

GRADE 3 VOLUME 1



enVision<sup>®</sup> Mathematics

SAVVAS



Hi, we're here to help you.  
Let's have a great year!

I'm Jackson.

I'm Zeke.

I'm Emily.

I'm Alex.

I'm Daniel.

I'm Jada.

I'm Carlos.

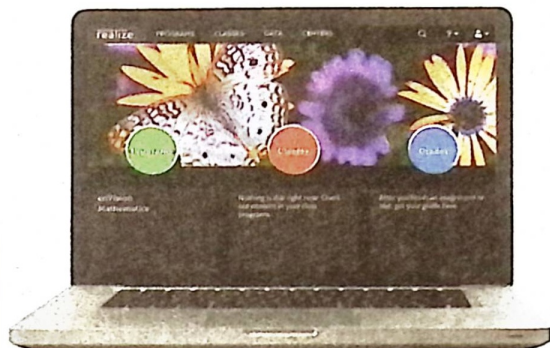
I'm Marta.





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## Digital Resources at SavvasRealize.com



And remember  
your Interactive Student  
Edition is available at  
SavvasRealize.com!



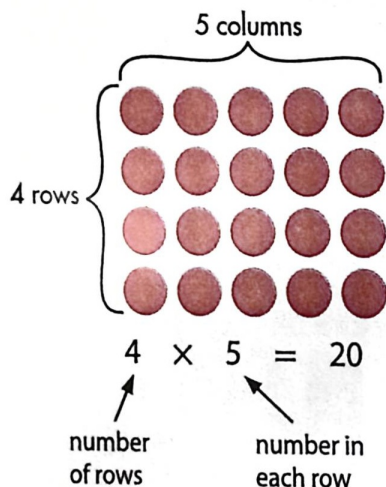
## TOPICS

- 1 Understand Multiplication and Division of Whole Numbers
- 2 Multiplication Facts: Use Patterns
- 3 Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8
- 4 Use Multiplication to Divide: Division Facts
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You can represent multiplication as an array with equal rows and columns.



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You can use  
patterns to help remember  
multiplication facts.



DATA

### 9s Facts

$$0 \times 9 = 0$$

$$1 \times 9 = 9$$

$$2 \times 9 = 18$$

$$3 \times 9 = 27$$

$$4 \times 9 = 36$$

$$5 \times 9 = 45$$

$$6 \times 9 = 54$$

$$7 \times 9 =$$

$$8 \times 9 =$$

$$9 \times 9 =$$

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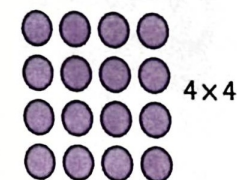
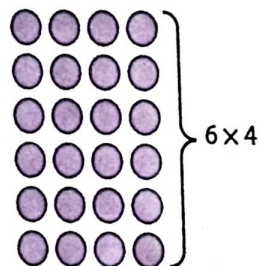
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Properties can help you use known facts to find unknown facts.



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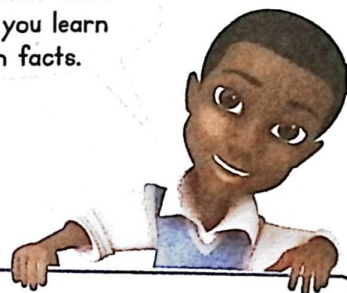
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Multiplication facts  
can help you learn  
division facts.



