORK TOGETHER

James purchased 12 donuts for his 3 friends to share. If he gives each friend the same number of donuts, how many donuts will each friend get?

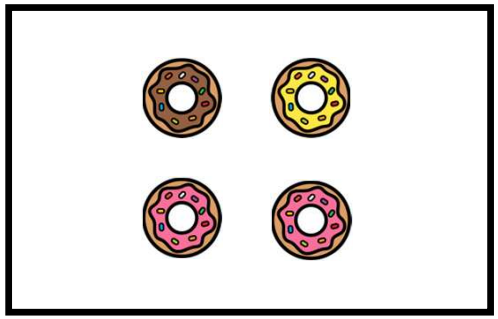
This is a **partitive** division problem because we found out **how many objects** (donuts) were **in each group** (friend).

Each friend will get 4 donuts.

Friend #1



Friend #2



Friend #3

Equation:

# of objects per group (donuts per friend)

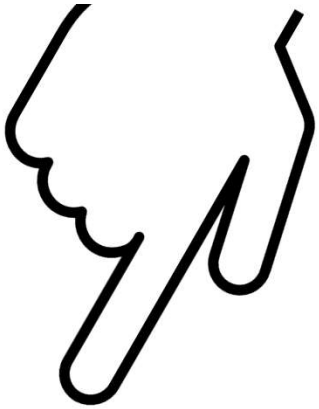
$$12 \div 3 = 4$$

Total # of objects (donuts) | **# of groups (friends)**

CHECK - IN

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

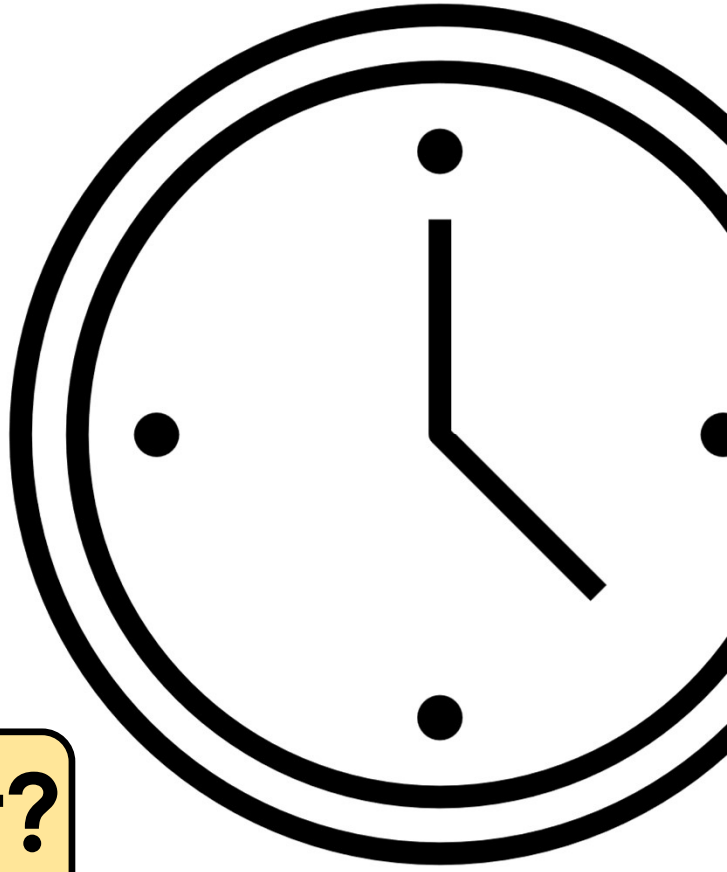
IT'S YOUR TURN



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

Sherry purchased 15 lollipops for her 5 friends to share. If she gives each friend the same number of lollipops, how many lollipops will each friend get? Draw a division model and solve it.

