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Engaging Mathematics, Volume II: Grade 6

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.

Published by Region 4 Education Service Center 7145 West Tidwell Road Houston, Texas 77092-2096 www.esc4.net

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ISBN-13: 978-1-937403-70-6

Printed in the United States of America

Acknowledgments

Region 4 Education Service Center would like to acknowledge the talent and expertise of those who contributed to the development of this book. Their dedication to our core values of excellence in service for children made possible the creation of this resource to assist educators in providing quality, effective instruction for all students.

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What is Engaging Mathematics, Volume II: Grade 6?

An instructional resource featuring over 100 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 6 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



- 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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Number and operations

Proportionality

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Proportionality

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Expressions, equations, and relationships

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Expressions, equations, and relationships

Expressions, equations, and relationships

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Personal financial literacy

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Activity Objective

I can generate equivalent fractions, decimals, and percents to solve problems.

Materials

• Numbers in Stories

I can explain the equivalent forms of rational numbers used in solving a problem.

Answer Key	y		
	I used to solve this problem.	Solution	
1.	Possible answer. Fractions	$\frac{1}{2} + \left(\frac{1}{4} + \frac{3}{4}\right) = 1\frac{1}{2}$ Purrty ate $1\frac{1}{2}$ cans of food yesterday.	
2.	<i>Possible answer. Decimals</i>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
3.	Possible answer. Decimals	2.2 + 2.6 + 1.4 + 3.7 = 9.9 Cassie ran 9.9 miles on these four days.	

Debriefing Questions

• How did you decide if you would use fractions, decimals, or percents to solve each problem?

Listen For . . .

- Understanding that situations involving part-to-whole comparisons might use percent values that may be converted to fraction or decimal representations to solve a problem.
- Understanding that when values may be easily compared or rewritten with common denominators, fractions may be the more efficient option.
- Understanding that when working with non-compatible numbers, decimals may be the more efficient option.

Communicating about Mathematics

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

Possible sentence frame: For problem _____, I chose to use ______ because _____.

Listen/Look For . . .

Understanding of equivalent forms of rational numbers and converting the values in a problem situation to one form to make computation more efficient.

_	
Dato	•
Date	

Numbers in Stories

	Problem	I used to solve this problem.	Solution
1.	Austin wants to know how many cans of cat food Purrty, his kitten, is eating each day. Yesterday, Purrty ate 0.5 of a can in the morning, 25% of a can in the afternoon, and another $\frac{3}{4}$ of a can in the evening. How many cans of food did Purrty eat yesterday?	Fractions Decimals Percents	
2.	Ellie bought two pairs of shoes during a BOGO (Buy One, Get One) sale. She received a 20% discount on the second pair of shoes. The regular price of each pair of shoes was \$49.99. How much did Ellie pay for the two pairs of shoes, excluding tax?	Fractions Decimals Percents	
3.	Cassie ran 2.2 miles on Monday, $2\frac{3}{5}$ miles on Tuesday, 1.4 miles on Wednesday, and $3\frac{7}{10}$ miles on Thursday. How many miles did she run altogether on these four days?	Fractions Decimals Percents	

Communicating about Mathematics

Choose one of the problems. Explain why you chose to use equivalent fractions, decimals, or percents to answer the question.

``	 '



Materials

It All Depends

Activity Objective

I can identify independent and dependent quantities by determining relationships between two quantities.

I can explain what it means for one quantity to depend on another quantity.

Answer Key Number of Amount of \$14.50 \$36.25 \$58.00 \$72.50 2 8 Money Hours 5 10 Worked Earned Number of Amount of \$72.50 2 5 8 10 \$58.00 Hours Money \$14.50 \$36.25 Worked Earned The independent quantity is the *number of hours worked*. • The dependent quantity is the *amount of money earned*. The amount of money earned depends on the number of hours worked. Number of Footballs Total Weight of Footballs (lbs) Number of Footballs The independent quantity is the number of footballs. The dependent quantity is the *total weight of footballs*. The total weight of footballs depends on the number of footballs.

Debriefing Questions

- How did you determine which quantities were dependent on the other quantity?
- Are there situations where the dependence might be reversed? Why?

Listen For . . .

- Understanding that when the independent quantity changes it impacts the dependent quantity.
- Understanding that the dependent quantity depends on the independent quantity for its value.

Communicating about Mathematics

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

Possible sentence frame: If one quantity depends on another quantity it means ______ .

Listen/Look For . . .

Understanding that the dependent quantity will change in response to changes in the independent quantity.

It All Depends

Determine the table and graph that correctly relates the two quantities. Circle your answer choice. Complete the statements below the table and graph.

Amount of Money Earned	\$14.50	\$36.25	\$58.00	\$72.50
Number of Hours Worked	2	5	8	10

Number of Hours Worked	2	5	8	10
Amount of Money Earned	\$14.50	\$36.25	\$58.00	\$72.50

- The independent quantity is the ______.
- The dependent quantity is the ______

