

# Math Is...

## Focus Question

What does it mean to do math?

**Hi, I'm Dakota.**

This is going to be a great year! We will learn a lot of math and see how math helps us understand our world. Look out the window. Where do you see math?

Copyright © McGraw-Hill Education



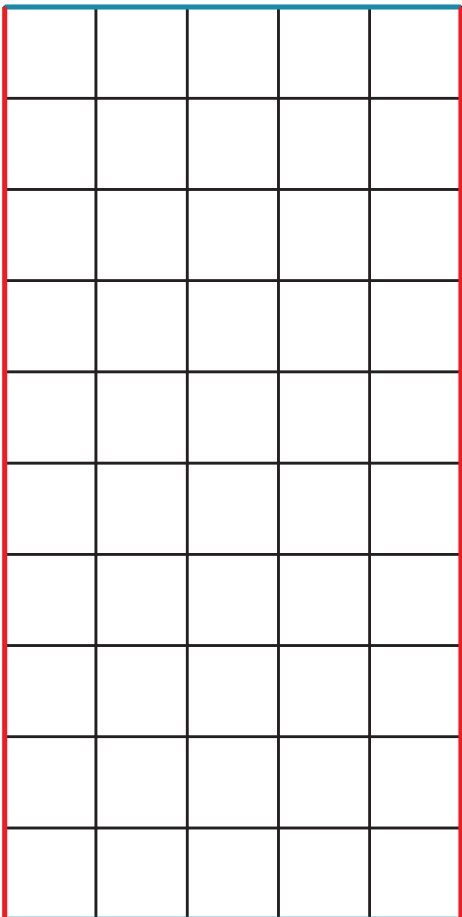
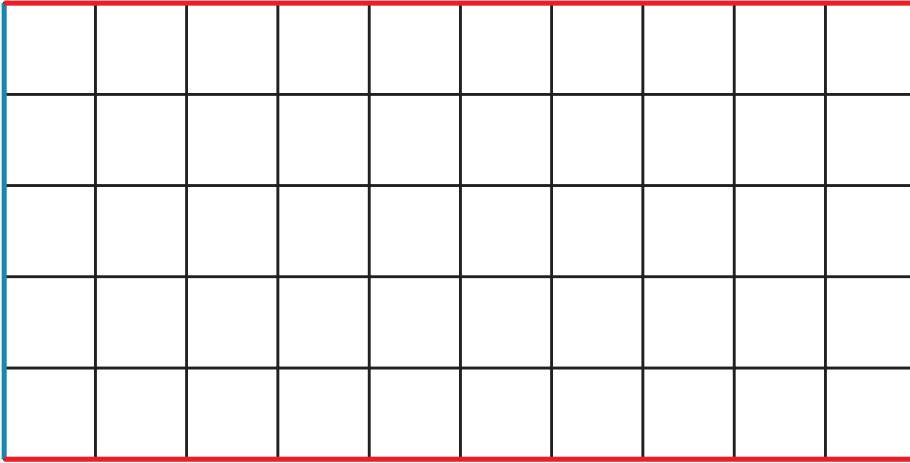
STEM  
video

GO  
ONLINE

Name \_\_\_\_\_

## The Longest Path

What is the longest path across the grid from blue line to blue line? Your path cannot touch the red edges of the grid. Look for two different paths.





## Be Curious

**What do you notice?  
What do you wonder?**



Copyright © McGraw-Hill Education (l. b)Ariel Skelley/DigitalVision/Getty Images, (r)monkeybusinessimages/Stock/Getty Images, (b)glaxia/E+/Getty Images

## Learn

Math is all around us. We see it in our homes. We see it on the playground. We see it when we go shopping.

We all have a math story.

**Let's learn about our teacher's math story.**

What did you like about math when you were in school?

**Math is... Mindset**

What do I like about math?

What didn't you like?

**Math is... Mindset**

What can I do to understand my feelings?

What do you think about math now?

**Math is... Mindset**

What can I do to make sure I'm ready to learn?

Copyright © McGraw-Hill Education



What do you see as your strengths in math?

**Math is...** **Mindset**

What are my strengths in math?

What's your favorite thing about math?

**Math is...** **Mindset**

What did I like about math today?

## **Work Together**

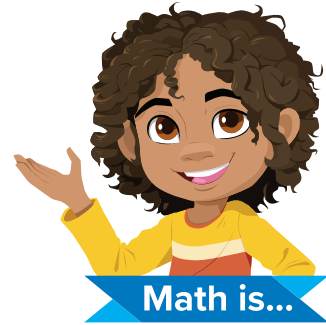
What are some other questions you can ask your teacher about their math story?

