# **Nathematics**, Volume II: Grade 5

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# Engaging Mathematics, Volume II: Grade 5

# **Teacher Edition**

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Region 4 Education Service Center supports student achievement by providing educational products and services that focus on excellence in service for children.

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#### What is Engaging Mathematics, Volume II: Grade 5?

1

An instructional resource featuring over 90 Texas Essential Knowledge and Skills (TEKS)based, classroom-ready mathematics activities that each take approximately 10 to 15 minutes to complete.

A TEKS-based resource that addresses all Grade 5 mathematics TEKS and provides—

- Rigorous problem-solving tasks
- Manipulative-based tasks
- Vocabulary development tasks
- Sorting and classifying tasks



A resource that supports high-quality, research-based instruction by providing activities that can be used for various purposes, including—

- Engaging warm-ups and opening tasks that draw students into relevant and challenging mathematics
- Instructional support for all students, from at-risk to gifted and talented, to help learners articulate, refine, and retain important mathematical concepts, processes, and skills
- Short-cycle, formative assessments that provide immediate and ongoing feedback to guide instruction for the teacher and learning for the student
- Supplemental tasks to support intervention strategies

A resource that incorporates the mathematics process standards by promoting—

- Reasoning, generalizing, and problem-solving in mathematical and real-world contexts
- Modeling, using tools, and connecting representations
- Analysis
- Communication



#### What is found in an Engaging Mathematics TEKS-based activity?



## Texas Essential Knowledge and Skills (TEKS) Alignment Chart

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5(2)(B)



#### **Activity Objective**

**Answer Key** 

I can use place value and the > and < symbols to compare two decimals.

I can explain why my model represents the mathematical statement.

#### Materials

• Comparing Decimals: True and False Examples

Possible answers.		
When comparing two decimals	True	False
the number with more digits is greater.	0.236 > 0.03	0.023 < 0.2
a number with 0 in the tenths place is less than a number with 2 in the tenths place.	0.01 < 0.2	1.012 > 0.2
a number with 1 in the tenths place is greater than a number with 1 in the hundredths place.	0.12 > 0.01	1.1 < 2.01
a three-digit number with 5 in the ones place and 2 in the tenths place is greater than a three-digit number with 5 in the ones place and 1 in the hundredths place.	5.2 <b>5</b> > 5.01	5.25 < 15.01

#### **Debriefing Questions**

- Which statement was the easiest to create a true and false example?
- Which statement was the most difficult to create a true and false example?
- What strategies did you use to create a true and false example?
- Which model did you use to prove one of your statements true?

#### Listen For . . .

- Understanding of place value when comparing decimals.
- Understanding of the decimal in relationship to place value.

#### Communicating about Mathematics

Students may respond by talking to a partner and recording a written response in the space provided.

Possible sentence frame: My model proves that \_\_\_\_\_ is true/false because \_\_\_\_.

#### Listen/Look For . . .

Use of hundreds grids, number lines, or other models.

### **Comparing Decimals: True and False Examples**

Ms. Kay wrote the following statements on the board and told her students that all four of them are only SOMETIMES true. Create an example using the > or < symbols that would make each statement true, and an example using the > or < symbols that would make each statement false.

When comparing two decimals	True	False
the number with more digits is greater.		
a number with 0 in the tenths place is smaller than a number with 2 in the tenths place.		
a number with 1 in the tenths place is greater than a number with 1 in the hundredths place.		
a three-digit number with 5 in the ones place and 2 in the tenths place is greater than a three-digit number with 5 in the ones place and 1 in the hundredths place.		

#### **Communicating about Mathematics**

Draw a model of each decimal to prove **one** of your examples above is true.

\_\_\_\_\_

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#### **Activity Objective**

I can represent quotients of decimals using models.

I can explain the connection among an expression, its model, and its quotient for a problem involving decimals.

#### Materials

• Modeling Division of Decimals



#### **Debriefing Questions**

- What strategy did you use to sketch the models?
- How is the quotient represented in your model?
- How were the models for each expression similar? How were they different?
- How would the model change if the divisor is more than the dividend?

#### Listen For . . .

- Connections between the size of the parts of the model and the dividend.
- Connections between the number of groups and the divisor.
- Connections between the model of each group and its quotient.

#### **Communicating about Mathematics**

Students may respond by talking to a partner and recording a written response in the space provided.

Possible sentence frame: The model of a division problem involving decimals connects to the expression/quotient because \_\_\_\_\_.

#### Listen/Look For . . .

Connections among an expression involving division of decimals, its model, and its quotient.

## **Modeling Division of Decimals**

Complete the missing parts of the graphic organizer below.

Expression	Model	Quotient		
4.8 ÷ 4		1.2		
6.3 ÷ 3		2.1		
3.3 ÷ 3				
11.2 ÷ 8				
Communicating about Mathematics Describe how the model of a division problem involving decimals connects to its expression and its quotient.				

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\_\_\_\_\_