

TEKS-tivity TE - Teacher Notes

Each lesson is accompanied by teacher notes to help facilitate the implementation of each engaging activity and formative assessment. Teacher notes include global notes that help a teacher determine how the TEKS should be addressed in the lesson and each individual activity.

BI Number Concepts
Numerical Representations and Relationships SE pp. 1 - 10

Texas Essential Knowledge & Skills
Category 1 The student will demonstrate an understanding of how to use algebraic methods to manipulate numbers, expressions, and equations.

Student Expectations
Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms.

TEKS	Student is expected to...
6.2A	classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers. (SS)
6.2B	identify a number, its opposite, and its absolute value. (SS)
6.2C	locate, compare using a number line, and order a set of rational and real-world numbers.
6.2D	order a set of rational and real-world numbers.

Unit TEKS

A Unit 1 - Number Concepts
This unit contains four standards: the readiness standard.

The focus of this unit is for students and the relationship between number systems: Natural Numbers, Integers, and Rational Numbers. Although 6.2A is a support of the relationship between different advanced mathematics.

Not only is it important for students but students need to understand the unit continues to have the students absolute value. TEKS 6.2B is focused on its absolute value. It is important that a number represents the distance

The unit continues by examining the numbers. TEKS 6.2C requires the st

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line. Students are also required to compare and order numbers on a number line.

The readiness standard for this unit requires students to order a set of rational numbers. A variety of numbers should be ordered when working with this standard. Students may find using a number line helpful in ordering the numbers.

Throughout this unit, students need to explain their thinking of how they know the relationship between numbers.

A Activity 1 6.2A - TE p. 8

Materials:

- Scissors
- Glue/tape

Directions:

- Make copies of the activity page for each student.
- Have each student cut out the cards and create a number line on a piece of blank paper to represent.
- As the students are working, ask the following questions:
 - What makes a number a Whole Number?
A Whole Number is a counting number and does not include zero.
 - What makes a number an Integer?
An Integer is a positive or negative whole number.
 - What makes a number a Rational Number?
A rational number is any number that can be written as a fraction, a terminating decimal, or a repeating decimal.
 - How did you arrange your numbers on your number line?
Answers will vary, but should include the numbers placed in the correct order on the number line.
 - Where would you put the number -4.5?
-4.5 would be placed in the Rational Numbers section because the number is a decimal.
- Ask two or three students to place their representations on the class number line.

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and explain their representation to the class. If possible, select a variety of representations for the students to share.

- Ask the students to answer in writing the two questions on the bottom of the sheet.
- If you have the students verbally explain their thinking prior to having them write the answers it helps students to clarify their thinking, so it is important for the student to have the opportunity to explain their thinking.

Extension:

If you want to extend the students learning, the number system of Natural Numbers or Counting Numbers may be introduced. Natural Numbers are often called counting numbers because they are the set of numbers used for counting. Therefore, Natural Numbers start with the number one. The difference between natural numbers and Whole Numbers is the number zero. Zero is not included as a Natural Number because it is not a number used for counting.

Ticket out the Door 1 (TE p. 11)

Use the first ticket out the door to assess the student's understanding of the number line.

A Activity 2 6.2B - TE p. 9

Materials:

- Blue Tape
- Glue/tape

Directions:

- Create a number line on the floor with tape.
- Pre-cut the cards TE p. 8 and room.
- Once all of the students are in the room, have the students find the student who has the number closest to zero.
- Have the students as a pair compare their number lines and the absolute value of the numbers.
- Have the students place their number lines on the floor.
- As the students are working ask the following questions:
 - What does it mean for a number to be an absolute value of a number?
Numbers are opposite if they are the same distance from zero on the number line.

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- What does it mean for a number to be an absolute value of a number?
An absolute value represents the distance a number is from zero, therefore, an absolute value is always a positive number.
- How do you determine where to place a negative number on a number line?
To place a negative number on the number line start at zero and count to that number going to the left of the zero that number of spaces.

7 After the activity, have the students complete the follow-up questions on SE p. 2.

A Activity 3 6.2B - TE p. 10/SE p. 3

Materials:

- Glue/tape

Directions:

- Prior to class cut out the cards and place them in a baggie (TE p. 10).
- Place the students into pairs.
- Have the students match the cards as a number, opposite, and absolute value and tape the card into their student book (SE p. 3).
- As the students are working ask the following questions: *Sample answers are in italics.*
 - How do you match a number to its negative?
A number and its opposite are the same distance from zero on a number line in opposite directions.
 - How do you match a number to its absolute value?
The absolute value of a number is the positive representation of the number. The symbols that represent absolute value are vertical lines, such as, $| -4 |$ is read as the absolute value of -4.
 - Does every number have an opposite and an absolute value?
Every number has an opposite and absolute value except for zero.
- Ask the students to write a summary statement about the relationship between a number, its opposite, and its absolute value.
- After the activity, the student needs to complete the Reflection Page (SE p. 4). The Reflection Page is critical to the students processing their learning.

A Activity 4 6.2B - SE p. 4

Directions:

- Use this activity as an independent practice for understanding numbers,

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Questioning is included as part of the notes for each activity to help make connections between the activity and core concepts. This approach helps students work their way through the process of learning.