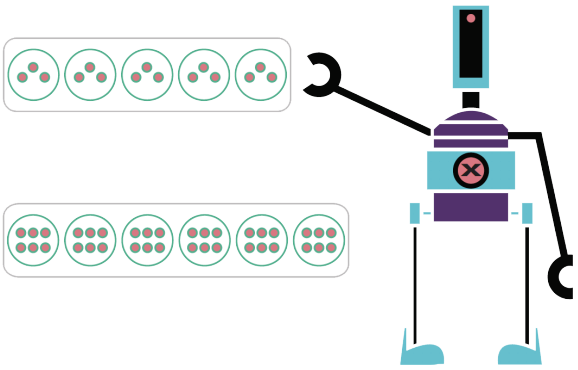
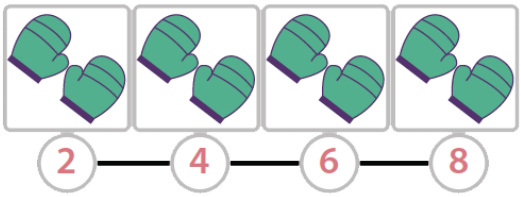
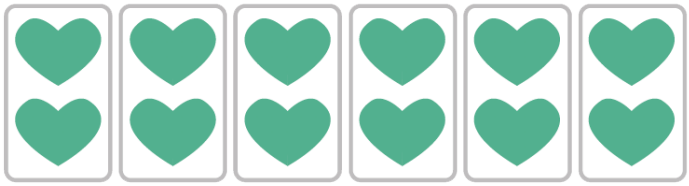
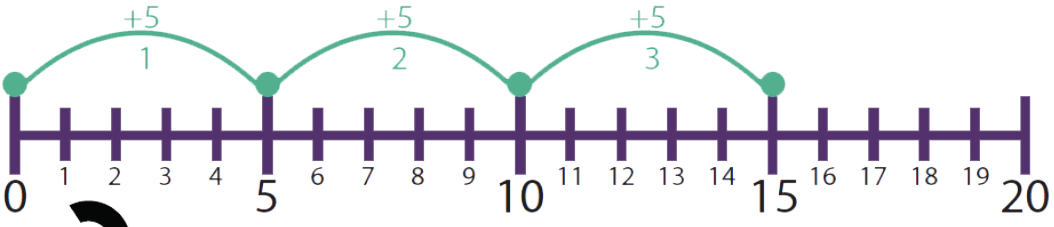
Fundamentals of Multiplication

3rd Grade

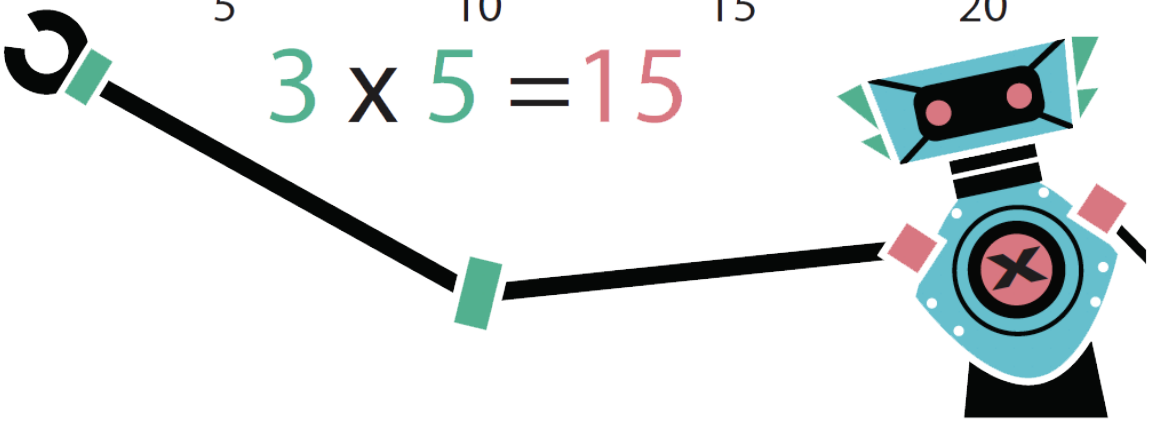


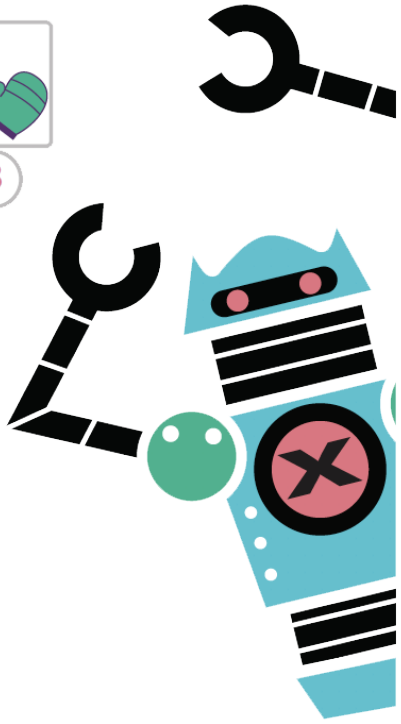






$3 \times 5 = 15$





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* *Includes Answer Sheet*

Multiplication:
Let's Make an Array!

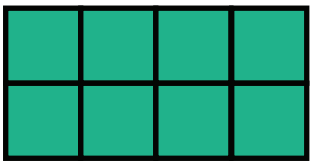
Review what each factor represents in this multiplication sentence:

rows ← 4 x 3 = 12 → total number of objects

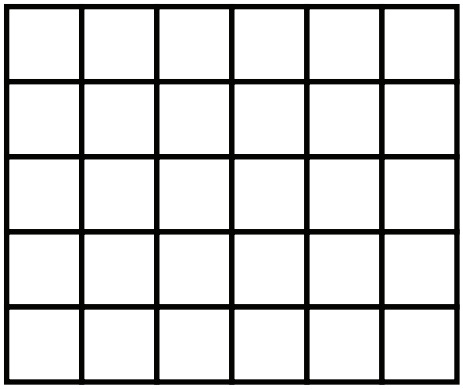
objects in each row

Make an array for each multiplication problem and fill in the answer. Color in each array.

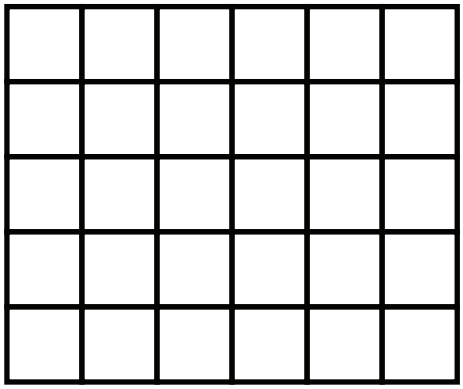
Example: 2 x 4 = 8



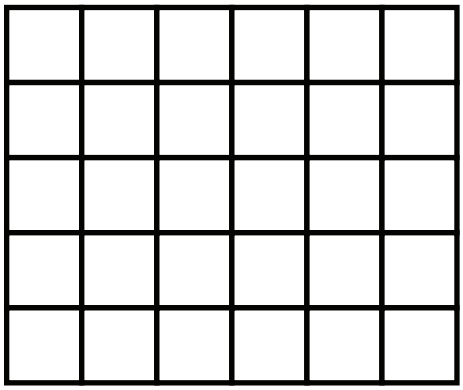
1. 4 x 4 =16



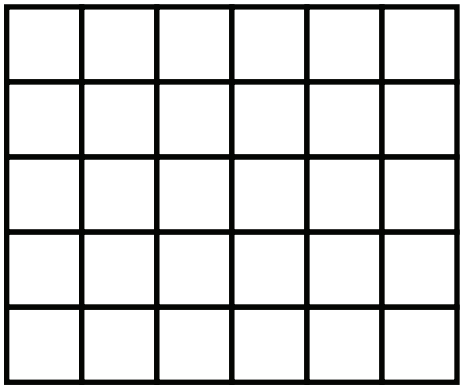
2. 3 x 5 = 15



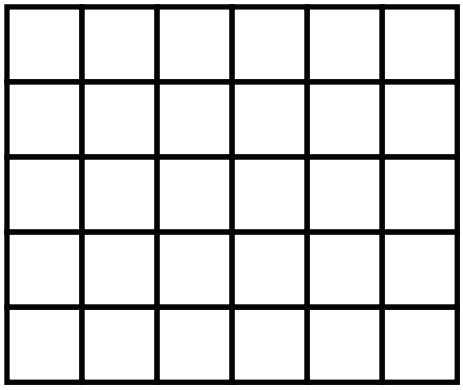
3. 4 x 5 = 20

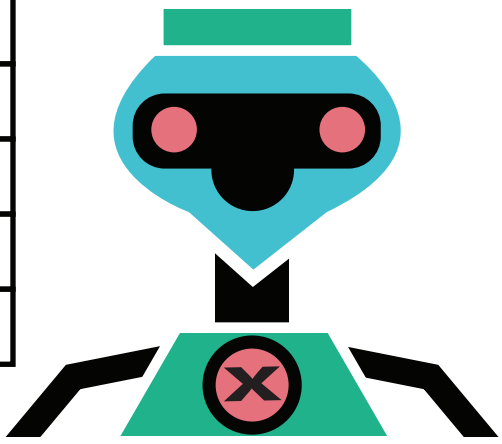


4. 1 x 2 = 2



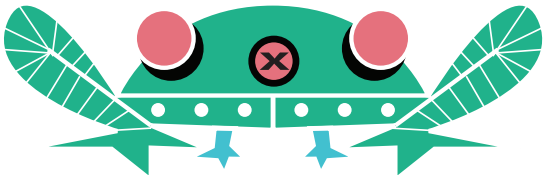
5. 6 x 5 = 30





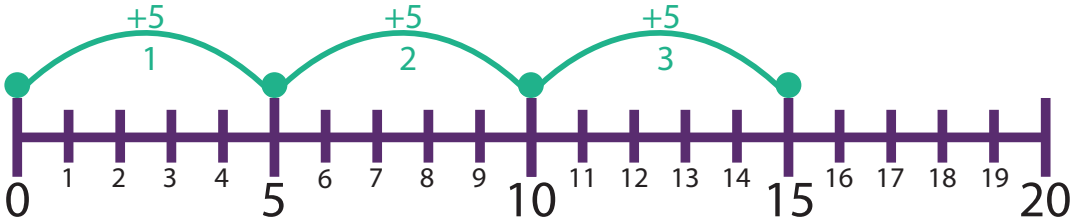
Multiplication:

