Texas Essential Knowledge and Skills for Mathematics
"Rapid" Assessment: GRADE 2

(2.1) **Number, operation, and quantitative reasoning.** The student understands how place value is used to represent whole numbers.	**2.1A:** The student is expected to use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways.

Materials: Base-ten blocks, including hundreds and ones (enough for numbers to 999)

Procedure: Place objects on table within reach of student

I'm going to say a number. How can you represent the number with base ten blocks?

Start with a number in the one hundreds and increase by hundreds, changing the tens and the ones units (e.g., 115, 254, 378 . . . 999).

Check Student's Response:

1. Number ___________
   - ☐ Correct
   - ☐ Other: _____________
2. Number ___________
   - ☐ Correct
   - ☐ Other: _____________
3. Number ___________
   - ☐ Correct
   - ☐ Other: _____________
4. Number ___________
   - ☐ Correct
   - ☐ Other: _____________
5. Number ___________
   - ☐ Correct
   - ☐ Other: _____________
6. Number ___________
   - ☐ Correct
   - ☐ Other: _____________

Check Student's Strategies:

- ☐ Begins by counting out 100s cubes, then 10s, then ones
- ☐ Arranges cubes in order from left to right
- ☐ Checks final arrangement by counting from hundreds to tens to ones
- ☐ Counts cubes out of order (e.g., counts ones or tens first)
- ☐ Other :

Repeat this task with other numbers as needed.

Notes:

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2.1A: The student is expected to use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways.	**Possible interpretations, issues to follow up on, and implications for teaching**

- If the student **begins by counting the hundreds cubes first, then tens, then ones**, this tells many things about the student’s understanding of number. The student is able to visualize the number then apply place value rules to concrete items in a meaningful way. The student demonstrates an understanding of the importance of place value in the representation of numbers. A teaching strategy might be to introduce the concept of thousands to students who demonstrate a clear understanding of the value of hundreds in numbers to 999.

- The student who **arranges the cubes from left to right** demonstrates an understanding of place value. Observe to make sure the student is counting the correct number of blocks for each of the hundreds, tens, and ones. A teaching strategy might include asking the child how the arrangements would change if the number order changed (e.g., the difference in block arrangements with numbers 456 and 654).

- The student who **checks the arrangement by counting in order** demonstrates a careful consideration of the use of place value. A teaching strategy might include providing larger numbers, including thousands and discussing how each numeral corresponds with the cubes.

- If the student **counts the cubes out of order**, this may be due to a lack of understanding of the importance of place value but may still lead to the correct arrangement. A student who starts with ones or tens may be thinking differently about what place value means when forming numbers. It is possible that the student may still arrange the numbers correctly, showing an understanding of place value, just not an emphasis when forming the numbers. It is also possible that the student has difficulty remembering the number while counting cubes. A teaching strategy might include moving back to two-digit numbers, to see if this helps the student, then move on to hundreds.

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(2.1) **Number, operation, and quantitative reasoning.** The student understands how place value is used to represent whole numbers.	**2.1B:** The student is expected to use place value to read, **write**, and describe the value of whole numbers to 999.
Materials: Paper and pencil	

Procedure: Numbers for this task should vary in difficulty and include numbers that are often challenging as students learn about place value (e.g., for 225, student may write 200205; for 205, student may write 25 or 2005; for 250, the student may write 20050). Include variations of numbers as well as patterns (e.g., 435 & 534 or 505 & 705, etc.)

I am going to say a number, and I would like you to write it for me.

How do you write the number [number]**?**

Check Student's Response:

1. Number ___________
   - ☐ Correct
   - ☐ Mixes the order of digits in response (e.g., hears two hundred and thirty-four, writes 324)
   - ☐ Misses a number (e.g., hears four hundred and two, writes 42)
   - ☐ Writes too many numbers, particularly as they sound (e.g., hears six hundred seventy-five, writes 600705)
   - ☐ Other ______________________

2. Number ___________
   - ☐ Correct
   - ☐ Mixes order of digits in response
   - ☐ Misses a number
   - ☐ Writes too many numbers
   - ☐ Other ______________________

3. Number ___________
   - ☐ Correct
   - ☐ Mixes numbers in response
   - ☐ Misses a number
   - ☐ Writes too many numbers
   - ☐ Other ________________________

Notes:

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2.1B: The student is expected to use place value to read, **write**, and describe the value of whole numbers to 999.	**Possible interpretations, issues to follow up on, and implications for teaching**

- The student who is able to **write numbers consistently and correctly** may be ready to move on to more challenging numbers, perhaps including the thousands place. A teaching strategy might be to introduce the concept of the thousands place by identifying the pattern used so far (e.g., ten ones equal one ten, ten tens equal one hundred, what do ten hundreds equal?) and allow the student to explore reading and writing numbers in the thousands.

- Sometimes students simply **confuse the order of numbers**. Make a note if the student consistently mixes up the order of the numbers when writing. If it is an occasional error, the student will likely respond with an "oh, yeah" when told the correct number. If students have difficulty writing these numbers, a teaching strategy might be to use numbers that have identifiable patterns or only vary by hundreds digit, until students are comfortable writing three-digit numbers (e.g., 125, 126, 127).

- **Missing a number, particularly zero in the tens place**, is a common error students make when learning to write multi-digit numbers. If this is a consistent error made by a student, a teaching strategy might be to work with base ten blocks to identify the difference between 42 and 402, writing numbers corresponding with each group of blocks.