### Multiplication

3 rows of 10 drums

$$3 \times 10 = 30$$

30 drums

### Division

30 drums in 3 equal rows

$$30 \div 3 = 10$$

10 drums in each row

## TOPIC 4 Use Multiplication to Divide: Division Facts

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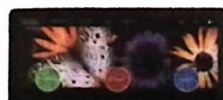
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You can use a multiplication table to find missing factors.

$$3 \times 5 = 15$$

$$15 \div 3 = 5$$

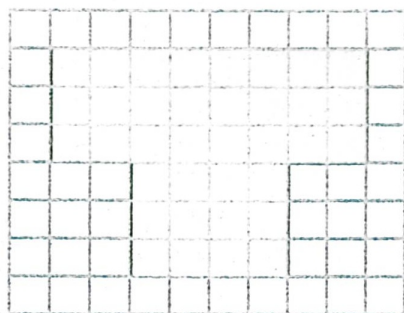
$\times$	0	1	2	3	4	5
0	0	0	0	0	0	0
1	0	1	2	3	4	5
2	0	2	4	6	8	10
3	0	3	6	9	12	15

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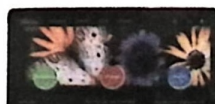


You can find the area of a shape by counting the number of unit squares needed to cover it.

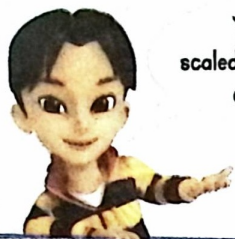


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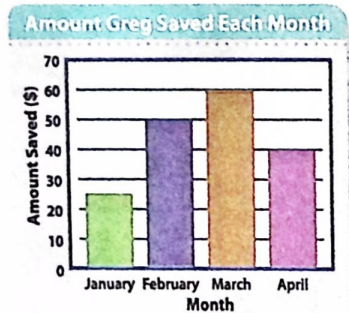
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You can use a  
scaled bar graph to help  
compare data.



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# Math Practices and Problem Solving Handbook



The Math Practices and Problem Solving Handbook is available at [SavvasRealize.com](http://SavvasRealize.com).

1

## Make sense of problems and persevere in solving them.

Good math thinkers make sense of problems and think of ways to solve them.

If they get stuck, they don't give up.



Mia has \$36. Kate has \$17 less than Mia. Do Mia and Kate together have enough money to buy a bike for \$54?

Here I listed what I know and what I am trying to find.



What I know:

- Mia has \$36.
- Kate has \$17 less than Mia.
- The bike costs \$54.

What I need to find:

- Whether Mia and Kate have at least \$54 in all.

### Thinking Habits

Be a good thinker! These questions can help you.

- What do I need to find?
- What do I know?
- What's my plan for solving the problem?
- What else can I try if I get stuck?
- How can I check that my solution makes sense?



## Math Practices and Problem Solving Handbook

### Problem Solving Guide

Math practices can help you solve problems.



#### Make Sense of the Problem

##### Reason Abstractly and Quantitatively

- What do I need to find?
- What given information can I use?
- How are the quantities related?

##### Think About Similar Problems

- Have I solved problems like this before?

#### Persevere in Solving the Problem

##### Model with Math

- How can I use the math I know?
- How can I represent the problem?
- Is there a pattern or structure I can use?

##### Use Appropriate Tools Strategically

- What math tools could I use?
- How can I use those tools strategically?

#### Check the Answer

##### Make Sense of the Answer

- Is my answer reasonable?

##### Check for Precision

- Did I check my work?
- Is my answer clear?
- Did I construct a viable argument?
- Did I generalize correctly?

#### Some Ways to Represent Problems

- Draw a Picture
- Make a Bar Diagram
- Make a Table or Graph
- Write an Equation

#### Some Math Tools

- Objects
- Grid Paper
- Rulers
- Technology
- Paper and Pencil

Math Practices

Problem Solving Guide

Problem Solving Recording Sheet  
Bar Diagrams



# Understand Multiplication and Division of Whole Numbers

**Essential Question:** How can thinking about equal groups help you understand the connection between multiplication and division?

## Digital Resources



Some animals form groups.

Being in a group can help birds survive.

That's teamwork! Here's a project on animals using multiplication and division.

## enVision STEM Project: Forming Groups

**Do Research** Many types of animals form groups. Use the Internet or other sources to discover which animals form groups. Why do they do this? What are the benefits for these animals of being in a group?