Hop Along the Number Line to Multiply



Hoppy the frog-bot hopped up this number line to solve 3 x 5:

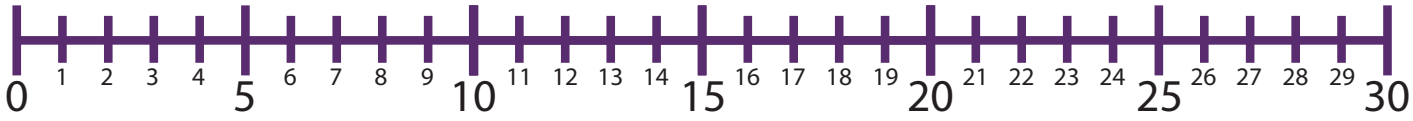
Example:



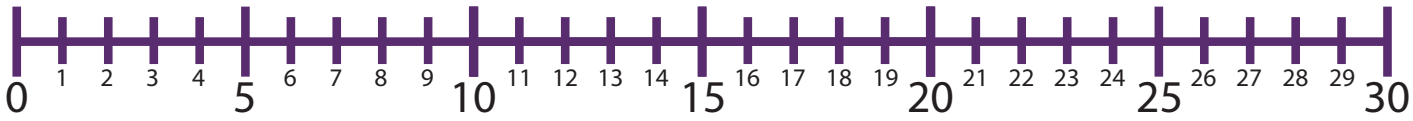
$3 \times 5 = 15$

Directions: Hop up the number to find the product (answer). Write your answer on the blank space.

1. 7 x 4 = ___

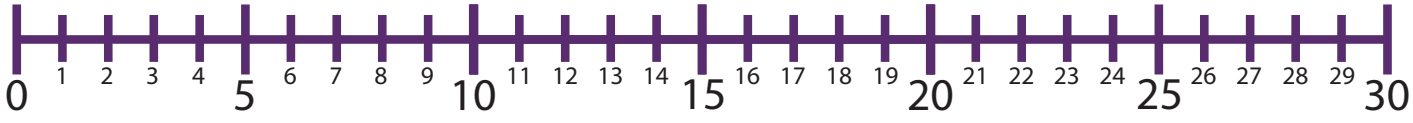


2. 5 x 5 = ____



3. 11 x 2 = ____

4. 3 x 10 = ____

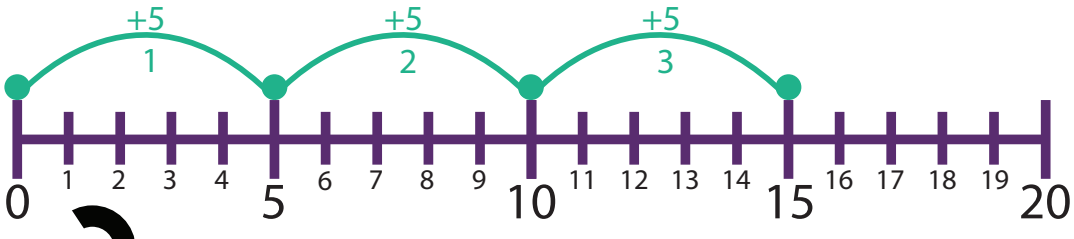


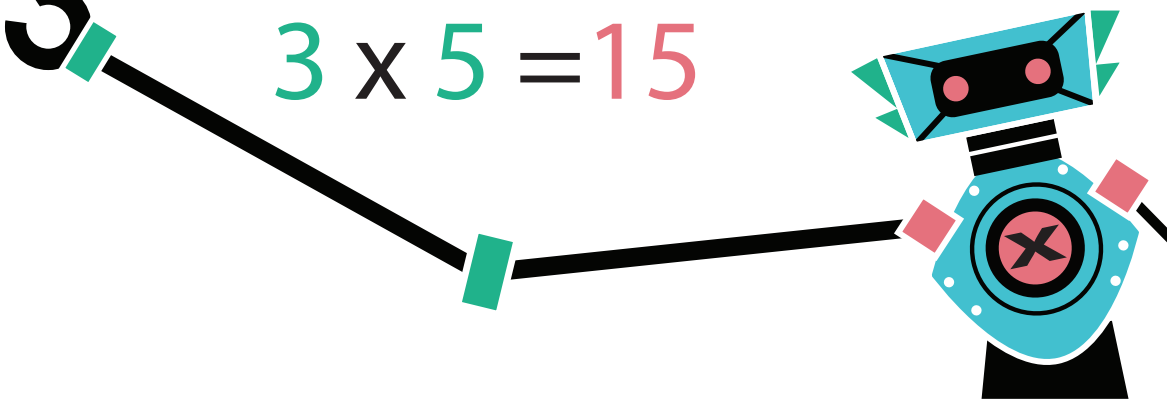
Multiplication:

Hop Along the Number Line to Multiply (Part 2)

Directions: Hop along the number line to solve each multiplication problem. The first problem has been done for you.

Example:

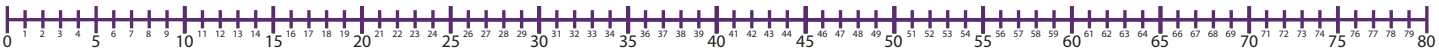




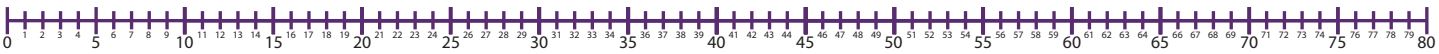
1. 8 x 4 = ____

2. 9 x 7 = _____

3. 11 x 7 = _____



4. 8 x 10 = _____

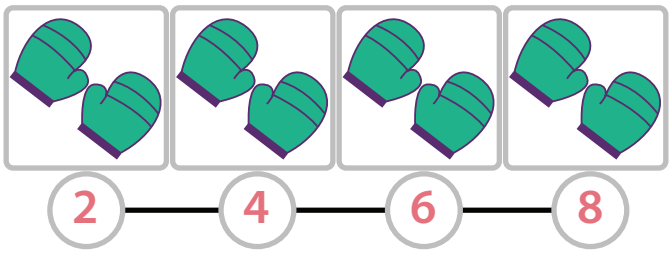


Multiplication:

Skip-Counting to find the Total

Directions: Use skip-counting to find the total number of objects.

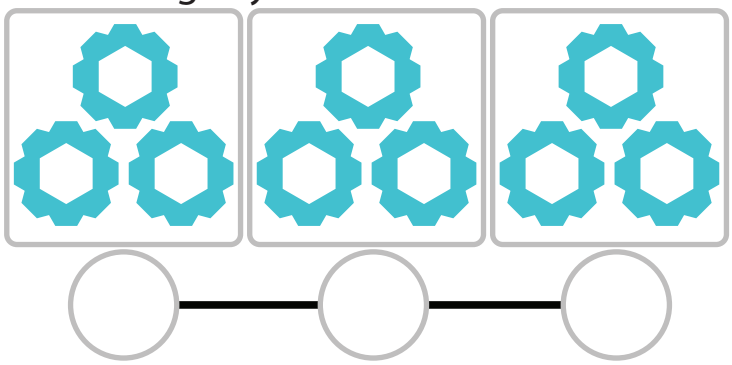
Example: Count the mittens by 2's.



Total: 8

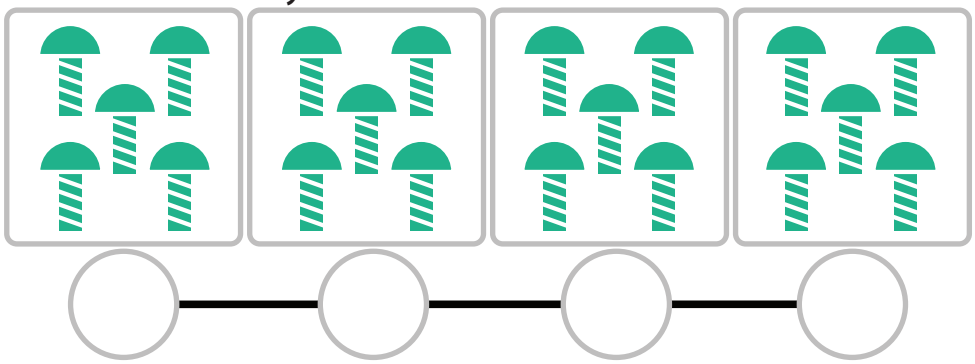
Now you try!