Copyright © McGraw-Hill Education

# On My Own

Name \_\_\_\_\_

What is my math story?



## Reflect

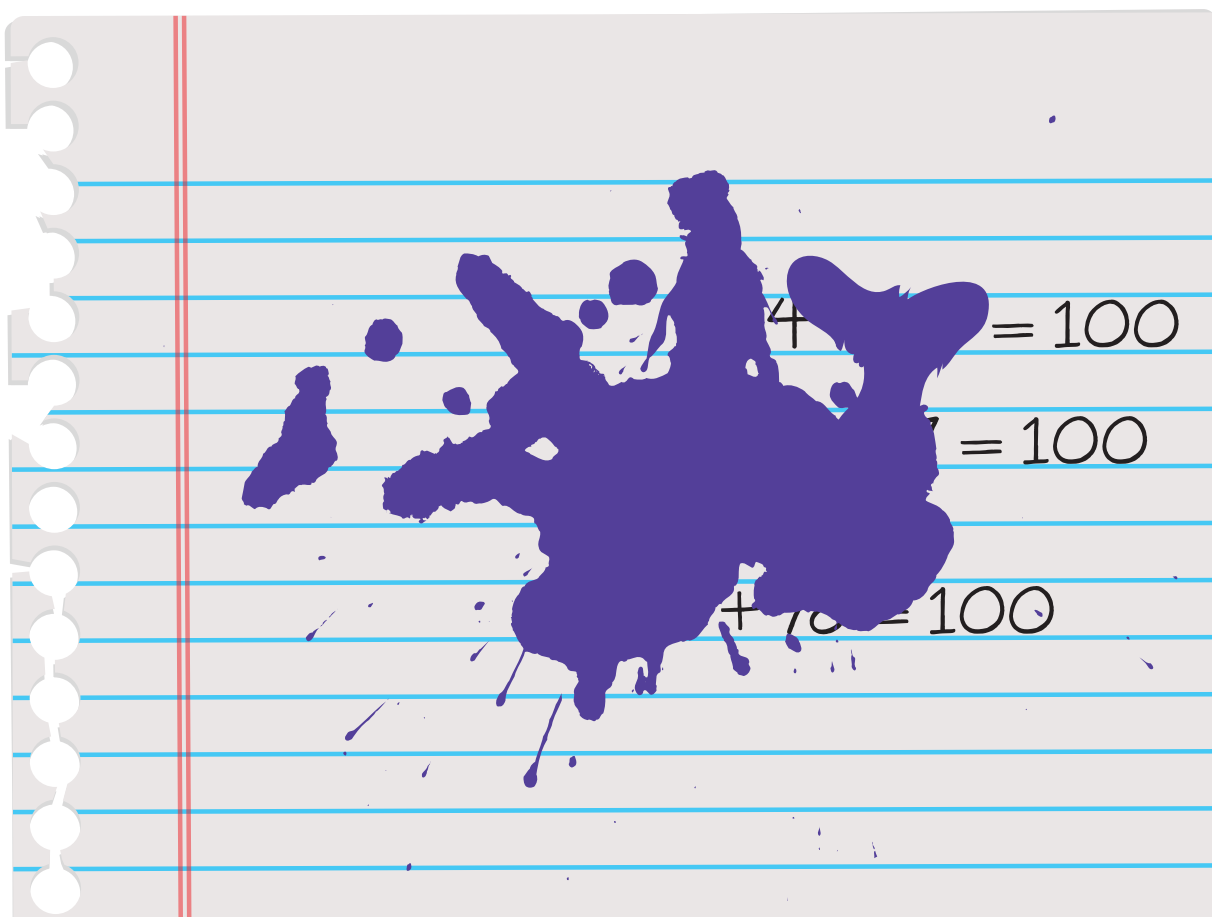
What about my “Math Me” do I want someone else know?

# Math Is Exploring and Thinking



## Be Curious

**What do you notice?**  
**What do you wonder?**



Copyright © McGraw-Hill Education

## Learn

Heather added two 2-digit numbers.  
There wasn't a zero in either number.

$$\square + \square = 100$$

**What could be the numbers Heather added?**

When we do math, we use many strategies to make sense of problems.

I know:

- The two numbers have a sum of 100.
- The numbers do not have zeros.
- I can write an equation.

$$\square + \square = 100$$

**Math is... Exploring**

What do I know about the problem?