**Journal: Write a Report** Include what you found. Also in your report:

- Draw representations of animals in equal groups. Give a reason why those animals formed groups.
- Use a multiplication equation to show the total number of animals. Use a division equation to show the number of animals in each group.



Name \_\_\_\_\_

## Review What You Know

### **Vocabulary**

Choose the best term from the box.  
Write it on the blank.

- |              |            |
|--------------|------------|
| • add        | • subtract |
| • skip count | • ones     |

1. If you combine different sized groups to find how many in all, you \_\_\_\_\_.
2. \_\_\_\_\_ are groups of single objects.
3. When you say the numbers 5, 10, 15, 20, you \_\_\_\_\_.

### **Adding**

Find each sum.

- |                        |                    |                    |
|------------------------|--------------------|--------------------|
| 4. $5 + 5 + 5 = ?$     | 5. $7 + 7 = ?$     | 6. $3 + 3 + 3 = ?$ |
| 7. $2 + 2 + 2 + 2 = ?$ | 8. $6 + 6 + 6 = ?$ | 9. $9 + 9 + 9 = ?$ |

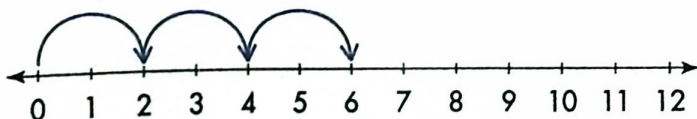
### **Subtracting**

Find each difference.

- |                  |                  |                  |
|------------------|------------------|------------------|
| 10. $21 - 7 = ?$ | 11. $15 - 5 = ?$ | 12. $27 - 9 = ?$ |
| $14 - 7 = ?$     | $10 - 5 = ?$     | $18 - 9 = ?$     |
| $7 - 7 = ?$      | $5 - 5 = ?$      | $9 - 9 = ?$      |

### **Skip Counting on the Number Line**

13. If you continue skip counting using the same pattern, what will be the next number?



- (A) 8  
(B) 10  
(C) 12  
(D) 14



**PROJECT  
1A**

**What is the tallest building in Florida?**

**Project:** Construct a Tall Building



**PROJECT  
1B**

**Would you like to travel to another planet?**

**Project:** Build a Space Probe



**PROJECT  
1C**

**What are some places where you would like to live?**

**Project:** Draw a Neighborhood







# 3-ACT MATH PREVIEW

## Math Modeling



### What's the Point?

Before watching the video, think:

I do a lot of my writing on a laptop or a tablet. When do you prefer to use a pencil? How about crayons, pens, and colored pencils? You probably own plenty of different writing tools. You can even find some interesting ways to use them.

#### I can ...

model with math to solve a problem that involves computing with whole numbers.





Name \_\_\_\_\_



Activity

## Solve & Share

Ms. Witt bought 4 boxes of paint with 5 jars of paint in each box. Ms. Karp bought 3 boxes of paint with 6 jars in each box. Who bought more jars of paint? How many more?