1. Count the cogs by 3's.



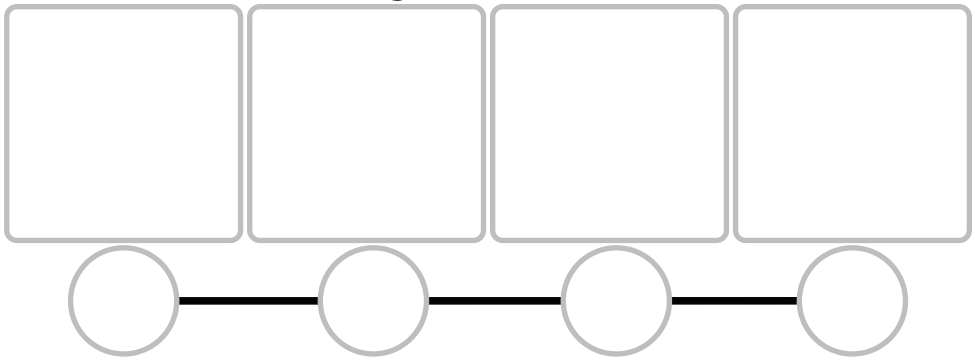
Total: ___

2. Count the screws by 5's.

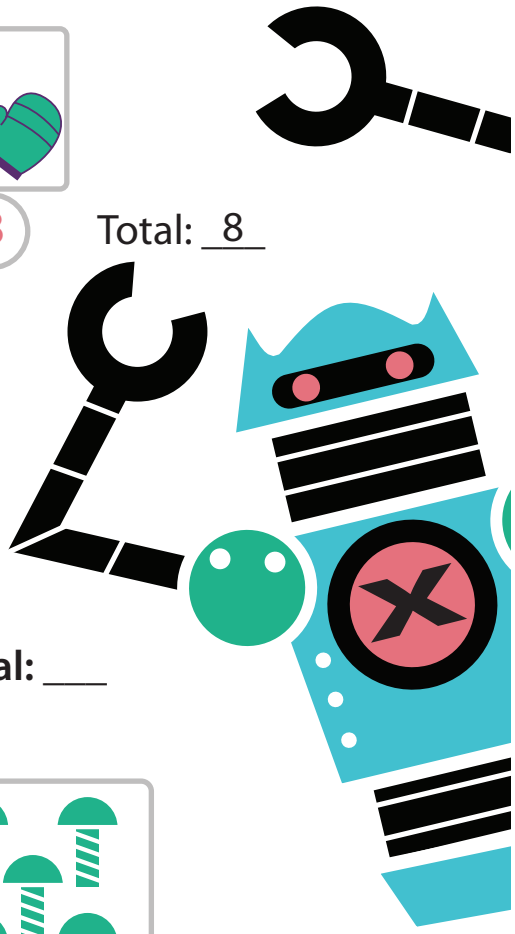


Total: ___

3. Draw 4 fish bowls with 3 goldfish in each bowl.



Total: ___

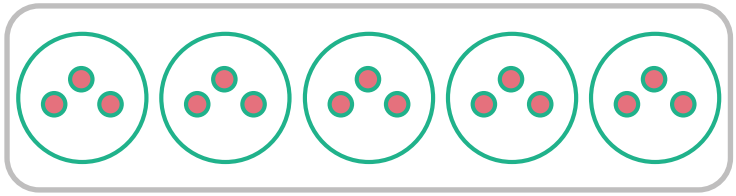


Multiplication:

Equal Group Problems

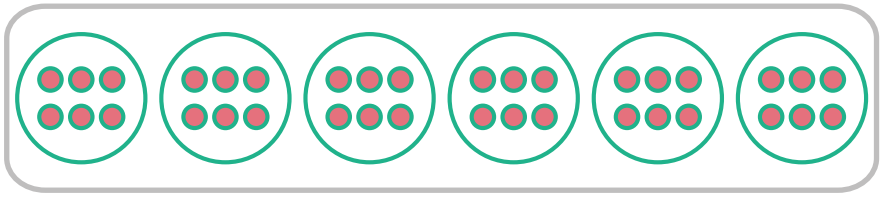
Directions: Use the equal group drawings to solve the multiplication problems.

1.



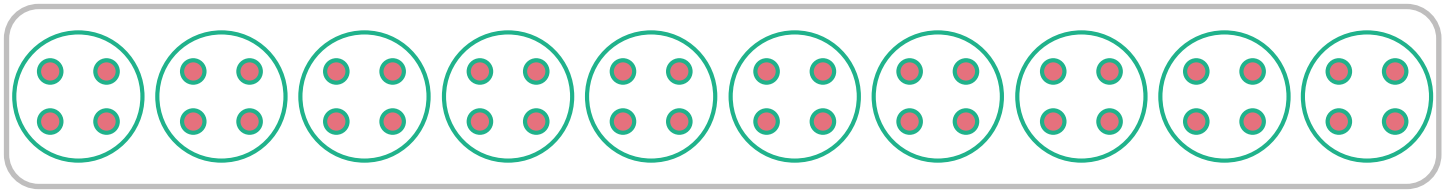
5 x 3 = ____

2.



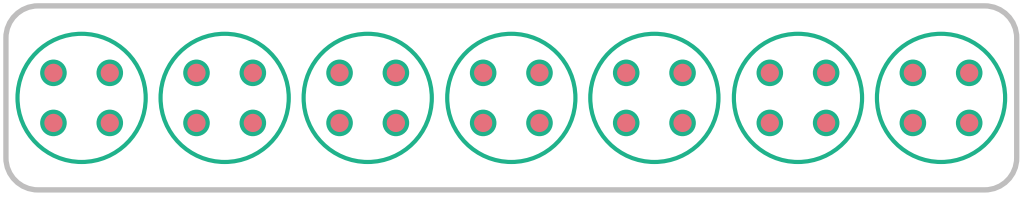
6 x 6 = ____

3.

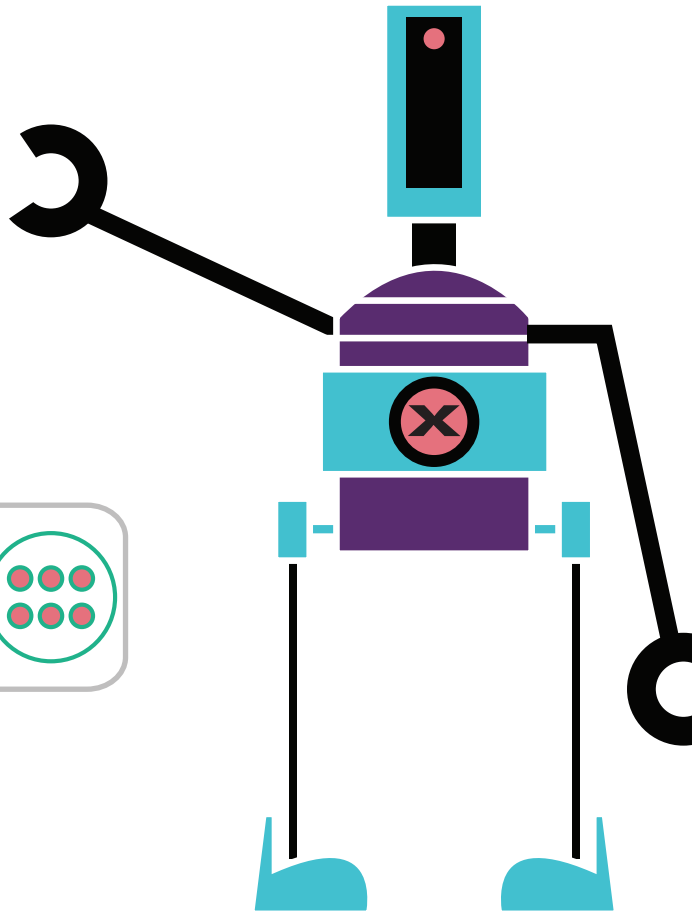


10 x 4 = ____

4.



7 x 4 = ____



Multiplication:

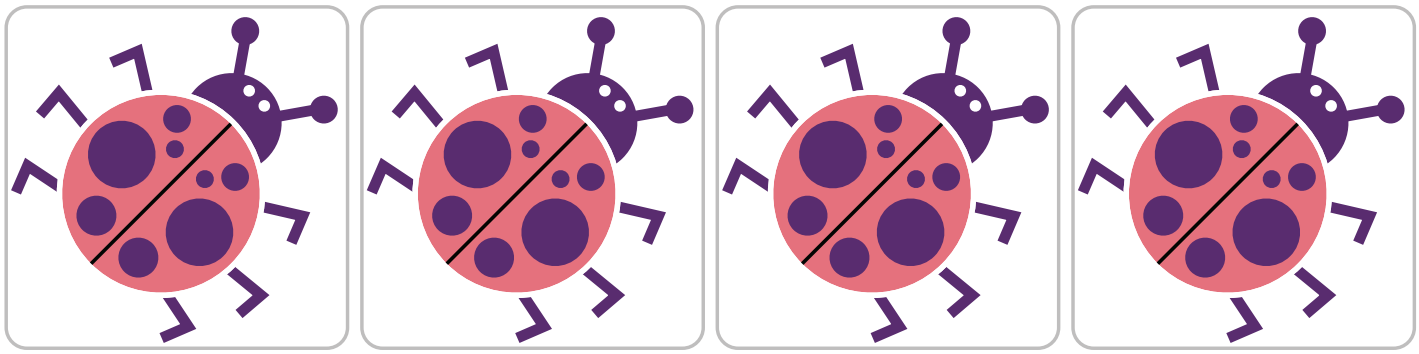
Equal Group Problems 2

Let's review how to label the different parts of a multiplication sentence.

# of groups ← 2 x 5 = 10 → **total # of objects**

# of objects in each group

Directions: Before these lovely ladybugs fly away, write a multiplication sentence to solve each problem.