- A common error is to **write numbers as they sound**. A student who writes 600705 demonstrates an understanding of base ten ideas but has not translated that to an understanding of how those values are represented in writing according to our place value system. A teaching strategy might be to work with base ten blocks to identify the number of cubes used to represent the different place values. Writing the number next to or under the cubes will provide the connection between the physical representation of the number and the written place value representation.

Texas Essential Knowledge and Skills for Mathematics "Rapid" Assessment: GRADE 2

(2.1) **Number, operation, and quantitative reasoning.** The student understands how place value is used to represent whole numbers.	**2.1B:** The student is expected to use place value to **read**, write, and describe the value of whole numbers to 999.

Materials: Number cards to 999

Procedure: Use number cards that vary from 100 to 999. The numbers should include different arrangements that will provide information about a student's understanding of place value (e.g., 212, 312, 412; 303, 507, 809; 569, 965, 659)

What number is this? How would you describe this number?

Check Student's Response:

1. Number ___________
   - ☐ Correct
   - ☐ Mixes digits in response (e.g., sees 234, says three hundred twenty four)
   - ☐ Misses a number (e.g., sees 402, says forty-two)
   - ☐ Says the numerals but not the number (e.g., sees 675 and says 6-seventy-five)
   - ☐ Other: _______________
2. Number ___________
   - ☐ Correct
   - ☐ Mixes digits in response
   - ☐ Misses a number
   - ☐ Says the numerals but not the number
   - ☐ Other: _______________
3. Number ___________
   - ☐ Correct
   - ☐ Mixes digits in response
   - ☐ Misses a number
   - ☐ Says the numerals but not the number
   - ☐ Other: _______________

Repeat this task with other numbers as needed.

Notes:

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2.1B: The student is expected to use place value to **read**, write, and describe the value of whole numbers to 999.	**Possible interpretations, issues to follow up on, and implications for teaching**

- The student who is **able to identify numbers consistently using the correct terminology** may be ready to move on to more challenging numbers, perhaps including thousands place. A teaching strategy might be to introduce the concept of the thousands place by identifying the pattern used so far (e.g., ten ones equal one ten, ten tens equal one hundred, what do ten hundreds equal?) and allow the student to explore reading and writing numbers in the thousands.

- Sometimes students simply **confuse the order of numbers**. Make a note if the student consistently mixes up the order of the numbers presented. If it is an occasional error, the student will likely respond with an "oh, yeah" when told the correct number. If students have difficulty identifying these numbers, use numbers that have identifiable patterns or only vary by hundreds digit, until students are comfortable reading three-digit numbers (e.g., 125, 225, 325). You could also work with two-digit numbers first then move up to three-digit numbers.

- Again, this is a **common error students make when learning to read multi-digit numbers**. If this is a consistent error made by a student, a teaching strategy might be to work with base ten blocks to identify the difference between 42 and 402.

- **A student may not use the term "hundred" while responding.** This is the way we often say numbers, so it is not necessarily incorrect but does not tell you whether the student understands the meaning of the number "6." A teaching strategy would be to remember to use the correct language when discussing numbers with students and to encourage them to do the same. Because it is essential that students understand that the "6" represents hundreds, it is important that we support this with our language during instruction.

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(2.1) **Number, operation, and quantitative reasoning.** The student understands how place value is used to represent whole numbers.	**2.1C:** The student is expected to **use place value to compare and order whole numbers to 999** and record the comparisons using numbers and symbols (<, =, >).

Materials: Number cards to 999

Procedure: Student will use number cards to order numbers from "least to greatest" and "greatest to least" Numbers should vary in complexity, in order to discover more about the student's understanding of place value (e.g., 409, 705, 901; 676, 767, 776; 829, 843, 851).

Place three number cards in front of student. Vary the placement of numbers so the smaller number is not always on the left or right.

Place these numbers in order from least to greatest.
Place these numbers in order from greatest to least.
How do you know this number is the greatest? How do you know this number is the least?

Check Student's Response: **Circle Order:**

1. Numbers ______, ______, ______ Least to Greatest | Greatest to Least
   - ☐ Correct
   - ☐ Incorrect
2. Numbers ______, ______, ______ Least to Greatest | Greatest to Least
   - ☐ Correct
   - ☐ Incorrect
3. Numbers ______, ______, ______ Least to Greatest | Greatest to Least
   - ☐ Correct
   - ☐ Incorrect
4. Numbers ______, ______, ______ Least to Greatest | Greatest to Least
   - ☐ Correct
   - ☐ Incorrect

Repeat this task with other numbers as needed.

Notes:

Texas Essential Knowledge and Skills for Mathematics "Rapid" Assessment: GRADE 2

2.1C: The student is expected to **use place value to compare and order whole numbers to 999** and record the comparisons using numbers and symbols (<, =, >).	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to use their understanding of place value to compare and order numbers according to their values. Pay attention to the student's errors, if any, and plan further questions and teaching strategies to address these errors.

- There may be **one place value that consistently produces errors** (e.g., student orders numbers according to tens or ones digits, rather than hundreds digit). A teaching strategy to address this issue might be to practice ordering numbers using those that vary by hundreds only (e.g., 129, 329, 529). This will help the student pay closer attention to the value of the hundreds place when ordering numbers. Then the tens values can be introduced and related to the hundreds: the student has to learn that the hundreds have priority over the tens.

- The student may **have more difficulty ordering the numbers from greatest to least**. In this case, the student may order numbers by the difference in the digits in the ones place, rather than the hundreds place. A teaching strategy might be to have the student order numbers that only vary by hundreds (e.g., 400, 500, 700). Providing a change in only one place value limits distracters and allows the student to focus on the problem of "greatest to least" one place value at a time.