## Lesson 1-1

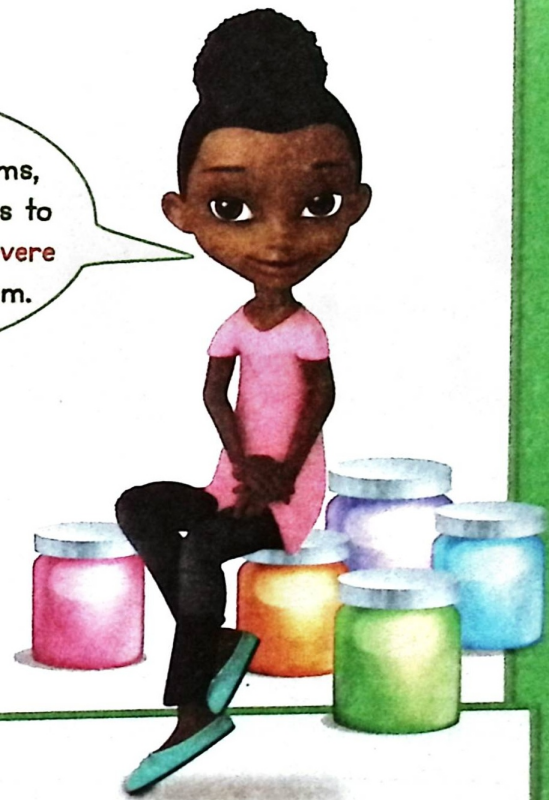
### Relate Multiplication and Addition

#### I can ...

use addition or multiplication to join equal groups.

I can also make sense of problems.

You can use counters, bar diagrams, drawings, or equations to make sense and persevere in solving the problem.



**Look Back!** How can you use counters and addition equations to help solve the problems?





A



Jessie used 3 bags to bring home the goldfish she won at the Fun Fair. She put the same number of goldfish in each bag. How many goldfish did she win?

I can use counters to show the groups.

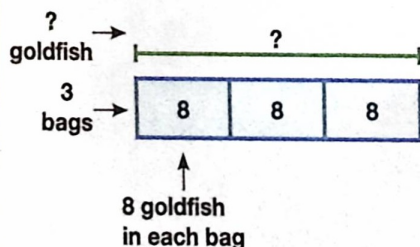
8 goldfish in each bag



B The counters show 3 groups of 8 goldfish.

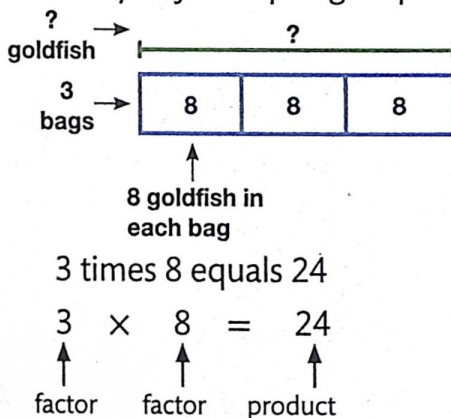


You can use addition to join equal groups.



$$8 + 8 + 8 = 24$$

C Multiplication is an operation that gives the total number when you join equal groups.



Factors are the numbers that are being multiplied. The product is the answer to a multiplication problem.

D You can write equations.

An unknown is a symbol that stands for a number in an equation.

Addition equation:

$$8 + 8 + 8 = ?$$

$$8 + 8 + 8 = 24$$

Multiplication equation:

$$3 \times 8 = ?$$

$$3 \times 8 = 24$$

Jessie won 24 goldfish.



**Convince Me!** **Model with Math** Suppose Jessie won 5 bags of 8 goldfish. Use math you know to represent the problem and find the number of goldfish Jessie won.



# ★ Guided Practice

## Do You Understand?

1. Can you write  $5 + 5 + 5 + 5 = 20$  as a multiplication equation? Explain.

2. Can you write  $3 + 4 + 7 = 14$  as a multiplication equation? Explain.

3. Jessie buys 4 packages of stones. There are 6 stones in each package. How many stones does Jessie buy?

Use counters to represent the problem. Then write an addition equation and a multiplication equation to solve.

## Do You Know How?

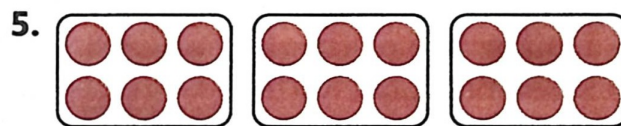
Complete 4 and 5. Use the pictures to help.