1. Find the total number of dots on the ladybugs.

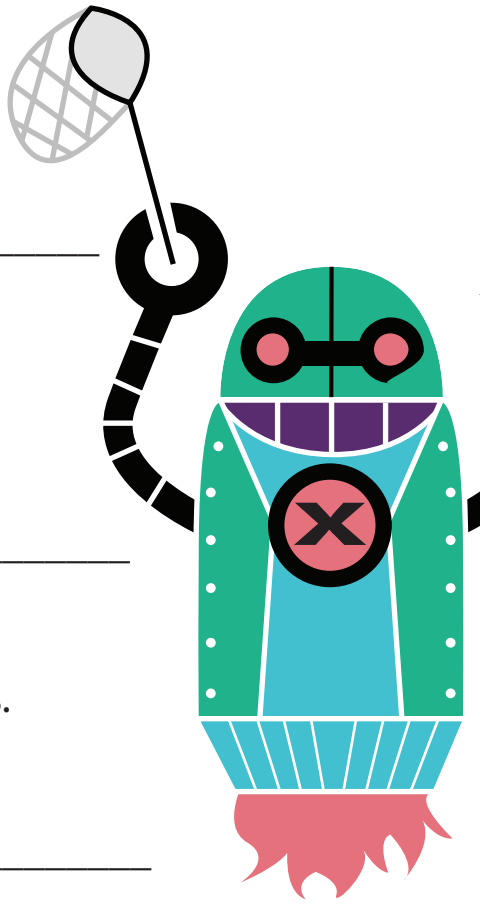
Multiplication sentence:_____

2. Find the total number of legs on the ladybugs.

Multiplication sentence: _____

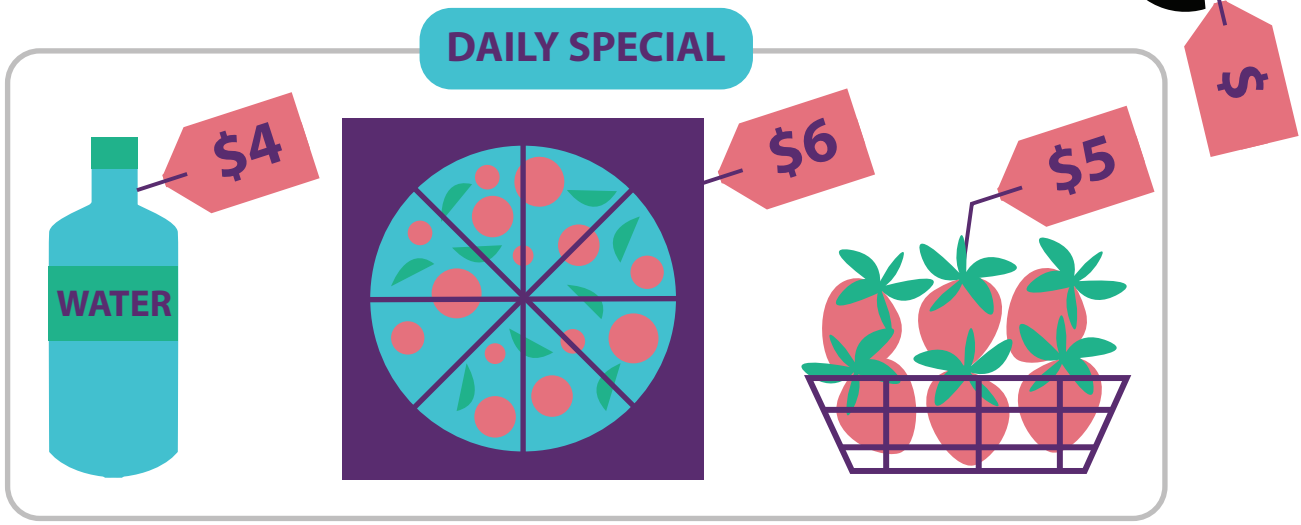
3. Find the total number of antennae on the ladybugs.

Multiplication sentence: _____



Multiplication:
Daily Specials

Directions: Write a multiplication sentence for each question.



Example: How much does it cost to buy 2 bottles of water? 2 x $4 = $8

1. How much does it cost to buy 3 bottles of water? _____

2. How much does it cost to buy 4 bottles of water? _____

3. How much does it cost to buy 4 baskets of strawberries? _____

4. How much does it cost to buy 5 baskets of strawberries? _____

5. How much does it cost to buy 3 pizzas? _____

If you paid $12 for three bottles of water, show two ways to figure out how much you would pay for six bottles of water. Explain your thinking.

_____

_____

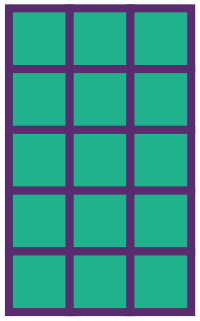
_____

Multiplication:

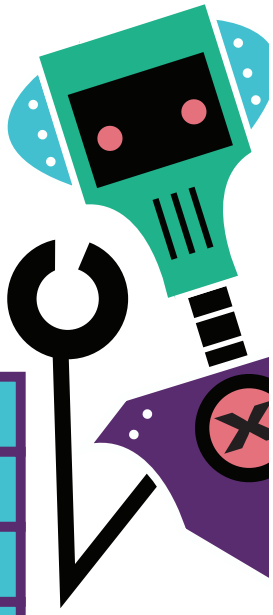
Array Multiplication

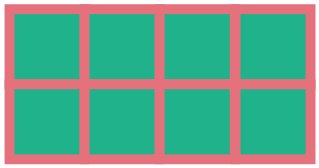
Directions: Record the number of rows and columns for each array. Then, write a multiplication sentence for the array.

Example:

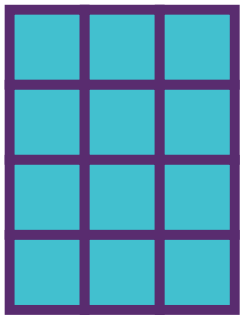


Number of rows: 5
Number of columns: 3
Multiplication sentence: 5 x 3 = 15

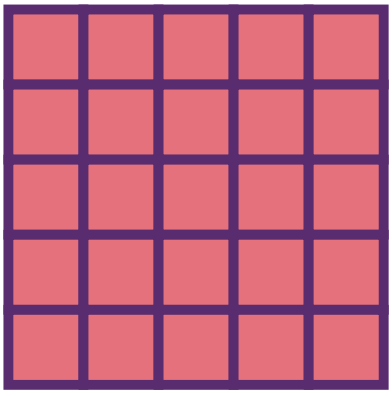




1. Number of rows: _____
Number of columns: _____
Multiplication sentence: _____



2. Number of rows: _____
Number of columns: _____
Multiplication sentence: _____



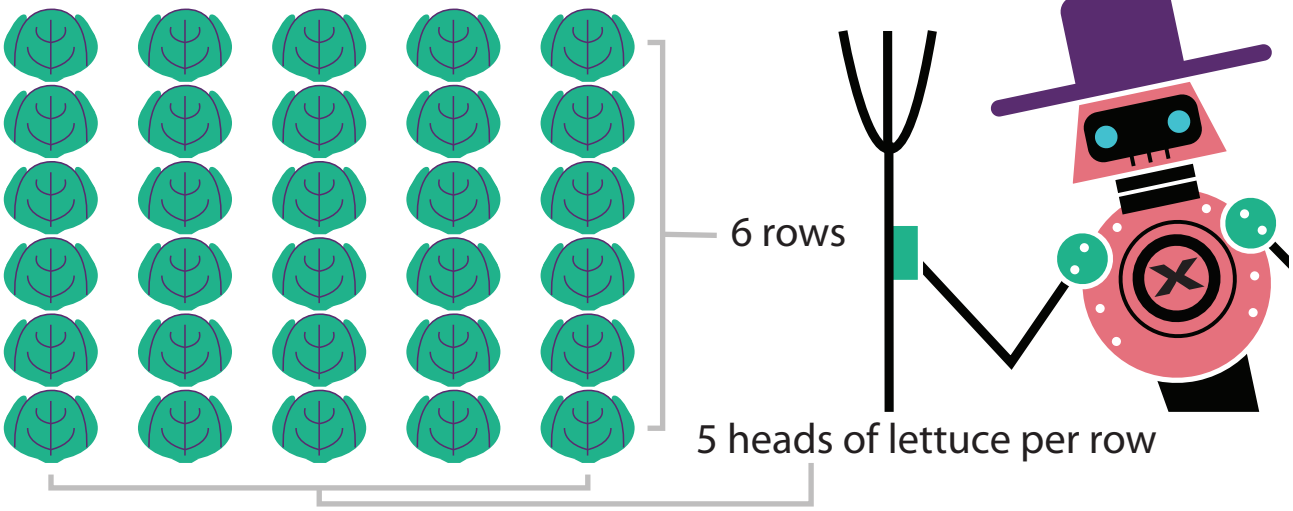
3. Number of rows: _____
Number of columns: _____
Multiplication sentence: _____

4. Number of rows: _____
Number of columns: _____
Multiplication sentence: _____

Multiplication:

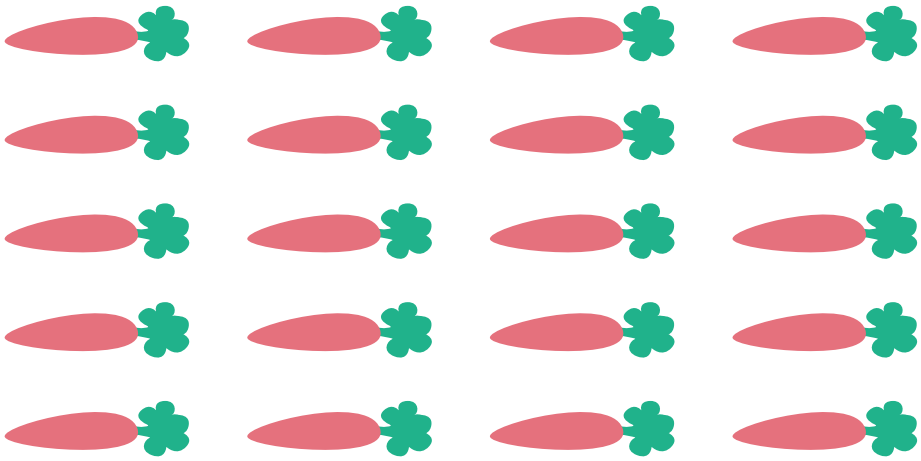
Array Multiplication 2

Farmer Gordon is hosting a dinner party and wants to find out how many heads of lettuce he has in his garden.