- If the student is **having difficulty ordering numbers**, simplify the numbers presented (e.g., changing in only one place value at a time) and provide base ten blocks to assist the student with a visual representation of the numbers.

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(2.1) **Number, operation, and quantitative reasoning.** The student understands how place value is used to represent whole numbers.	**2.1C:** The student is expected to use place value to compare and order whole numbers to 999 and **record the comparisons using numbers and symbols** (<, =, >).

Materials: Number cards to 999. Symbol cards for "greater than," "less than," and "equal to."

Procedure: The student will look at pairs of number cards and then determine "greater than," "less than," or "equal." Pairs of numbers should vary in complexity, in order to discover more about the student's understanding of place value (e.g., 405 and 450; 676 and 767; 831 and 841; 308 and 229). Also use pairs of numbers that are equal.

Place two number cards in front of student. Vary the placement of numbers so the smaller number is not always on the left or right.

Point to the number that is greater. (Student points)
Point to the number that is less. (Student points)

Ask the student to choose the correct symbol to represent the relationship between the numbers.

How would you use a symbol to compare these two numbers?

Record correct and incorrect responses below.

Check Student's Response:

1. Numbers ______ & ______ greater | less | equals
   Response: Correct | Incorrect **Symbol:** Correct | Incorrect
2. Numbers ______ & ______ greater | less | equals
   Response: Correct | Incorrect **Symbol:** Correct | Incorrect
3. Numbers ______ & ______ greater | less | equals
   Response: Correct | Incorrect **Symbol:** Correct | Incorrect
4. Numbers ______ & ______ greater | less | equals
   Response: Correct | Incorrect **Symbol:** Correct | Incorrect

Repeat this task with other numbers as needed.

Notes:

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2.1C: The student is expected to use place value to compare and order whole numbers to 999 and **record the comparisons using numbers and symbols** (<, =, >).	**Possible interpretations, issues for follow up, and implications for instruction.**

This task requires students to use their understanding of place value to compare the value of numbers. Pay attention to the student's errors, if any, and plan further questions and teaching strategies to address these errors.

- There may be **one place value that consistently produces errors** (e.g., student chooses the number with highest ones digit, rather than hundreds digit). A teaching strategy to address this issue would be to identify the value of each numeral and use numbers that vary greatly by hundreds (e.g., 109 and 705). The student may recognize that 700 is much greater than 100 and will notice that even though the "9" in the ones place is greater than the "5" that does not mean 109 is the greater number.

- The student may **respond that 405 and 450 (for example) are equal**. In this example, the student demonstrates confusion about place value and its meaning. A teaching strategy would be to use base ten blocks to show the difference between the two numbers and use the blocks to help the student determine which is greater.

- The student may **have difficulty determining which is greater when only the tens numeral is changed**. A teaching strategy might include using base ten blocks to compare differences in the value of the two numbers.

- If the student **demonstrates confusion with the symbols**, a teaching strategy might be to provide more practice using the symbols with numbers with obvious differences (like 111 and 999). This will allow the student to focus on choosing the correct symbol, rather than also having to focus on the comparison (e.g., 5 and 10, 100 and 500, etc).

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(2.2) **Number, operation, and quantitative reasoning.** The student describes how fractions are used to name parts of whole objects or sets of objects.	**2.2A:** The student is expected to use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less).

Materials:
- Any object or materials representing a whole that can be broken into multiple pieces (e.g., a pizza pie, graham crackers, construction paper cut into equivalent pieces to represent a "brownie" or "cake")
- Fraction cards (cards labeled with the fractions – you can have your students make them)

Procedure: Students will use the materials to represent and name fractional parts of the whole. Show the student the complete whole and the fraction card, ask the student to show you how to represent the fraction, using the available materials.

The denominator should be equivalent to the number of pieces available (e.g., if asking for 2/6, there should be six pieces of pie, etc,), up to a denominator of 12.

Show me (2/6, 3/4, 2/3, 1/5, etc.)

Check Student's Response:

1. Fraction ___________ ☐ Correct ☐ Incorrect	4. Fraction ___________ ☐ Correct ☐ Incorrect
2. Fraction ___________ ☐ Correct ☐ Incorrect	5. Fraction ___________ ☐ Correct ☐ Incorrect
3. Fraction ___________ ☐ Correct ☐ Incorrect	6. Fraction ___________ ☐ Correct ☐ Incorrect

Repeat this task with other fractions as needed.

Notes:

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2.2A: The student is expected to use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less).	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to use materials to represent their understanding of parts of a whole. Students may make errors when determining how many pieces to choose.

- The student may **confuse the numerator and the denominator**. In this case, the student may give you pieces equaling the denominator. A teaching strategy might be to discuss the meaning of each part of the fraction, emphasizing that the denominator represents the number of pieces of the whole, and the numerator represents the number of parts. Using fractions with the same denominator to practice counting will help the student differentiate between the two (e.g., 1/6, 2/6, 3/6, etc.).

- **As the numerators and denominators increase, the student may have greater difficulty determining how many pieces represent the fraction**. A teaching strategy could include using fraction manipulatives and having the student practice assembling wholes with various fractions, then assembling fractions with the same pieces.

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(2.2) **Number, operation, and quantitative reasoning.** The student describes how fractions are used to name parts of whole objects or sets of objects.	**2.2A:** The student is expected to use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less).