2 groups of \_\_\_\_

$$4 + 4 = \underline{\quad}$$

$$2 \times \underline{\quad} = \underline{\quad}$$



\_\_\_\_ groups of 6

$$6 + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$3 \times \underline{\quad} = \underline{\quad}$$

# ★ Independent Practice ★

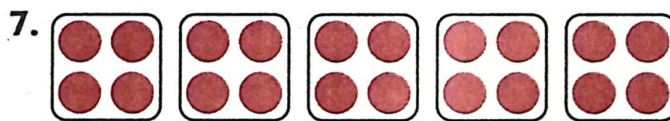
**Levelled Practice** Complete 6 and 7. Use the pictures to help.



2 groups of \_\_\_\_

$$5 + \underline{\quad} = \underline{\quad}$$

$$2 \times \underline{\quad} = \underline{\quad}$$



5 groups of \_\_\_\_

$$4 + 4 + 4 + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$5 \times \underline{\quad} = \underline{\quad}$$

In 8–11, complete each equation. Use counters or draw a picture to help.

8.  $8 + 8 + 8 + 8 = 4 \times \underline{\quad}$

9.  $\underline{\quad} + \underline{\quad} + \underline{\quad} = 3 \times 7$

10.  $9 + \underline{\quad} + \underline{\quad} = 3 \times \underline{\quad}$

11.  $6 + 6 + 6 + 6 + 6 = \underline{\quad} \times \underline{\quad}$



## Problem Solving

12. Debra draws this shape on the back of her notebook.



What is the name of the shape Debra draws? How do you know?

13. **Model with Math** Salvatore gets 50 trading cards for his birthday. He gives 22 cards to Madison, and Madison gives 18 cards to Salvatore. Then Salvatore's sister gives him 14 cards. How many trading cards does Salvatore have now? Use math to represent the problem.

14. **Higher Order Thinking** Luke says you can always add and you can always multiply to join groups. Is he correct? Explain why or why not.

15. Lois says any addition equation where the addends are all the same can be written as a multiplication equation. Is Lois correct? Explain why or why not.

### Assessment Practice

16. Tom has 12 ears of field corn to make table decorations. He arranges them in equal groups. Which sentences could Tom use to describe his groups? Select all that are correct.
- ☐ Tom arranged 2 groups of 4 ears.
  - ☐ Tom arranged 4 groups of 2 ears.
  - ☐ Tom arranged 6 groups of 2 ears.
  - ☐ Tom arranged 3 groups of 4 ears.
  - ☐ Tom arranged 1 group of 10 ears.

17. Jenna has 24 flowers. She arranges them in vases with an equal number of flowers in each vase. Which sentences could Jenna use to describe her flowers? Select all that are correct.
- ☐ Jenna arranged 4 flowers in each of 6 vases.
  - ☐ Jenna arranged 3 flowers in each of 9 vases.
  - ☐ Jenna arranged 5 flowers in each of 5 vases.
  - ☐ Jenna arranged 6 flowers in each of 3 vases.
  - ☐ Jenna arranged 8 flowers in each of 3 vases.



Name \_\_\_\_\_



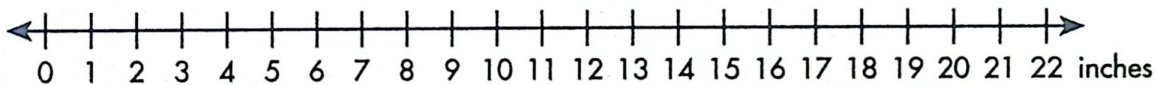
Activity

## Solve & Share

Harvey the Hop Toad starts at 0 and jumps 7 times in the same direction. Each time he jumps 3 inches farther. How can you show how far Harvey goes on a number line?

Model with math.

A number line can be used to record and count equal groups.



## Lesson 1-2

### Multiplication on the Number Line

**I can ...**

use a number line to represent and solve multiplication facts.