Farmer Gordon wants to find the total quickly, so he used a multiplication sentence to find his answer: **6 x 5 = 30 heads of lettuce**

Now you try! Find out the total number of carrots in this garden.



How many rows of carrots do you see? _____

How many carrots are in each row? _____

Write a multiplication sentence to find out the total number of carrots in this garden:

_____

Multiplication:

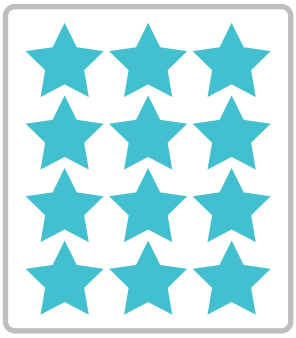
Multiplication Arrays

Directions: Represent each problem by drawing an array.

5 x 5 = 25 	2 x 6 =	2 x 5 =
7 x 4 =	8 x 4 =	6 x 4 =
8 x 3 =	5 x 3 =	7 x 2 =
3 x 3 =	4 x 3 =	7 x 5 =

Multiplication:
Finding the Total with Arrays

An array is an arrangement of objects in columns and rows. Drawing an array can help you solve multiplication problems.



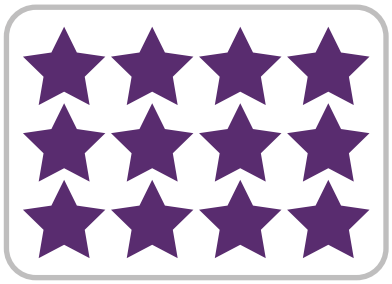
In this array, there are 4 rows with 3 stars in each row.

There are 12 stars in total.

The multiplication sentence for this array is:

rows ← 4 x 3 = 12 → total # of stars

stars in each row ↓



1. Number of rows: _____
Number of stars in each row: _____
Multiplication sentence: _____

2. Number of rows: _____
Number of stars in each row: _____
Multiplication sentence: _____

3. Number of rows: _____
Number of stars in each row: _____
Multiplication sentence: _____

4. Number of rows: _____
Number of stars in each row: _____
Multiplication sentence: _____

Multiplication:

Multiplication Word Problems

Use one of the following strategies when solving the following word problems:

- Draw an array
- Draw equal groups
- Skip count forwards
- Repeated Addition
- Multiplication Sentence

Write the strategy you used on the line provided and show your work.

1. Tiffany wants to bake 6 batches of cookies. She will need 2 cups of sugar for each batch of cookies. How many cups of sugar will Tiffany need?

Strategy: _____ Show work:

Answer: _____

2. Tommy's mom asked him to help her clean the house. His mom has asked him to sweep his bedroom floor, the laundry room, and the kitchen. He estimates that it is going to take him 10 minutes to sweep out each room. About how many minutes will it take Tommy to help his mom clean the house?

Strategy: _____ Show work:

Answer: _____

3. Addie visited the elephant exhibit at the zoo. If there were 7 elephants in the exhibit, how many elephant legs did Addie see?

Strategy: _____ Show work:

Answer: _____

Multiplication:

Multiplication Word Problems 2

Use one of the following strategies when solving the following word problems:

- Draw an array
- Draw equal groups
- Skip count forwards
- Repeated Addition
- Multiplication Sentence

Write the strategy you used on the line provided and show your work.

1. Brittany ate 8 oranges in one week. Each orange had 6 slices. How many orange slices did Brittany eat altogether?

Strategy: _____ Show work:

Answer: _____

2) Devon collected 5 bags of marbles. Each bag had 12 marbles in it. How many marbles did Devon collect altogether?

Strategy: _____ Show work:

Answer: _____

3) Hillary read 7 chapters in her book on Tuesday. Each chapter had 6 pages in it. How many pages did Hillary read on Tuesday?

Strategy: _____ Show work:

Answer: _____

Multiplication:

Equal Groups All Around

Groups of objects are really, quite neat,

from legs on a spider to your hands and your feet;

What can you find in a pair of two?

Your socks and your arms and even your shoe;

And, what might you see in a group of 3?

Sides on a triangle or birds in a tree.

From a four-legged dog to the wheels on a car,

equal groups of 4 can be found near or far;

Just step outside and take a good look around,

You'll certainly see that equal groups abound.

DIPLOMA

Hereby bestowed upon

_____

for excellence in
completion of

_____

Answer Sheets

Fundamentals of Multiplication

Multiplication: Let's Make an Array
Multiplication: Hop Along the Number Line (Part One)
Multiplication: Hop Along the Number Line (Part Two)
Multiplication: Skip Counting to Find the Total
Multiplication: Equal Group Problems (Part One)
Multiplication: Equal Group Problems (Part Two)
Multiplication: Daily Specials
Multiplication: Array Multiplication (Part One)
Multiplication: Array Multiplication (Part Two)
Multiplication: Star Arrays
Multiplication: Finding the Total with Arrays
Multiplication: Word Problems (Part One)
Multiplication: Word Problems (Part Two)

Answer Sheet

Multiplication:
Let's Make an Array!

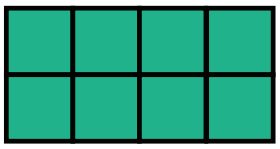
Review what each factor represents in this multiplication sentence:

rows ← 4 x 3 = 12 → total number of objects

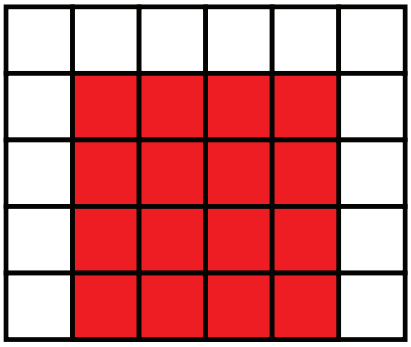
3 ↓ objects in each row

Make an array for each multiplication problem and fill in the answer. Color in each array.

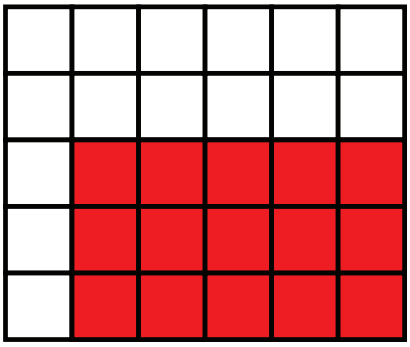
Example: 2 x 4 = 8



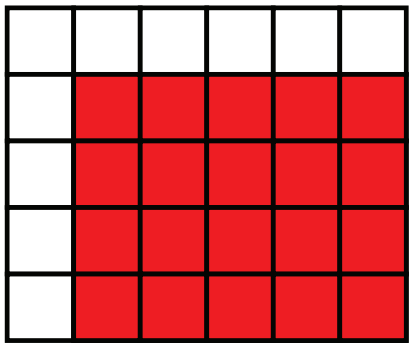
1. 4 x 4 = 16



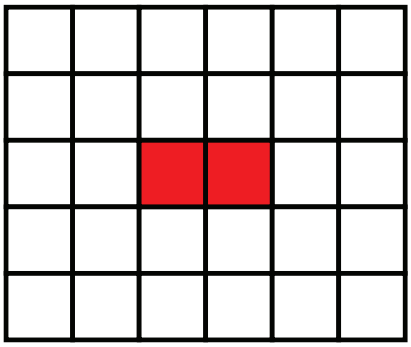
2. 3 x 5 = 15



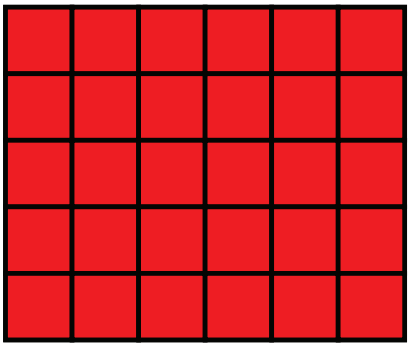
3. 4 x 5 = 20



4. 1 x 2 = 2



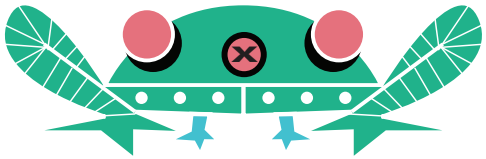
5. 6 x 5 = 30



Answer Sheet

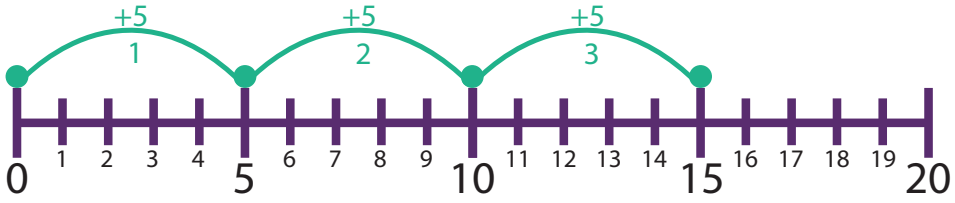
Multiplication:

Hop Along the Number Line to Multiply



Hoppy the frog-bot hopped up this number line to solve 3 x 5:

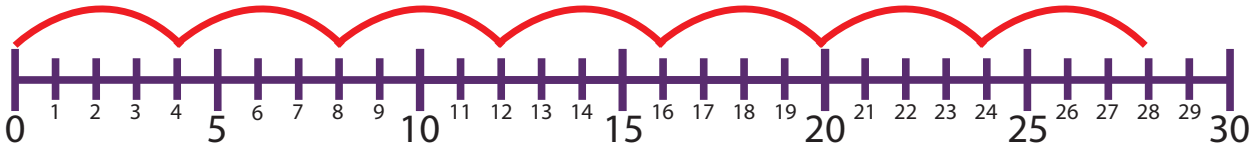
Example:



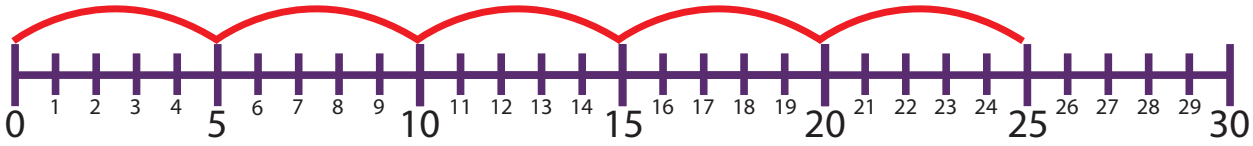
3 x 5 = 15

Directions: Hop up the number to find the product (answer). Write your answer on the blank space.