Materials:

- Rectangles or circles, representing different fraction values, with fractions cut out, up to a denominator of 12.

Procedure: Students will use the materials to name equal fractional parts of a whole. Show the student the shaded pictures and ask student use fractions to identify the amount shaded in.

What does this model show? (3/5, 1/4, 5/8, 9/12, etc.)

Check Student's Response:

1. Fraction ___________
   - ☐ Correct
   - ☐ Says only numerator
   - ☐ Says variation of fraction (e.g., 3 out of 5)
   - ☐ Identifies only parts shown (e.g., 9)
   - ☐ Confuses numerator and denominator (e.g., says 8/5)
   - ☐ Other ______________
2. Fraction ___________
   - ☐ Correct
   - ☐ Says only numerator
   - ☐ Says variation of fraction (e.g., 3 out of 5)
   - ☐ Identifies only parts shown (e.g., 9)
   - ☐ Confuses numerator and denominator (e.g., says 8/5)
   - ☐ Other ______________
3. Fraction ___________
   - ☐ Correct
   - ☐ Says only numerator
   - ☐ Says variation of fraction (e.g., 3 out of 5)
   - ☐ Identifies only parts shown (e.g., 9)
   - ☐ Confuses numerator and denominator (e.g., says 8/5)
   - ☐ Other ______________
4. Fraction ___________
   - ☐ Correct
   - ☐ Says only numerator
   - ☐ Says variation of fraction (e.g., 3 out of 5)
   - ☐ Identifies only parts shown (e.g., 9)
   - ☐ Confuses numerator and denominator (e.g., says 8/5)
   - ☐ Other ______________

Repeat this task with other fractions as needed.

Notes:

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2.2A: The student is expected to use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less).	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to use materials to name fractions based on a picture representing parts of a whole. Students may make errors with the numerator or denominator.

- Students who **correctly identify the shaded portions with fractions** are ready to explore more complex fraction concepts. A teaching strategy for advanced students, which goes beyond the grade level expectations, would be to have students compare equal representations that have different denominators (e.g., 2/6 and 1/3) and discuss the relationships among numerators and denominators in fractions that are equal.

- A student **may not understand the relationship between the parts and the whole** and how they are related to the numerator and denominator in a fraction. A teaching strategy might include using simple fractions such as 1/2 or 1/3 to show how one piece of the whole is represented by the numerator, and the total number of parts is represented by the denominator.

- Saying “4 out of 6 equal parts” demonstrates an **understanding of how the parts relate to the whole**. A teaching strategy might be to reinforce the terminology when working with other fractions, referring to the fraction in both ways (e.g., “4 out of 6 equal parts, or four sixths”).

- The student who **responds with a fraction made up only of the pieces shown** demonstrates a lack of understanding of where the “parts” and “whole” are. A teaching strategy might be to use concrete materials and ask the student to divide a whole into its parts and represent the fraction (e.g., divide a whole pizza in half, demonstrate the two parts, and ask for one part; demonstrate the relationship between the one piece of pizza and the “1” in the denominator and the two pieces that make the whole pie and the “2” in the denominator.)

- **Confusing the numerator and denominator is common** and requires additional practice with emphasis on what makes up the “parts” and the “whole.” A teaching strategy might be to provide the student with fractional shapes, having him or her count the pieces represented by denominator, then put in the amount represented by the numerator.

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(2.2) **Number, operation, and quantitative reasoning.** The student describes how fractions are used to name parts of whole objects or sets of objects.	**2.2B:** The student is expected to use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less).

Materials:
- Groups of identical objects (e.g., counting bears, colored chips, unifix cubes)
- Fraction cards

Procedure: Students will use the materials to represent fractional parts of the set of objects.

Place the set of objects on the table and show the student the fraction card. Ask the student to show you how to represent the fraction, using the available materials.

For example in the case of 2/6, the student may first lay out a line of 6 objects then indicate that two of these are the numerator in the fraction and the entire set of 6 is the denominator.

The denominator should be equivalent to the number of pieces available (e.g., if asking for 2/6, there should be six bears, etc,), up to a denominator of 12.

Show me 2/6, 3/4, 2/3, 1/5, etc.

Check Student's Response:

1. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________
2. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________
3. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________
4. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________
5. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________
6. Fraction ___________
   - ☐ Correct
   - ☐ Incorrect: __________

Repeat this task with other fractions as needed.

Notes:

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2.2B: The student is expected to use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less).	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to use materials to represent their understanding of parts of a set of objects. Students may make errors when determining how many pieces to choose.

- The student may **confuse the numerator and the denominator**. In this case, the student may give you pieces equivalent to the denominator. A teaching strategy might be to discuss the meaning of each part of the fraction, emphasizing that the denominator represents the number of elements in the whole set and the numerator represents a specific number of elements in the set. Using fractions with the same denominator to practice will help the student differentiate between the two (e.g., 1/6, 2/6, 3/6, etc.).

- **As the numerators and denominators increase**, the student may have greater difficulty determining how many pieces represent the fraction. A teaching strategy would include using illustrations of sets of objects and having the student shade in the correct number of parts.

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(2.2) **Number, operation, and quantitative reasoning.** The student describes how fractions are used to name parts of whole objects or sets of objects.	**2.2C:** The student is expected to use concrete models to determine if a fractional part of a whole is closer to 0, ½, or 1.

Materials: Models of pizzas with some parts cut out,
representing different fraction values up to a denominator of 12.