**I can also** model with math.

**Look Back!** How are Harvey's jumps on the number line like repeated addition? How are they like skip counting?





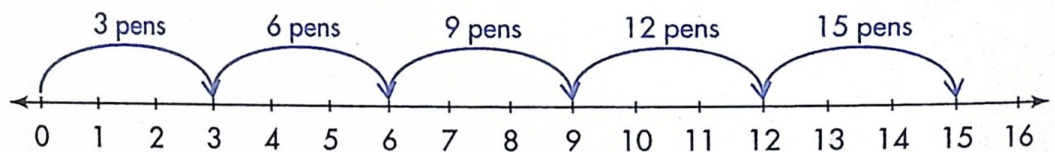
Clara is making gift bags for her 5 friends. She wants to put 3 glitter pens in each gift bag. How many glitter pens does Clara need?

You can use a number line and skip counting to show multiplication.



B

Draw arrows on the number line to show the number of glitter pens for each gift bag.



Skip counting: 3, 6, 9, 12, 15

Multiplication:  $5 \times 3 = 15$

Clara needs 15 glitter pens.

**Convince Me! Reasoning** What would skip counting by 6 look like on the number line?



# ☆ Guided Practice

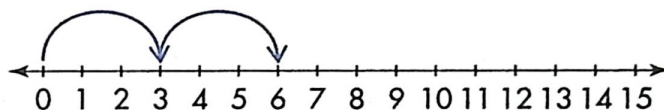
## Do You Understand?

1. On the previous page, why do you skip count by 3s on the number line?
2. On the previous page, why do you make five jumps on the number line?
3. How would the jumps on the number line look different if there were 4 pens in each gift bag?

## Do You Know How?

In 4, complete the arrows on the number line to show the jumps and fill in the blanks.

4. Jim ran 3 miles a day for 4 days in a row. How many miles did he run?



Number of jumps: \_\_\_\_\_

I skip counted by \_\_\_\_\_.

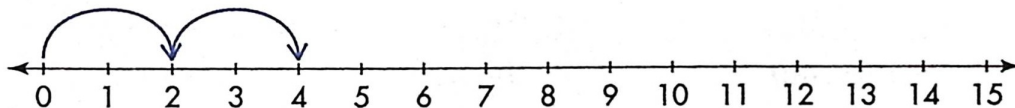
Jim ran \_\_\_\_\_ miles.

\_\_\_\_\_  $\times$  \_\_\_\_\_ = \_\_\_\_\_

# ☆ Independent Practice ☆

In 5, show how you found the solution using the number line.

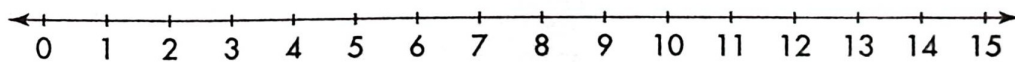
5. Judy has 6 fruit baskets. She wants to put 2 apples into each basket. How many apples will she need? Draw the remaining jumps on the number line with arrows to show how many apples Judy will need.



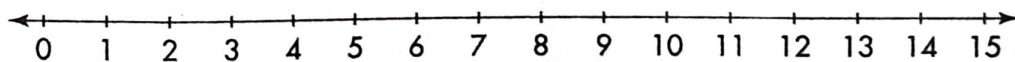
Judy will need \_\_\_\_\_ apples.

In 6 and 7, show the multiplication fact with arrows on the number line. Write the product.

6.  $7 \times 2 =$  \_\_\_\_\_



7.  $3 \times 3 =$  \_\_\_\_\_





Name \_\_\_\_\_



Activity

## Solve & Share

Mark has 12 sports cards. He arranges the cards with an equal number in each row. Find ways Mark can arrange his cards.

## Lesson 1-3

### Arrays and Properties

#### I can ...

use arrays and multiply factors in any order to solve multiplication problems.

**I can also** choose and use a math tool to help solve problems.

You can use **appropriate tools**. Sometimes using counters or objects can help you solve a problem.



Number of Rows of Cards	Number of Cards in Each Row	Total Number of Cards

**Look Back!** What do you notice about the number of rows of cards, the number of cards in each row, and the total number of cards? Explain.