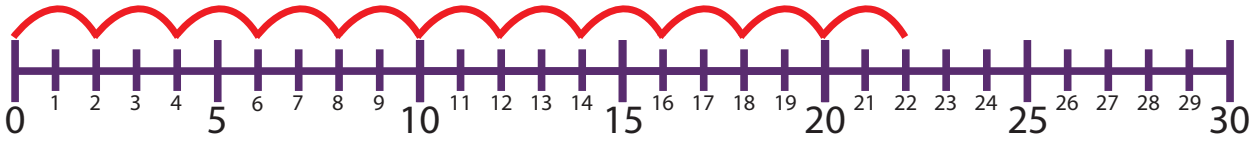
1. 7 x 4 = 28



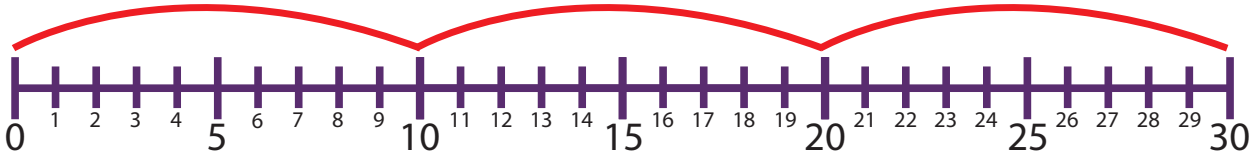
2. 5 x 5 = 25



3. 11 x 2 = 22



4. 3 x 10 = 30



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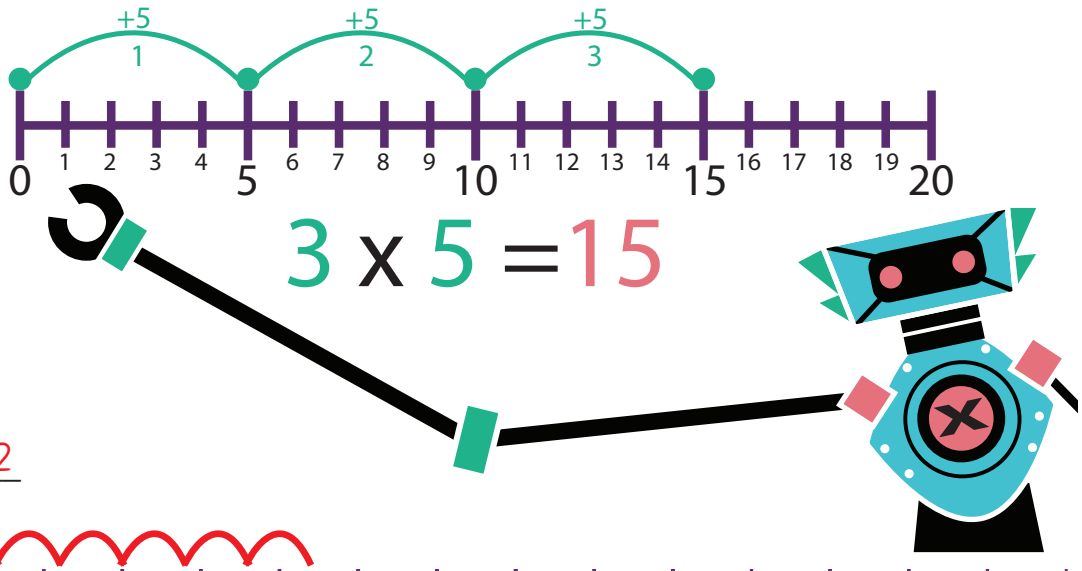
Answer Sheet

Multiplication:

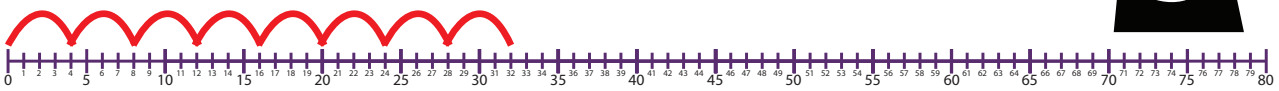
Hop Along the Number Line to Multiply (Part 2)

Directions: Hop along the number line to solve each multiplication problem. The first problem has been done for you.

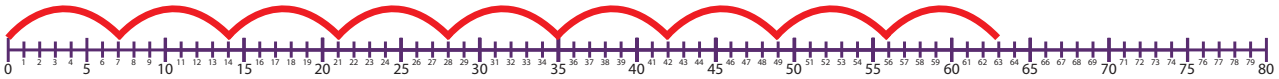
Example:



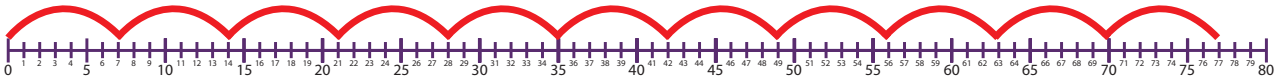
1. 8 x 4 = 32



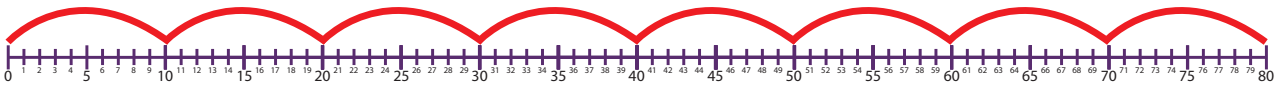
2. 9 x 7 = 63



3. 11 x 7 = 77



4. 8 x 10 = 80



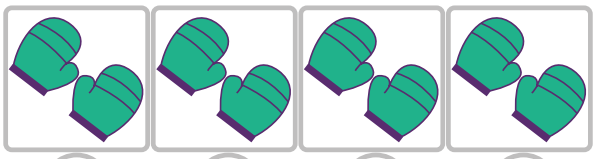
Answer Sheet

Multiplication:

Skip-Counting to find the Total

Directions: Use skip-counting to find the total number of objects.

Example: Count the mittens by 2's.

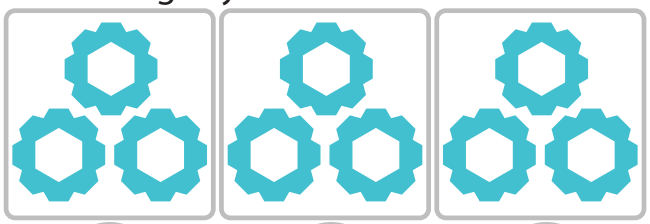


2 — 4 — 6 — 8

Total: 8

Now you try!

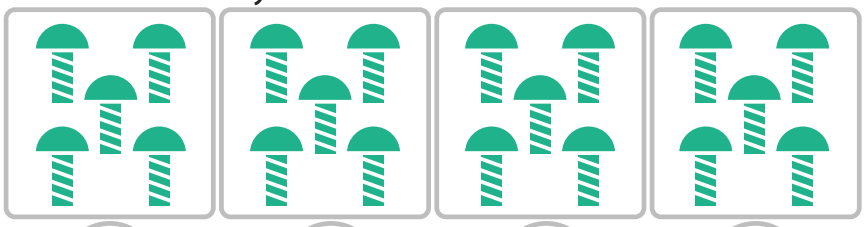
1. Count the cogs by 3's.



3 — 6 — 9

Total: 9

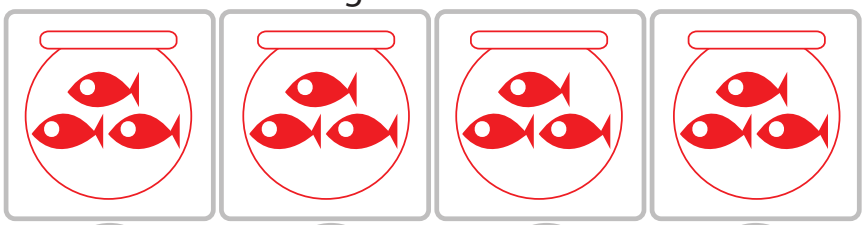
2. Count the screws by 5's.



5 — 10 — 15 — 20

Total: 20

3. Draw 4 fish bowls with 3 goldfish in each bowl.



3 — 6 — 9 — 12

Total: 12

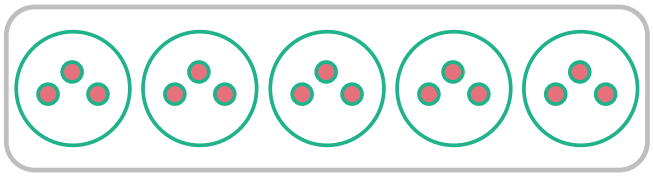
Answer Sheet

Multiplication:

Equal Group Problems

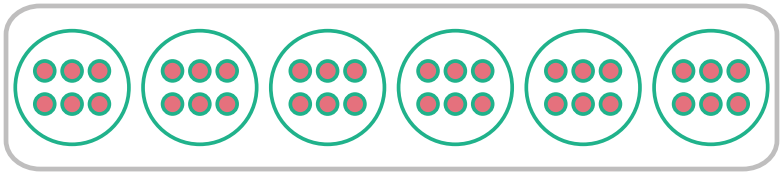
Directions: Use the equal group drawings to solve the multiplication problems.