Model

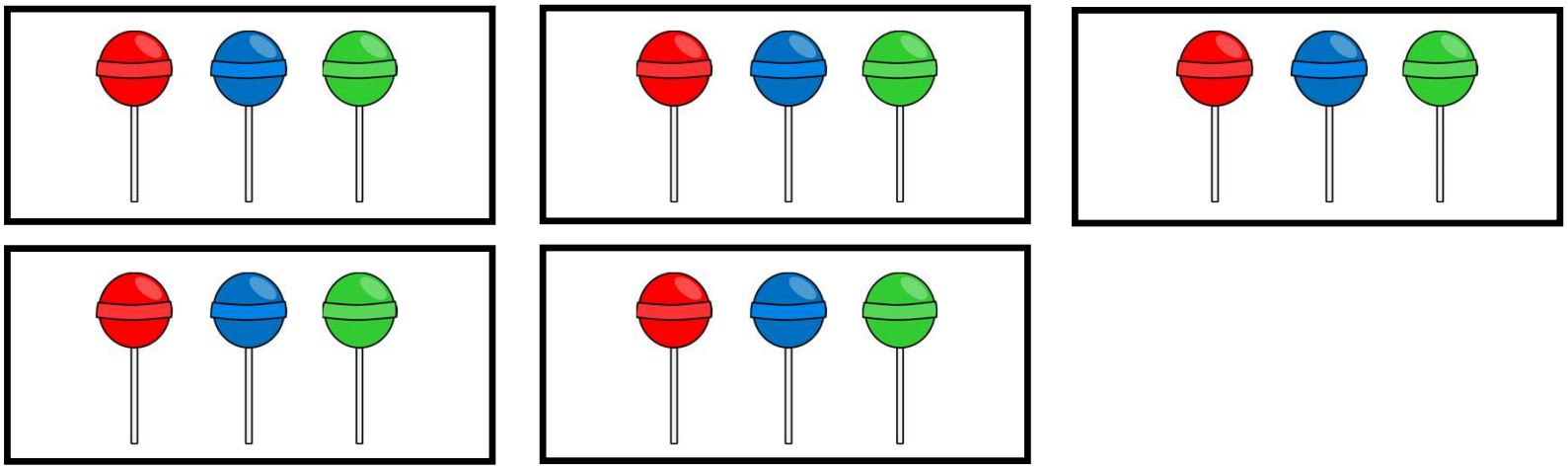
Equation

Answer

Problem #1
YOUR TURN

Sherry purchased 15 lollipops for her 5 friends to share. If she gives each friend the same number of lollipops, how many lollipops will each friend get? Draw a division model and solve it.

Model



Equation

$15 \div 5 = 3$

Answer

Each friend will get 3 lollipops.

Problem #2
YOUR TURN

There are 24 pencils in a case. Six students equally shared the pencils. How many pencils did each child get? Draw a division model and solve it.