Procedure: Students will identify parts as closer to 0, 1/2, or 1. Show the student pictures and ask whether the parts represent a value closer to 0, 1/2, or 1. Vary the numerator and denominator and the order of presentation, using fractions that are close to 0 (1/8, 1/5, etc.), 1/2 (2/4, 4/8, etc.), and 1 (6/7, 9/10, etc.)

Is this amount closer to 0, 1/2, or 1?

You can then give the models to the student, and ask:

Create a model that is closer to [0, ½, or 1] **and explain how you determined it.**

Check Student’s Response:

1. Fraction ___________
   - ☐ Correct
   - ☐ Other:__________
2. Fraction ___________
   - ☐ Correct
   - ☐ Other:__________
3. Fraction ___________
   - ☐ Correct
   - ☐ Other:__________
4. Model ___________
   - ☐ Correct
   - ☐ Other:__________
5. Model ___________
   - ☐ Correct
   - ☐ Other:__________
6. Model ___________
   - ☐ Correct
   - ☐ Other:__________

Repeat this task with other fractions as needed.

Notes:

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2.2C: The student is expected to use concrete models to determine if a fractional part of a whole is closer to 0, ½, or 1.	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to identify whether the fraction represented is closer to 0, 1/2, or 1 based on a picture representing parts of a whole.

- Students who **correctly identify the fractions** are ready to explore more complex fraction concepts, although such concepts are beyond the grade level expectation. A teaching strategy would be to provide students with shaded images that are closer to 0, 1/2, and 1 and encourage students to compare equal representations that have different denominators (e.g., 4/8 and 3/6) and discuss the relationships among numerators and denominators in fractions that are equal.

- Students who **have difficulty identifying whether the figures represent fractions closer to 0, 1/2, or 1** may not have a clear understanding of how those fractions are represented. A teaching strategy might be to have students work with different images that represent 0, 1/2, and 1, using different denominators. As the student becomes familiar, add or take away one part, demonstrating how the new fraction is close in value to the previous fraction. You could also use fraction bars to compare the different fractions.

- Students who **can identify fractions but cannot create the model** may not have a clear understanding of how fractions are related or how changing numerators and denominators affect the value of fractions. A teaching strategy could include having the student examine and compare unit fractions of various sizes and exploring the relationship of fractions when parts are added or taken away.

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(2.3) **Number, operation, and quantitative reasoning.** The student adds and subtracts whole numbers to solve problems.	**2.3A:** The student is expected to recall and apply basic addition and subtraction facts (to 18).
Materials: List of addition and subtraction problems, up to a total of 18, in order of increasing difficulty Vary the order of numbers presented for addition, larger and smaller first. Alternate between addition and subtraction problems. Optional approaches include questions using doubles (e.g., 5+5, 18-9), patterns (e.g., 12-5, 12-6, 12-7), and plus or minus one (12-1, 4-1, 5+1, 6+1), etc.	
Procedure: Students will answer basic addition and subtraction problems to 18. Present the problems as word problems, per the example below. It is not necessary to present a large number of problems at once, but by presenting them by increasing levels of difficulty, you will be able to document student progress. As an example: **Jack had 7 books on the bookshelf. He put 8 more books on the bookshelf this morning. How many books are on Jack's bookshelf?**	
Check Student's Response:	**Check Student's Strategies:**
1. ________________ ☐ Correct ☐ Other:	☐ Counted aloud ☐ Used fingers ☐ Other:
2. ________________ ☐ Correct ☐ Other:	☐ Counted aloud ☐ Used fingers ☐ Other:
3. ________________ ☐ Correct ☐ Other:	☐ Counted aloud ☐ Used fingers ☐ Other:
4. ________________ ☐ Correct ☐ Other:	☐ Counted aloud ☐ Used fingers ☐ Other:
Notes:	

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2.3A: The student is expected to recall and apply basic addition and subtraction facts (to 18).	**Possible interpretations, issues to follow up on, and implications for teaching**

This task requires students to interpret the problem and then recall addition and subtraction facts from memory. If you find that students struggle with the problems you present, try using smaller numbers and problems that include patterns (e.g., 9+2, 9+3, 9+4 . . . etc.).

Observe the student's ability to interpret the problem situation.

- If the student was able to **solve the problem successfully**, it is likely that he or she was able to interpret the problem successfully. You will want to verify this with additional problems. However, if the student is able to interpret these problems successfully, you may want to challenge the student to interpret problems posed in more difficult ways. For example, you could include distracters in the problem to see if the student is able to discriminate between relevant and irrelevant information, or you could describe the operation using words that are more difficult to interpret.
- If the student **was not able to solve the problem successfully**, it is important to assess whether the student is struggling with the mathematics, the interpretation of the story problem, or both. Assess the student's ability with the mathematics using the same problems presented in number sentences. If the student is able to do the mathematics, the struggle is with the interpretation. In this case, a teaching strategy may include having the student model the problem using manipulatives, discussing words that indicate operations, or breaking the problem into smaller tasks. Give the student practice in interpreting problems he or she is able to handle mathematically.

Additionally, observe the student's strategies for further information regarding their understanding of addition and subtraction facts.

- Did the student **count aloud**? This is a reliable strategy. A teaching strategy could be to encourage the student to become more fluent with computations. Present the same basic number combinations on a daily basis. Encourage the student to find patterns in the number combinations (e.g., "What do you notice about 9+7 and 7+9?").
- Did the student **use his or her fingers**? This is a reliable strategy for small numbers. It is not efficient for larger numbers and may lead to errors when calculating numbers with sums to 18. Do not respond negatively to this student's strategy. It is important that his or her strategy is accepted; otherwise, he or she may attempt to perform computations in a way that he or she does not understand which could lead to serious problems down the line. A teaching strategy for this student could include encouraging him or her to become more fluent with basic number combinations. You may find that the student will use his or her fingers because they worked for smaller numbers but, with lots of practice, will learn not to always rely on them.