1.

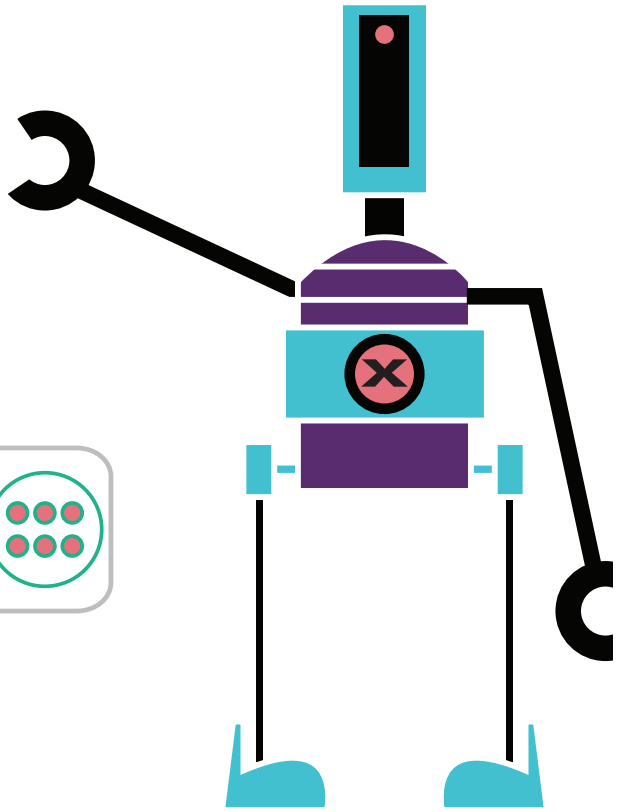


5 x 3 = 15

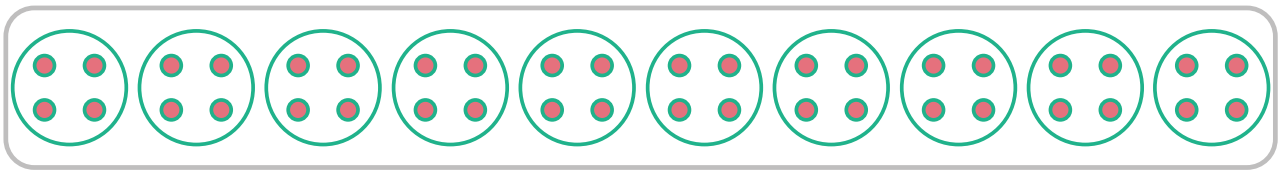
2.



6 x 6 = 36

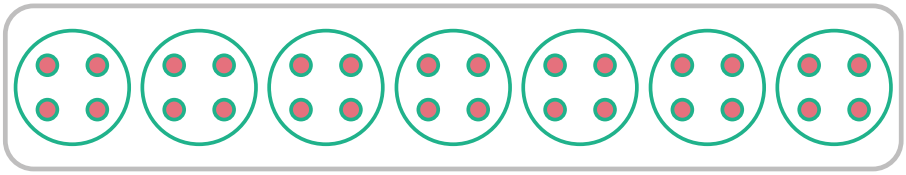


3.



10 x 4 = 40

4.



7 x 4 = 28

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Answer Sheet

Multiplication:

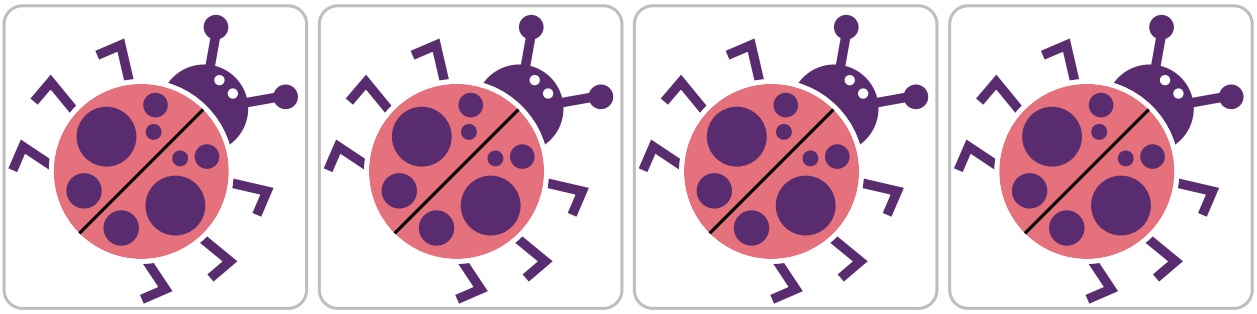
Equal Group Problems 2

Let's review how to label the different parts of a multiplication sentence.

# of groups ← 2 x 5 = 10 → **total # of objects**

# of objects in each group

Directions: Before these lovely ladybugs fly away, write a multiplication sentence to solve each problem.



1. Find the total number of dots on the ladybugs.

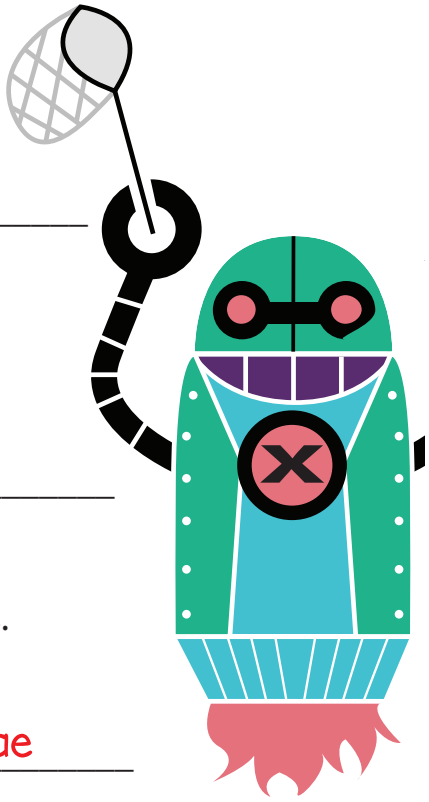
Multiplication sentence: 4 x 8 = 32 dots

2. Find the total number of legs on the ladybugs.

Multiplication sentence: 4 x 6 = 24 legs

3. Find the total number of antennae on the ladybugs.

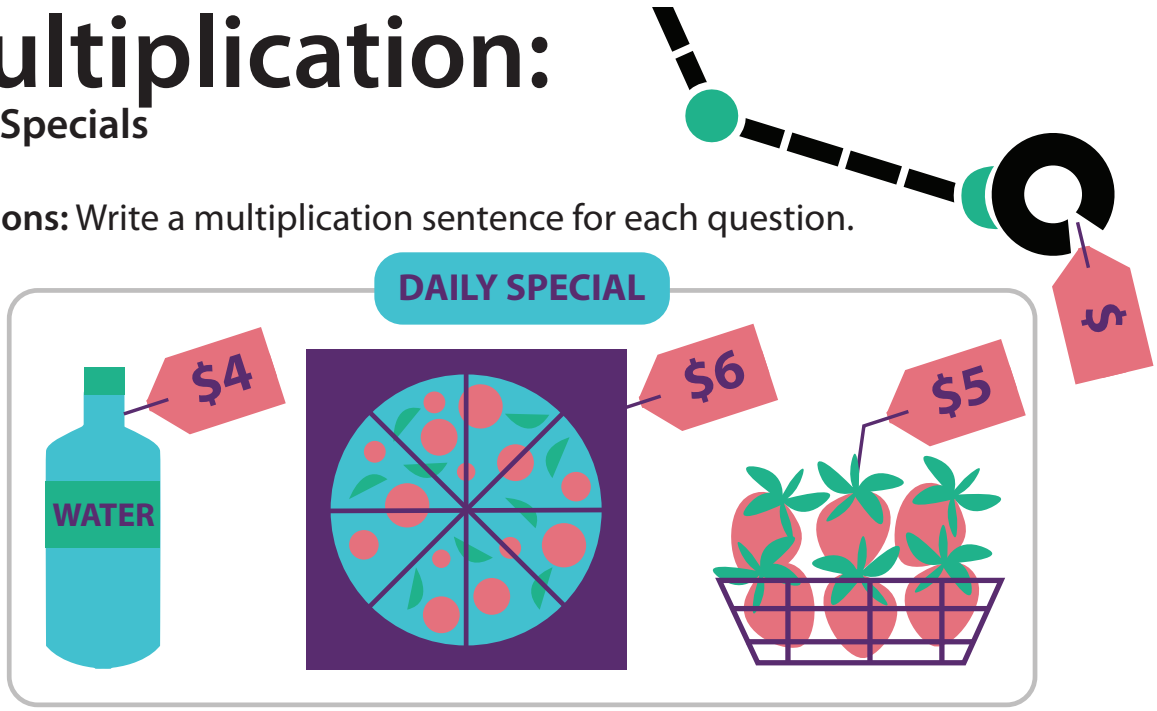
Multiplication sentence: 4 x 2 = 8 antennae



Answer Sheet

Multiplication:

Daily Specials



Directions: Write a multiplication sentence for each question.

Example: How much does it cost to buy 2 bottles of water? 2 x $4 = $8

1. How much does it cost to buy 3 bottles of water? 3 x $4 = $12
2. How much does it cost to buy 4 bottles of water? 4 x $4 = $16
3. How much does it cost to buy 4 baskets of strawberries? 4 x $5 = $20
4. How much does it cost to buy 5 baskets of strawberries? 5 x $5 = $25
5. How much does it cost to buy 3 pizzas? 3 x $6 = $18

If you paid $12 for three bottles of water, show two ways to figure out how much you would pay for six bottles of water. Explain your thinking.