Model

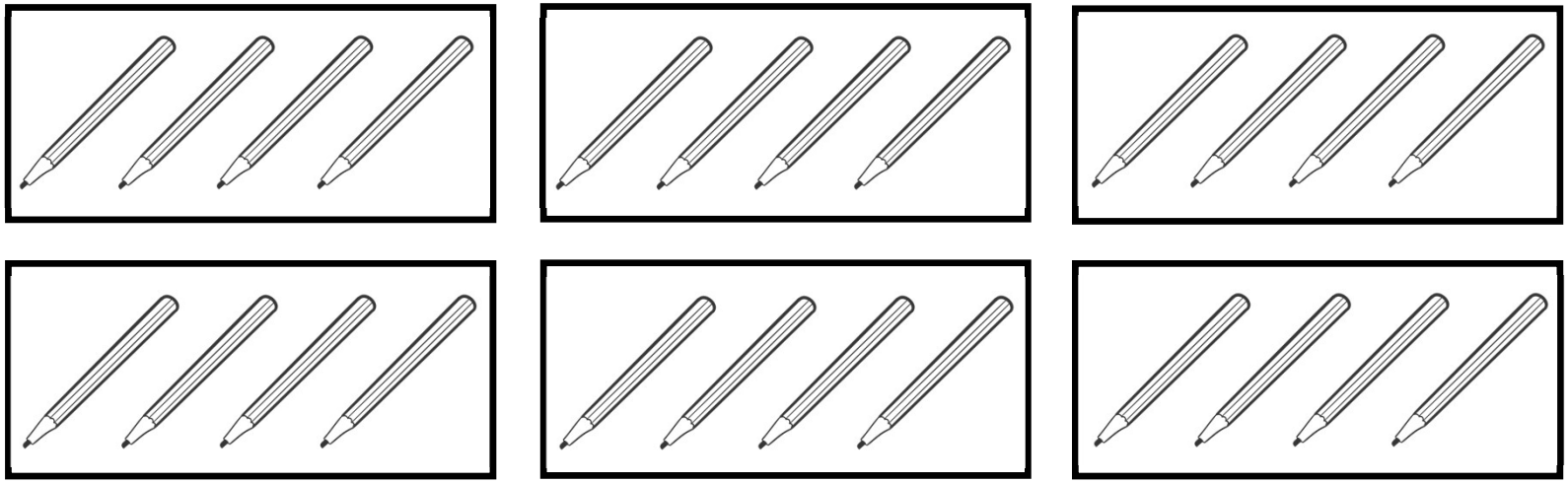
Equation

Answer

Problem #2
YOUR TURN

There are 24 pencils in a case. Six students equally shared the pencils. How many pencils did each child get? Draw a division model and solve it.

Model



Equation

$24 \div 6 = 4$

Answer

Each child got 4 pencils.

Problem #3
YOUR TURN

Kelly has 30 markers and 6 boxes. She places the same number of markers in each box. How many markers are in each box? Draw a division model and solve it.

Model

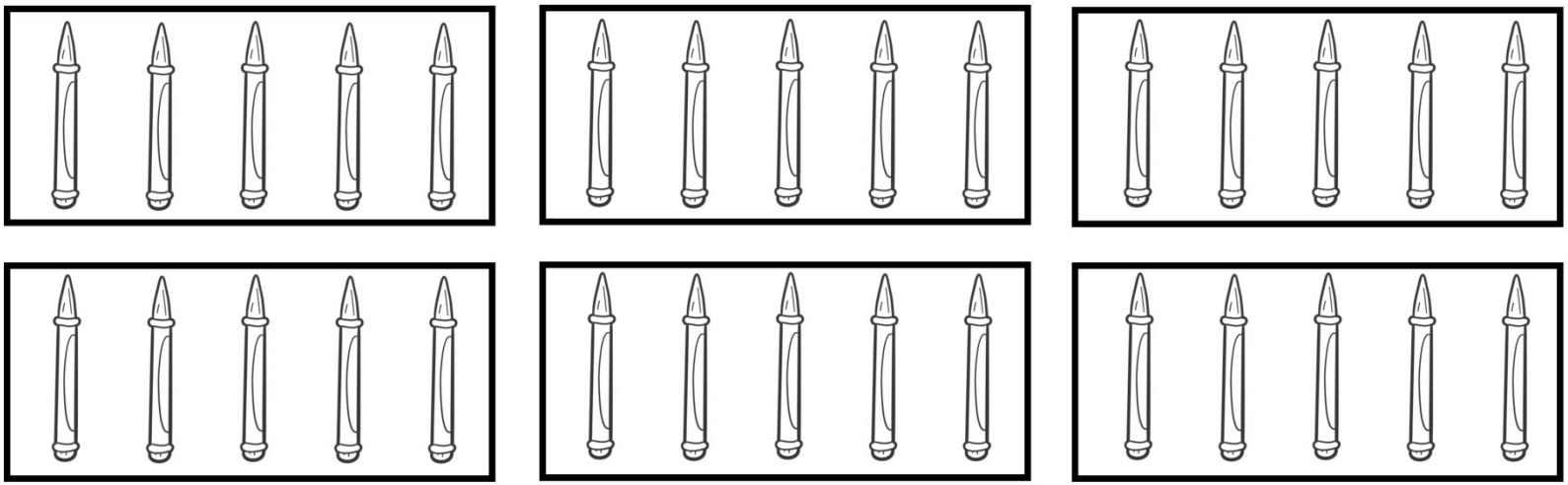
Equation

Answer

Problem #3
YOUR TURN

Kelly has 30 markers and 6 boxes. She places the same number of markers in each box. How many markers are in each box? Draw a division model and solve it.

Model



Equation

$30 \div 6 = 5$

Answer

There are 5 markers in each box.

