

What is *Engaging Mathematics, Volume I: Grade 4?*

1 An instructional resource featuring 77 Texas Essential Knowledge and Skills (TEKS)-based, classroom-ready mathematics activities that each take approximately 10 to 15 minutes to complete. We took the best activities of the original series, refreshing and revising them, and then added new activities where needed to create a complement for *Engaging Mathematics, Volume II*.

2 A TEKS-based resource that addresses the majority of the grade 4 mathematics TEKS. *Engaging Mathematics, Volume I* complements *Engaging Mathematics, Volume II*. Both volumes provide—

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

3 A resource that supports high-quality, research-based practices 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 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; and
- Supplemental tasks to support intervention strategies.

4 A resource that incorporates the mathematical process standards by promoting—

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



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

Each activity addresses a specific student expectation that is reflected in the content objective.

Comparing Fractions, Activity 1
4(3)(D)

Activity Objective
The student will compare two fractions with different numerators and different denominators using models.

Materials

- Area Model Comparisons
- Fraction circles

Facilitation Questions

- What does the denominator of each fraction tell you?
The denominator of each fraction tells me the number of equal-sized parts into which the whole is partitioned.
- What does the numerator of each fraction tell you?
The numerator of each fraction tells me how many parts of the whole are being counted.
- What do you notice about the size of the pieces of the model partitioned into thirds compared to the size of the pieces of the model partitioned into fourths?
The fractional parts of the model partitioned into thirds are larger than the fractional parts of the model partitioned into fourths.
- How can you compare fractions with different numerators and different denominators using models?
I can compare the size of the shaded portion of each circle model to determine which of the models represents the greater portion.

Answers

Pictorial Representation	Fraction	Symbol	Fraction	Pictorial Representation
	$\frac{1}{4}$	<	$\frac{2}{3}$	
	$\frac{1}{2}$	>	$\frac{3}{8}$	
	$\frac{3}{4}$	>	$\frac{5}{8}$	
	$\frac{1}{3}$	<	$\frac{4}{6}$	

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Common classroom materials are used for ease of preparation. Materials are listed 1-per-student unless otherwise noted. Page titles for student handouts are represented with bold font.

Students should have continuous access to STAAR® Reference Materials that will be made available for the assessment.

Facilitation questions are provided for teacher use when supporting student thinking and discourse.

Date: _____

Area Model Comparisons

circles to model each fraction.
ure of each model in the space provided.
ch comparison statement using <, >, or = symbol.

Pictorial Representation	Fraction	Symbol	Fraction	Pictorial Representation
	$\frac{1}{4}$		$\frac{2}{3}$	
	$\frac{1}{2}$		$\frac{3}{8}$	
	$\frac{3}{4}$		$\frac{5}{8}$	
	$\frac{1}{3}$		$\frac{4}{6}$	

An answer key is included for each activity.

Each activity includes an opportunity for students to articulate and summarize aspects of their learning.

Communicating about Mathematics
How did the models help you compare fractions with different numerators and different denominators?

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