Ask: How do you know?! If the student seems to have difficulty, but you are not sure why, ask this important question. Be careful not to make students feel like you are judging them or that there are 'wrong' or 'right' answers when asking 'how did you know' questions. In order to further your students' thinking, you must first figure out what they are thinking.

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(2.3) **Number, operation, and quantitative reasoning.** The student adds and subtracts whole numbers to solve problems.	**2.3D:** The student is expected to determine the value of a collection of coins up to one dollar.

Materials: 4 quarters, 10 dimes, 10 nickels, 9 pennies

Procedure: Students will identify collections of coins up to a dollar. First, make sure student can identify the value of each coin. Present coins in random order, using a combination of coins representing various values (e.g., may use only one type of coin, a combination of coins, increasing amounts)

It is not necessary to present a large number of problems at once, but by presenting them by increasing levels of difficulty, you will be able to document student progress.

Can you tell me how much money is here?

Check Student's Response:	Check Student's Strategies
1. $________________ ☐ Correct ☐ Other:	☐ Counted by ones (e.g., nickel as 1, 2, 3, 4, 5) ☐ Sorted coins before counting ☐ Counted large coins first ☐ Other:
2. $________________ ☐ Correct ☐ Other:	☐ Counted by ones (e.g., nickel as 1, 2, 3, 4, 5) ☐ Sorted coins before counting ☐ Counted large coins first ☐ Other:
3. $________________ ☐ Correct ☐ Other:	☐ Counted by ones (e.g., nickel as 1, 2, 3, 4, 5) ☐ Sorted coins before counting ☐ Counted large coins first ☐ Other:
4. $________________ ☐ Correct ☐ Other:	☐ Counted by ones (e.g., nickel as 1, 2, 3, 4, 5) ☐ Sorted coins before counting ☐ Counted large coins first ☐ Other:

Notes:

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2.3.D: determine the value of a collection of coins up to one dollar	**Possible interpretations, issues to follow up on, and implications for teaching**

Within the same activity, you may assess a student's knowledge of the values of given coins, ability to count by fives or tens, understanding of place value (counting quarters and dimes first, saving pennies for last), and ability to add large numbers.

Observe the student's strategies for further information regarding his or her ability to determine amounts from given collections of coins.

- **Counting by ones** is a valid strategy but demonstrates a possible reluctance or inability to use the fives and tens available when counting with nickels and dimes. A teaching strategy would include encouraging the student to count one set of a single coin (e.g., all nickels) to practice counting by fives and tens. Once the student is comfortable, introduce another coin (e.g., nickels and dimes) and work with the student to become comfortable counting tens and fives together.

- A student may **group the coins by type**. This is an efficient strategy for counting large numbers of coins and demonstrates the student understands place value when counting. Starting with the large coins allows the student to work from larger units to smaller. A teaching strategy might include providing coins that equal more than one dollar and encourage the student to organize the coins by those that equal one dollar, then the other coins that represent the value of the cents.

- If the student **understands the values of the coins and can start counting but gets lost in the middle**, work with smaller numbers of coins, fewer variations, and lesser amounts until he or she is comfortable and then gradually increase the given number of coins and values.

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(2.5) **Patterns, relationships, and algebraic thinking.** The student uses patterns in numbers and operations.	**2.5A:** The student is expected to find patterns in numbers such as in a 100s chart.

Materials: 100s chart

Procedure: Present a hundreds chart to the student and ask them to identify the patterns described below.

Check Student's Response:	Check Student's Strategies:
Odds ☐ Correct ☐ Other:	☐ Counted numbers out loud ☐ Pointed to numbers ☐ Counted numbers in between pattern numbers
Evens ☐ Correct ☐ Other:	☐ Counted highlighted numbers out loud ☐ Pointed to highlighted numbers ☐ Counted numbers in between highlighted numbers
Fives ☐ Correct ☐ Other:	☐ Counted highlighted numbers out loud ☐ Pointed to highlighted numbers ☐ Counted numbers in between highlighted numbers
Tens ☐ Correct ☐ Other:	☐ Counted highlighted numbers out loud ☐ Pointed to highlighted numbers ☐ Counted numbers in between highlighted numbers
Plus three ☐ Correct ☐ Other:	☐ Counted highlighted numbers out loud ☐ Pointed to highlighted numbers ☐ Counted numbers in between highlighted numbers
Plus four ☐ Correct ☐ Other:	☐ Counted highlighted numbers out loud ☐ Pointed to highlighted numbers ☐ Counted numbers in between highlighted numbers

Notes:

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2.5A: The student is expected to find patterns in numbers such as in a 100s chart.	**Possible interpretations, issues to follow up on, and implications for teaching**

This activity assesses students understanding of the patterns in number.

- **Counting the numbers out loud** allows the student to hear the rhythm in the numbers and may help in recognizing the pattern. Often times, number patterns such as 2s, 5s, and 10s, are said out loud and are not always connected with a visual representation. In this case, counting the numbers verbally might assist the student in recognizing the pattern. A teaching strategy might include having the student count out loud while shading in the numbers on a 100s chart.

- Depending on the complexity of the pattern, a student may need to **point to the numbers** to gain a sense of the pattern. This strategy will likely be accompanied by counting out loud. This is another strategy to assist the student in recognizing the connection between the visual pattern and the numeric pattern.