I can ask:

- What two addends sum to 100?
- Can the two numbers be 50 and 50?  
Or 60 and 40?

$$60 + 40 = 100$$

No, because those numbers have zeros.

**Math is... Planning**

What questions can I ask myself about the numbers?

When we do math, we work to solve problems but sometimes the first try doesn't work. We keep trying and don't give up.

I can think about different numbers to try.

$$\square + \square = 100$$

**Math is... Perseverance**

What is another way to think about the problem?

When we do math, we think about numbers in all sorts of ways.

The digits in the ones place and the tens place must add to 10. I can think about numbers that add to 10.

$$3 + 7 = 10$$

### Math is... Thinking

How can I think about the numbers?

What other numbers do I know that sum to 10?

- $5 + 5$ ,  $4 + 6$ ,  $2 + 8$  all sum to 10

When we do math, we think about how numbers and quantities relate.

Will I need to regroup ones to a ten or tens to a hundred?

- If the numbers in the ones place add up to 10, I will need to regroup.

What does that mean for the numbers in the tens place?

- The numbers in the tens place must add up to 9.

### Math is... Connections

What questions can I ask myself about the numbers?

## Work Together

Juno added two different 2-digit numbers. Neither number had a zero in it. The sum of the new numbers is 50. What could the two numbers be?



## On My Own

Name \_\_\_\_\_

On another problem, Heather added three different 2-digit numbers.

None of the 2-digit numbers had a zero in it.

The sum of Heather's new numbers is 75.

What might be Heather's three numbers?

## Reflect

Tell about a time when you had a problem and you didn't give up. It might be a math problem, but it might be a problem you had at home, playing a game, playing a sport, playing an instrument, drawing a picture, or doing a puzzle.

# Math Is In My World



## Be Curious

**What do you notice?**  
**What do you wonder?**



Copyright © McGraw-Hill Education photo credit to come

## Learn

Jackson has 7 base-ten blocks.

### What numbers might Jackson make with all seven of his blocks?

When we do math, we make models of problems to help us think about the math.

I can make a drawing to visualize the base-ten blocks.

- There are three different kinds of base-ten blocks. I'll draw each kind.

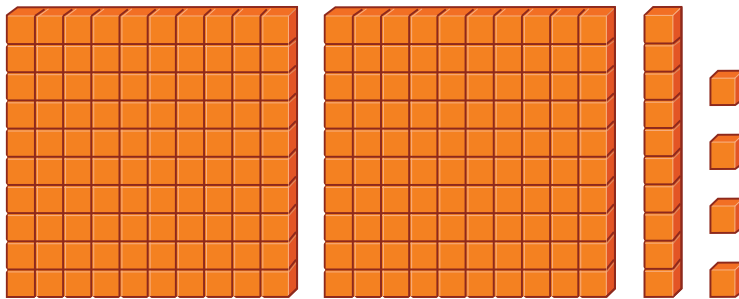


#### Math is... In My World

How can I visualize the problem?

I can use drawings or manipulatives to represent the problem.

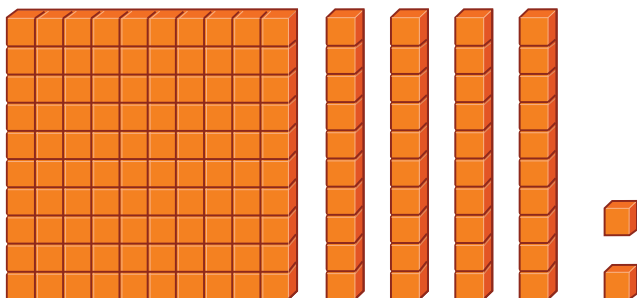
- I need to have 7 blocks in all.



#### Math is... In My World

How can I represent the problem?

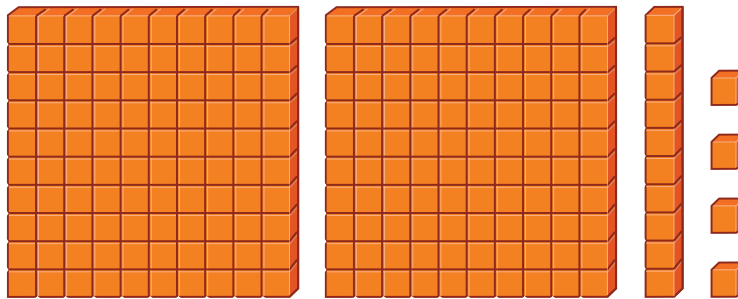
I can think about other solutions.



