Chagaging Mathematics, Volume II: Grade 2

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Engaging Mathematics, Volume II: Grade 2

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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Writing Team Shannon Alba Sana Brennan Stefani Kulhanek, EdD Crystal Munsinger Sherry Olivares Peggy O'Neal Shelley Bolen-Abbott Sharon Benson, EdD *Design Team* Dave Martinez

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What is Engaging Mathematics, Volume II: Grade 2?

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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 2 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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Activity Objective

I can compare and order whole numbers.

I can use a number line or place value chart to compare and order numbers.

Answer Key

Possible answers.

| | My Three-Digit Number | Greater Than, Less Than, Equal To | My Partner's Three-Digit Number |
|---|--------------------------|---|---------------------------------------|
| 1 | 861 | is <u>greater than</u> | 381 |
| 2 | 192 | is <u>less than</u> | 534 |
| 3 | 735 | is <u>greater than</u> | 402 |
| 4 | 280 | is <u>equal to</u> | 280 |
| 5 | 305 | is <u>less than</u> | 714 |

Debriefing Questions

- How did you use place value to help you compare the two numbers?
- How do you compare two three-digit numbers that have the same digit in the hundreds place?

Listen For . . .

- Appropriate use of place value to compare three-digit numbers.
- Understanding of when to use the phrases greater than, less than, or equal to when comparing numbers.
- Understanding that when comparing the digits of two different numbers based on the same place-value position, the number with the larger digit in the largest place-value position that does not have the same digits is the greater number.

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Materials

- Directions: Comparing Numbers with Words
- Comparing Numbers with Words

| 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 because _____.

Listen/Look For . . .

Appropriate use of a number line or place value chart to compare numbers based on the place value of the digits.

Directions: Comparing Numbers with Words

- Record 5 different three-digit numbers.
- Have a partner record 5 different three-digit numbers.
- Compare the two numbers in each row.
- Use words to show the relationship between the two numbers.
 - o Greater than
 - \circ Less than
 - $_{\odot}$ Equal to

Comparing Numbers with Words

| | My Three-Digit Number | Greater Than Less Than Equal To | My Partner's Three- Digit Number | | |
|----------|---|---------------------------------------|-------------------------------------|--|--|
| 1 | | is | | | |
| | | | | | |
| 2 | | is | | | |
| - | | | | | |
| 3 | | is | | | |
| | | | | | |
| 4 | | is | | | |
| I | | | | | |
| 5 | | is | | | |
| | | | | | |
| Cı e> | Communicating about Mathematics Create a number line or a place-value chart to prove that one of the examples is true. | | | | |





2(10)(A)

Activity Objective

I can represent data points using a bar graph.

I can explain what the length of each bar in a bar graph represents.

Answer Key

- **1** Becca ate 10 cookies.
- 2 Charlie ate 20 cookies.
- **3** Adam and Dot each ate 15 cookies.

Materials

How Many Cookies?

Debriefing Questions

- By what number do the intervals skip count?
- How can you determine the number of cookies that Charlie ate? Will this method work for Dot? Why?
- How did the length of each bar help you answer the questions?

Listen For . . .

- Understanding of the intervals given on the vertical axis.
- Appropriate use of the relative heights of the bars to make comparisons regarding the number of cookies eaten by each friend.
- Understanding that the length of a bar on a bar graph represents the number of data points for a given category.

Communicating about Mathematics

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

Possible sentence frame: The length of each bar represents

Listen/Look For ...

Understanding that the length of each bar represents the number of cookies eaten by the corresponding friend.

Understanding that the labels on the vertical axis identify the length of each bar (number of cookies) and the labels on the horizontal axis identify the friend.





How Many Cookies?

The bar graph shows the number of cookies eaten by four friends.



Cookies Eaten

- 1 How many cookies did Becca eat?
- 2 Who ate 20 cookies?
- 3 Which two friends ate the same number of cookies?