- The student who **identifies the visual pattern** (e.g., “It makes lines that go up and down.”) is not attending to the numbers. The activity is to tell what is special about the numbers, so a teaching strategy might be to work with smaller number sets, such as 1-10, to help the student focus on the patterns in the number, rather than the patterns on the 100s chart. Using vertical number lines may also alleviate confusion.

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(2.6) **Patterns, relationships, and algebraic thinking.** The student uses patterns to describe relationships and make predictions.	The student is expected to: (A) generate a list of paired numbers based on a real-life situation such as number of tricycles related to number of wheels; (B) identify patterns in a list of related number pairs based on a real-life situation and extend the list.

Materials:

- Pictures of objects with identical, easily identifiable numbers of attributes (e.g., tricycle with three wheels, boat with two sails, four leaf clovers, etc.)
- A table with two columns. The first column lists the number of objects. As this number increases, so will the difficulty level of the activity. The second column will be to record the number of attributes represented by the number of objects.

Procedure:
Complete the first row for the student as an example.

Here is a table I would like you to finish. In this column, we have the number of [objects**] and in this column, we have the number of [**attributes**]. So here you can see if we have one [**object**], then we have [**number of attributes**].**

Follow up by asking student if she can see a pattern in the numbers.

For students who successfully complete the table, you can follow up by asking them to create their own table for a similar pattern.

Check Student's Response:

1. Number of attributes per object ________
   - ☐ Correctly completes given table
   - ☐ Some numbers correct ____________
   - ☐ No numbers correct
   - ☐ Successfully creates table

Check Student's Strategies:

- ☐ Counts attributes individually (e.g., 1..2..3..4..5..6) rather than by the pattern
- ☐ Counts by pattern represented (e.g., by twos for the sails on the boat)
- ☐ Uses fingers
- ☐ Does work "in head" – no verbalization
- ☐ Other:

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2. Number of attributes per object ________ ☐ Correctly completes table ☐ Some numbers correct ____________ ☐ No numbers correct ☐ Successfully creates table	☐ Counts attributes individually (e.g., 1..2..3..4..5..6) rather than by the pattern ☐ Counts by pattern represented (e.g., by twos for the sails on the boat) ☐ Uses fingers ☐ Does work "in head" – no verbalization ☐ Other:
3. Number of attributes per object ________ ☐ Correctly completes table ☐ Some numbers correct ____________ ☐ No numbers correct ☐ Successfully creates table 4. Number of attributes per object ________ ☐ Correctly completes table ☐ Some numbers correct ____________ ☐ No numbers correct ☐ Successfully creates table 5. Number of attributes per object ________ ☐ Correctly completes table ☐ Some numbers correct ____________ ☐ No numbers correct ☐ Successfully creates table	☐ Counts attributes individually (e.g., 1..2..3..4..5..6) rather than by the pattern ☐ Counts by pattern represented (e.g., by twos for the sails on the boat) ☐ Uses fingers ☐ Does work "in head" – no verbalization ☐ Other: ☐ Counts attributes individually (e.g., 1..2..3..4..5..6) rather than by the pattern ☐ Counts by pattern represented (e.g., by twos for the sails on the boat) ☐ Uses fingers ☐ Does work "in head" – no verbalization ☐ Other: ☐ Counts attributes individually (e.g., 1..2..3..4..5..6) rather than by the pattern ☐ Counts by pattern represented (e.g., by twos for the sails on the boat) ☐ Uses fingers ☐ Does work "in head" – no verbalization ☐ Other:
Notes:	

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The student is expected to: (A) generate a list of paired numbers based on a real-life situation such as number of tricycles related to number of wheels; (B) identify patterns in a list of related number pairs based on a real-life situation and extend the list.	**Possible interpretations, issues to follow up on, and implications for teaching**

This activity assesses student's ability to generate paired numbers and recognize number patterns.

- A student who **relies on counting the attributes individually** may not recognize that a pattern is present in the numbers: the incremental increase of the number of objects corresponds to the incremental increases in the number of attributes. After working with a few examples, you may need to highlight the pattern for the student. Draw the student's attention to the numbers he or she created when completing the table. It should become evident that the numbers of attributes are following a pattern that is tied to the number of objects. Continue practice with small sets of objects and attributes until the student is comfortable using his or her new understanding of number patterns to make predictions.

- Students who are **able to recognize the repeating pattern and use it to make predictions** regarding what number comes next in the "attributes" column may be ready for a more challenging activity. A teaching strategy might be to vary the numbers in the "objects" column to represent different patterns within a sequence (e.g., 3 and 6, 4 and 8, etc.), or to discontinue visual cues and only use numbers (e.g., 6 and 24, 7 and 28, 8 and 32, etc.). Discuss the ways in which the numbers in the "attributes" column relate to the numbers in the "objects" column.

- **Using fingers to keep track of attributes** is a valid but inefficient method and may help students when they are counting by 2s, 3s, or 5s. Pay attention to whether the student uses her fingers to count by ones or if she uses them to keep track of counting by pairs, threes, etc. These are two different strategies that will provide you with information about the student's ability to use number pattern.

- If the student **does not verbalize a strategy**, but simply writes down corresponding numbers, it is important to ask how he or she figured it out, whether the answers are correct or incorrect. He or she may then verbalize a strategy such as, "I counted by twos in my head," which will provide you with important information about his or her understanding of number patterns.