When we do math, we use different tools. Sometimes any tool can work and other times, one tool is the best choice.

I can use base-ten blocks to represent and solve the problem.

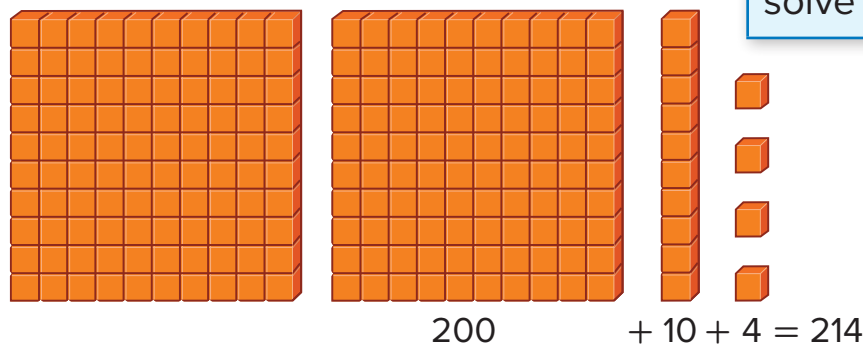
- Jackson might have flats, rods, or units. He could have 2 flats, 1 rod, and 4 units.



**Math is... Choosing Tools**

What tool can I use to represent the problem?

Base-ten blocks can help me show the blocks and numbers that Jackson made.



**Math is... Choosing Tools**

What tools can I use to solve the problem?

Copyright © McGraw-Hill Education

**Work Together**

Jackson grabbed 5 base-ten blocks from the bin.  
What numbers might Jackson make with all five of his blocks?

## On My Own

Name \_\_\_\_\_

Jamil grabbed six blocks and three of the blocks were the same.

What are some of the numbers might Jamil make with all 6 of his blocks?

## Reflect

What are some ways I can show a problem in math?

What tools have I used in math before?



# Math Is Explaining and Sharing



## Be Curious

**What do you notice?  
What do you wonder?**



Copyright © McGraw-Hill Education - McGraw-Hill Education

## Learn

Eva has 9 coins in her pocket.  
She has more than \$1.00 but less than \$2.00.

### How much money might Eva have in her pocket?

When we do math, we explain and defend our thinking. Sometimes we use words to create an argument. Sometimes we use numbers and pictures.

I can use words, equations, or drawings to explain my thinking.

Eva might have:

$$\begin{array}{c} \text{25¢} \quad \text{25¢} \\ \text{= 50¢} \end{array}$$

$$\begin{array}{c} \text{10¢} \quad \text{10¢} \quad \text{10¢} \quad \text{10¢} \\ \text{= 40¢} \end{array}$$

$$\begin{array}{c} \text{5¢} \quad \text{5¢} \\ \text{= 10¢} \end{array}$$

$$\begin{array}{c} \text{1¢} \\ \text{= 1¢} \end{array}$$

Her total, \$1.01 is between \$1 and \$2.

#### Math is... Explaining

How can I explain my thinking?

When we do math, we listen to the arguments of others and think about what makes sense and what doesn't.

Someone else might have another idea.  
They might think that Eva has:

$$3 \text{ quarters} = 75¢$$

$$2 \text{ dimes} = 20¢$$

$$4 \text{ nickels} = 20¢$$

$$0 \text{ pennies} = 0¢$$

Her total, \$1.15 is between \$1 and \$2.

#### Math is... Critiquing

Do others' ideas make sense to me?

When we do math, we think about whether an estimate or an exact answer is appropriate.

I need an exact answer that is between \$1 and \$2.

**Math is... Precision**

Do I need an exact answer or an estimate?

When we make arguments, we try to be precise. We use correct vocabulary and make sure our calculations are accurate. We label our drawings and include units of measurement.

I labeled each drawing with the value of the coin. Quarters are 25¢. Dimes are 10¢. Nickels are 5¢ and pennies are 1¢.

**Math is... Precision**

What units did I use to label my drawings?



## Work Together

Oscar has two bills and five coins. He has between \$5.00 and \$10.00.

What bills and coins might Oscar have? How do you know?

## On My Own

Name \_\_\_\_\_

Deryn has 10 coins in her pocket.

She has more than \$2 but less than \$3.

How much money might Deryn have in her pocket?

How do you know?

## Reflect

How did you create an argument and justify your thinking with the money problem?

Why do you think it is important to be precise in math?