Problem #4
YOUR TURN

Ms. Davis baked 24 cookies for her three grandchildren to share equally. How many cookies will each child get? Draw a division model and solve it.

Model

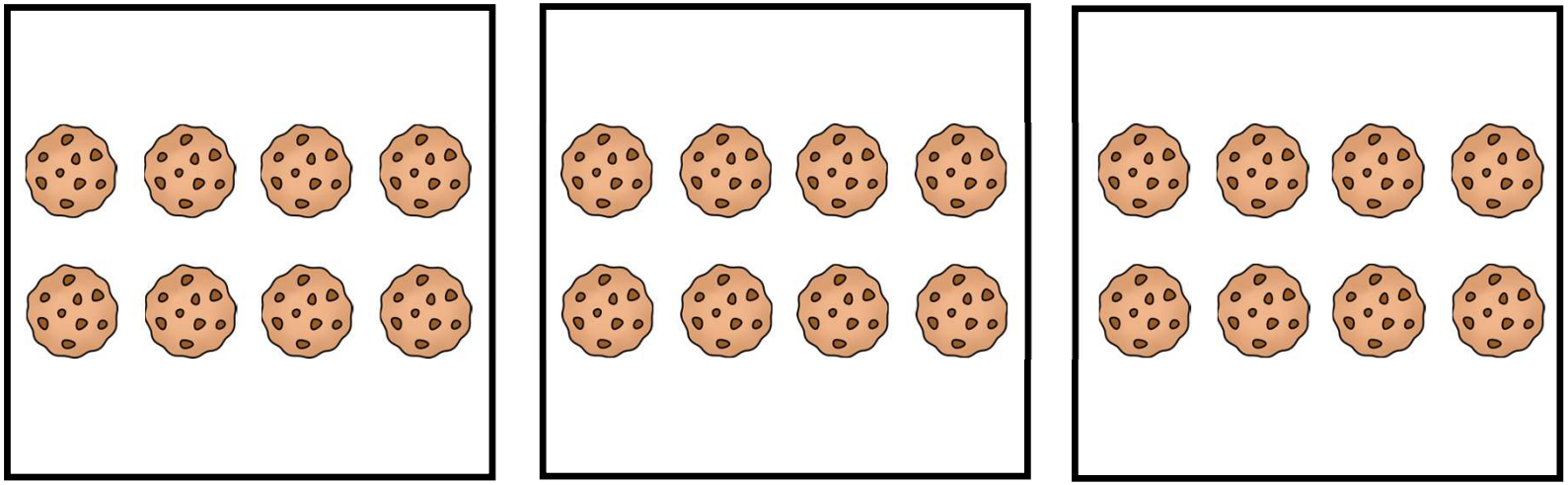
Equation

Answer

Problem #4
YOUR TURN

Ms. Davis baked 24 cookies for her three grandchildren to share equally. How many cookies will each child get? Draw a division model and solve it.

Model



Equation

$24 \div 3 = 8$

Answer

Each child will get 8 cookies.

Problem #5
YOUR TURN

Luis collected 40 rocks on the walking trail. He placed the same number of rocks in each of 4 jars. How many rocks are in each jar? Draw a division model and solve it.