The students should show how you can either double $12 as ($12 + $12) to show that you will pay $24 for six bottles of water since six is twice as many bottles as three. Or they could show that you could also multiply $12 by 2 to find that the total cost would be $24. There are multiple ways to think through to the correct answer.

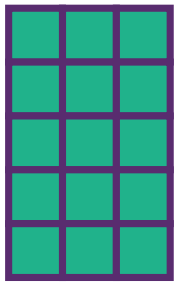
Answer Sheet

Multiplication:

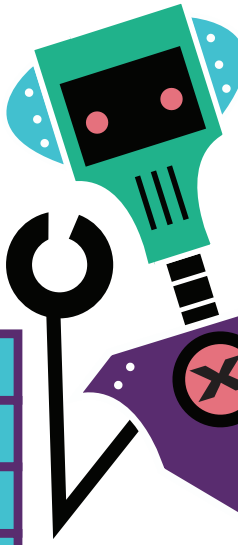
Array Multiplication

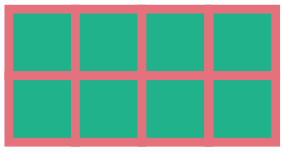
Directions: Record the number of rows and columns for each array. Then, write a multiplication sentence for the array.

Example:

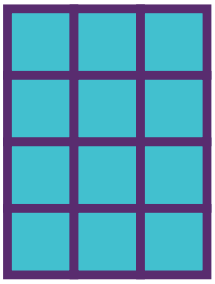


Number of rows: 5
Number of columns: 3
Multiplication sentence: 5 x 3 = 15

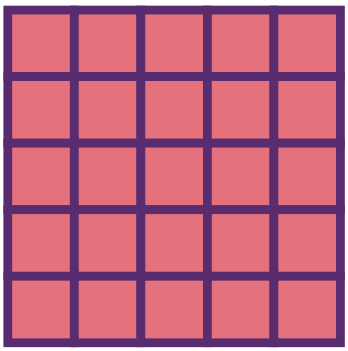




1. Number of rows: 2 rows
Number of columns: 4 columns
Multiplication sentence: 2 x 4 = 8



2. Number of rows: 4 rows
Number of columns: 3 columns
Multiplication sentence: 4 x 3 = 12



3. Number of rows: 5 rows
Number of columns: 5 columns
Multiplication sentence: 5 x 5 = 25

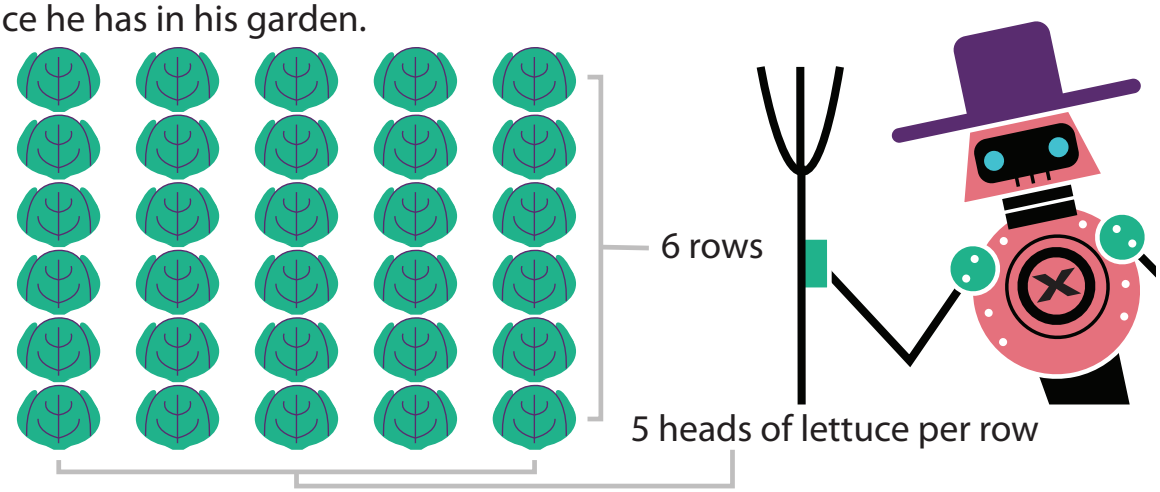
4. Number of rows: 1 row
Number of columns: 6 columns
Multiplication sentence: 1 x 6 = 6

Answer Sheet

Multiplication:

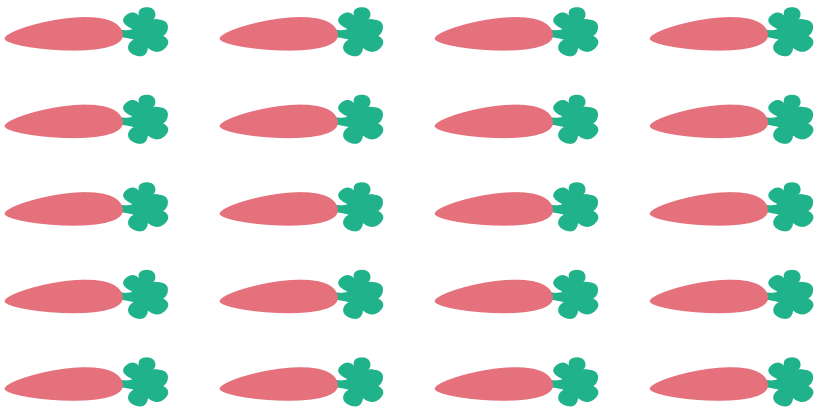
Array Multiplication 2

Farmer Gordon is hosting a dinner party and wants to find out how many heads of lettuce he has in his garden.



Farmer Gordon wants to find the total quickly, so he used a multiplication sentence to find his answer: **6 x 5 = 30 heads of lettuce**

Now you try! Find out the total number of carrots in this garden.



How many rows of carrots do you see? 5

How many carrots are in each row? 4

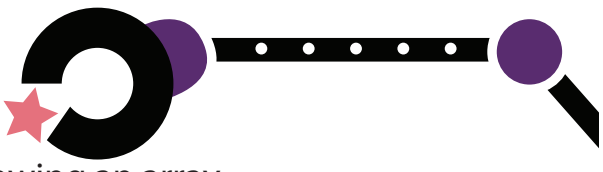
Write a multiplication sentence to find out the total number of carrots in this garden:

5 x 4 = 20

Answer Sheet

Multiplication:

Multiplication Arrays



Directions: Represent each problem by drawing an array.

5 x 5 = 25

2 x 6 = 12

2 x 5 = 10

7 x 4 = 28

8 x 4 = 32

6 x 4 = 24

8 x 3 = 24

5 x 3 = 15

7 x 2 = 14

3 x 3 = 9

4 x 3 = 12

7 x 5 = 35

Answer Sheet

Multiplication:
Finding the Total with Arrays

An array is an arrangement of objects in columns and rows. Drawing an array can help you solve multiplication problems.

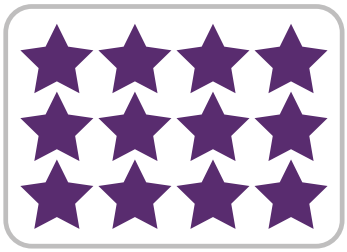
In this array, there are 4 rows with 3 stars in each row.

There are 12 stars in total.

The multiplication sentence for this array is:

rows ← 4 x 3 = 12 → total # of stars

stars in each row



1. Number of rows: 3
Number of stars in each row: 4
Multiplication sentence: 3 x 4 = 12 stars

2. Number of rows: 2
Number of stars in each row: 6
Multiplication sentence: 2 x 6 = 12 stars

3. Number of rows: 1
Number of stars in each row: 12
Multiplication sentence: 1 x 12 = 12 stars

4. Number of rows: 6
Number of stars in each row: 2
Multiplication sentence: 6 x 2 = 12 stars

Answer Sheet

Multiplication:

Multiplication Word Problems

Use one of the following strategies when solving the following word problems:

- Draw an array
- Draw equal groups
- Skip count forwards
- Repeated Addition
- Multiplication Sentence

Write the strategy you used on the line provided and show your work.

1. Tiffany wants to bake 6 batches of cookies. She will need 2 cups of sugar for each batch of cookies. How many cups of sugar will Tiffany need?

Strategy: _____ Show work:

Answer: 12 cups of sugar

2. Tommy's mom asked him to help her clean the house. His mom has asked him to sweep his bedroom floor, the laundry room, and the kitchen. He estimates that it is going to take him 10 minutes to sweep out each room. About how many minutes will it take Tommy to help his mom clean the house?

Strategy: _____ Show work:

Answer: 30 minutes

3. Addie visited the elephant exhibit at the zoo. If there were 7 elephants in the exhibit, how many elephant legs did Addie see?

Strategy: _____ Show work:

Answer: 28 elephant legs

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Answer Sheet

Multiplication:

Multiplication Word Problems 2

Use one of the following strategies when solving the following word problems:

- Draw an array
- Draw equal groups
- Skip count forwards
- Repeated Addition
- Multiplication Sentence

Write the strategy you used on the line provided and show your work.

1. Brittany ate 8 oranges in one week. Each orange had 6 slices. How many orange slices did Brittany eat altogether?

Strategy: _____ Show work:

Answer: 48 orange slices

2) Devon collected 5 bags of marbles. Each bag had 12 marbles in it. How many marbles did Devon collect altogether?

Strategy: _____ Show work:

Answer: 60 marbles

3) Hillary read 7 chapters in her book on Tuesday. Each chapter had 6 pages in it. How many pages did Hillary read on Tuesday?

Strategy: _____ Show work:

Answer: 42 pages