# Math Is Finding Patterns



## Be Curious

**How are they the same?**

**How are they different?**

$$1 + 9 =$$

$$2 + 8 =$$

$$3 + 7 =$$

$$4 + 6 =$$

$$5 + 5 =$$

$$21 + 9 =$$

$$22 + 8 =$$

$$23 + 7 =$$

$$24 + 6 =$$

$$25 + 5 =$$



## Learn

### How are the equations in the Be Curious related?

When we do math, we look for patterns and relationships.

I know that I see a pattern when I see something over and over again.

- There is a pattern in these equations.
- The digits in the ones place always add to 10.

$$1 + 9 = 10 \quad 21 + 9 = 30$$

$$2 + 8 = 10 \quad 22 + 8 = 30$$

$$3 + 7 = 10 \quad 23 + 7 = 30$$

**Math is... Patterns**

How do I know that I see a pattern?

Patterns can help me solve a problem.

- Using the pattern above, I can solve these equations.

$$41 + 9 = ?$$

$$42 + 8 = ?$$

$$43 + 7 = ?$$

$$44 + 6 = ?$$

**Math is... Patterns**

How can the pattern help me solve the problem?

Patterns can help you solve problems efficiently. Patterns can also help you solve problems that are similar.

I can see a rule in the equations.

$$1 + 9 = 10 \quad 21 + 9 = 30$$

$$2 + 8 = 10 \quad 22 + 8 = 30$$

- Combinations of ten are like combinations of 30.
- 21 is 20 more than 1 and 30 is 20 more than 10.

### Math is... Generalizations

What is the rule for this pattern?

I can use this pattern to find other sums.

- If I know that  $4 + 6 = 10$ ,
- then I can know  $24 + 6 = 30$   
and  $84 + 6 = 90$ .

### Math is... Generalizations

How does this pattern help me work more efficiently?

## Work Together

How are these equations related?

$$8 + 9 = ? \quad 8 + 19 = ? \quad 8 + 29 = ? \quad 8 + 59 = ?$$

$$4 + 9 = ? \quad 4 + 39 = ? \quad 4 + 69 = ? \quad 4 + 99 = ?$$

What other equations can you write that follow the same pattern?

## On My Own

Name \_\_\_\_\_

How are these equations related?

$$70 + 90 = ? \quad 70 + 190 = ? \quad 70 + 290 = ? \quad 70 + 590 = ?$$

$$50 + 90 = ? \quad 50 + 290 = ? \quad 50 + 490 = ? \quad 50 + 690 = ?$$

What other equations can you write that follow the same pattern?

## Reflect

What other patterns and relationships do you know in math?  
Tell how those patterns can help you.



## Be Curious

**What do you notice?  
What do you wonder?**



Copyright © McGraw-Hill Education lisegagne/E+/Getty Images

# Learn

## How do we do math?

When we do math, we solve problems.

- We make sense of problems.
- We understand relationships among quantities.
- We look for patterns and use patterns to help us solve problems.
- We use tools. We select the tool that works best for us.
- We don't quit. If we get stuck, we look for different ways.

**Math is...** **Mindset**

What can I do when I feel stuck?

When we do math, we often work together.

- We listen carefully.
- We share our thinking.
- We are respectful of others' ideas.
- We critique the ideas of others. We don't criticize others.
- We share tools and take turns.

**Math is...** **Mindset**

What can I do to be an active listener?

When we do math, sometimes we work on our own.

- We stay focused.
- We look for help when we are stuck.

**Math is...** **Mindset**

What can I do to stay focused on my work?



## Work Together

How do we work together well?

What does a good listener do?

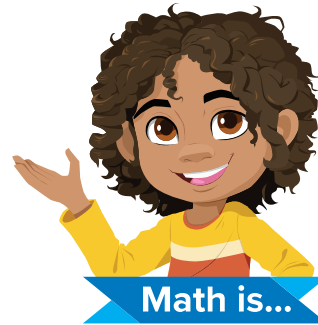
How do we use tools responsibly?

What do I do when I'm stuck?

## On My Own

Name \_\_\_\_\_

What are two promises our class can make so that we work together well?



## Reflect

What are my responsibilities to make sure we can all learn math well?

# Unit Review

Name \_\_\_\_\_

## Review

1. What are some ways we can make sense of a problem?
2. Why is asking questions important when doing math?
3. What does it mean to be precise when doing mathematics?
4. How can patterns help us solve problems?  
Think of an example.

## Review

What should be our classroom norms for doing math? Write up to 5 norms.

1.

2.

3.

4.

5.

## Reflect

Choose one norm you wrote and tell why it is important.