Model

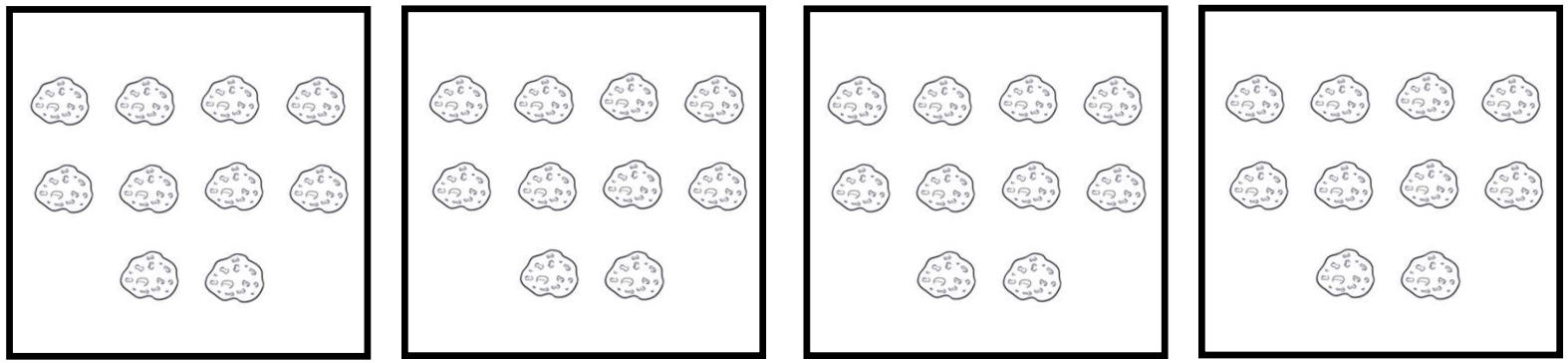
Equation

Answer

Problem #5
YOUR TURN

Luis collected 40 rocks on the walking trail. He placed the same number of rocks in each of the 4 jars. How many rocks are in each jar? Draw a division model and solve it.

Model



Equation

$40 \div 4 = 10$

Answer

There are 10 rocks in each jar.

Problem #6
YOUR TURN

The librarian donated 35 books to share equally among 5 students. If each student received the same number of books, how many books did each child get? Draw a division model and solve it.

Model

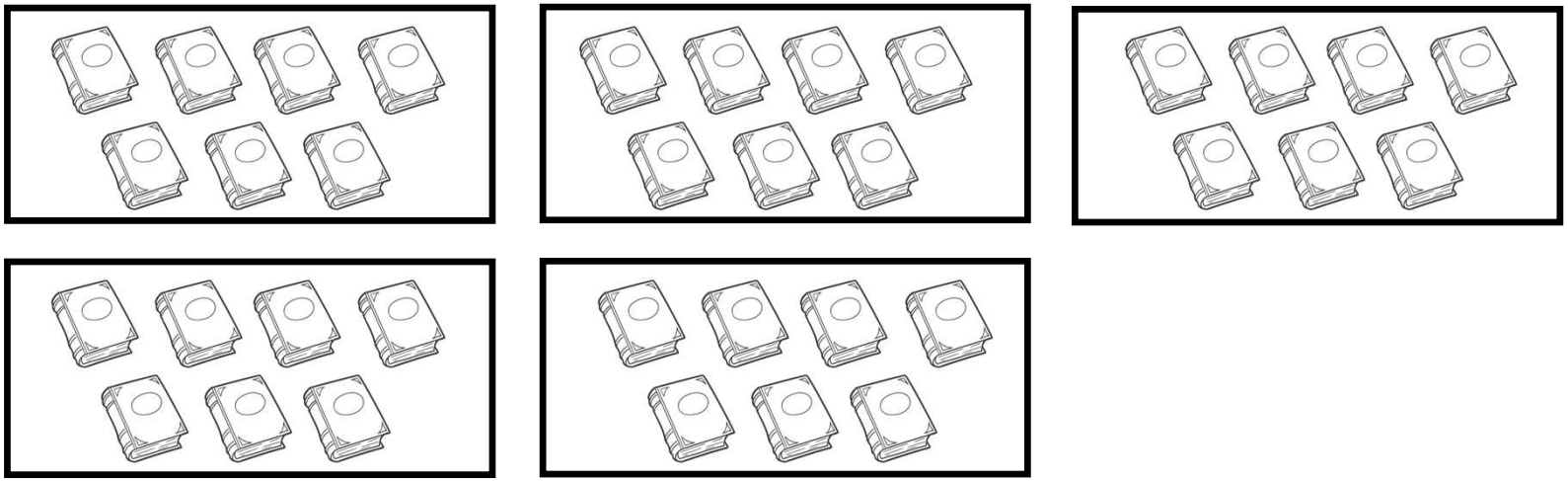
Equation

Answer

Problem #6
YOUR TURN

The librarian donated 35 books to share equally among 5 students. If each student received the same number of books, how many books did each child get? Draw a division model and solve it.

Model



Equation

$35 \div 5 = 7$

Answer

Each child got 7 books.

Let's Reflect

It's reflection time!