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(2.7) **Geometry and spatial reasoning.** The student uses attributes to identify two- and three-dimensional geometric figures. The student compares and contrasts two- and three-dimensional geometric figures or both.	**2.7 (A)** describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc.; **2.7 (B)** use attributes to describe how 2 two-dimensional figures or 2 three-dimensional geometric figures are alike or different.

Materials:

- Pattern blocks and/or homemade cutouts of three-dimensional geometric figures. It is best if some of the shapes are non-canonical.

Procedure:

Select two three-dimensional geometric figures.

What attributes can you use to describe these three-dimensional geometric figures?
(Wait for response.)
What is different about these three-dimensional geometric figures? What is the same about these three-dimensional geometric figures?

Check Student's Response:

Figures ________________ & _________________

☐ Identifies attribute(s) of figures: number of vertices | faces | edges | sides | other__________

☐ Identifies differences between figures: number of vertices | faces | edges | sides | other_____

☐ Identifies similarities: number of vertices | faces | edges | sides | other__________________

☐ Other:

Check Student's Strategies:

☐ Student identifies the names of the shapes/objects but says little else

☐ Student describes attributes of shapes informally (e.g., "There are three sides," and/or "There are three pointy things, etc.).

☐ Student compares figures on non-geometric geometric attributes (e.g., "You can't roll a cube, but you can roll a sphere.").

☐ Student places shapes next to or on top of each other to make comparisons

☐ Other:

Repeat for other objects

Notes:

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The student is expected to: (A) describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc.; (B) use attributes to describe how 2 two-dimensional figures or 2 three-dimensional geometric figures are alike or different.	**Possible interpretations, issues to follow up on, and implications for teaching**

- If the student **identifies the names of the shapes but says little else**, a teaching strategy would include challenging the student to sort shapes based on attributes. This challenge can be approached in a number of ways. For example, you might ask each student to create a group of five shapes that have something in common. Students can then guess what their peers' collections have in common. (Your students will probably figure out that this game is more fun when the shapes in their groups are diverse and peers have to work to figure out what they all have in common).

- If the student **describes attributes of shapes informally** (e.g., "there are three sides," and/or "there are three pointy things," etc.) a teaching strategy would include challenging the student to express his or her thoughts regarding shape analysis to his or her peers. For example, students can be asked to share their sorting rules with the entire class—this will challenge students to move beyond descriptions such as "really pointy ones" when they realize other students may have used the same 'rule' for very different shapes).

- If the student **compares the figures based on non-geometric attributes**, this still tells you something about what he or she is thinking. In this case, he or she may be more focused on the ways she experiences these objects in the real world. And while his or her comparisons may be accurate, the goal of the task is to find out about his or her understanding of geometric attributes. A teaching strategy might be to draw his or her attention to the physical attributes of each shape (e.g., "You're right; you can't roll a cube. Maybe that is because it has flat faces and the sphere has no flat faces. Can you tell me another way these two are different or similar?").

- The student who **holds the shapes together to compare them** is using a visual strategy to determine similarities and differences. This student may be interested in noticing that a square fits on to one face of a cube and may not realize it until holding the figures together. A teaching strategy might include holding dissimilar objects together in order to discover differences between them, such as a circle and a square, noticing that one has "points" and the other doesn't.

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(2.8) **Geometry and spatial reasoning.** The student recognizes that a line can be used to represent a set of numbers and its properties.	**2.8:** The student is expected to use whole numbers to locate and name points on a number line.

Materials:
- Number line
- Pencil

Procedure:
Present a number line to student that begins at zero and has a dark line marking numbers in intervals of 5 and with numbers written to mark the tens. Ask student to locate and name various points on the line. Do not present numbers in order (e.g., 11, 25, 4, 19, etc.) Provide numbers that will land on 5s or 10s, numbers that are one more or one less than 10s, numbers that are odd, even, etc.

Can you show me where the number [number**] is on this line, then write that number below the line?**

Check Student’s Response:
- ☐ Locates all numbers correctly
- ☐ Locates 5s and 10s but has difficulty with other numbers
- ☐ Is not able to locate numbers correctly
- ☐ Other:

Check Student’s Strategies:
- ☐ Starts from zero and counts out loud by 5s or 10s, then ones, to locate each number
- ☐ Counts by ones to locate each number
- ☐ Uses previously located numbers to locate new numbers
- ☐ Counts backwards from higher numbers to locate smaller numbers
- ☐ Counts starting at zero for each number
- ☐ Other:

Notes:

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2.8: The student is expected to use whole numbers to locate and name points on a number line.	**Possible interpretations, issues to follow up on, and implications for teaching**

- The student who **starts at zero and uses the markings on the number line** to locate numbers demonstrates an understanding of both counting and number patterns. A teaching strategy might include using number lines with larger intervals or less regular intervals (e.g., 4, 8, 12, 16, etc.) to see if the student can continue to apply this strategy to locate numbers.

- The student who **counts by ones along the number line** may still be able to locate all of the numbers but may take longer to complete the process. A teaching strategy might include pointing out the marked intervals and writing the numbers below, then encouraging the student to count by 5s or 10s to find numbers that are multiples of fives, in order to provide more practice with this strategy.

- A student may use an advanced strategy, **recognizing that previously located numbers now act as additional clues for locating new numbers**. A teaching strategy might include having the student locate numbers that are part of a pattern (e.g., odds/evens, multiples of a number, doubles, etc.) to see if the student can apply his or her strategy to locate new numbers.

- The student who **begins at zero to locate each number** may not be comfortable starting to count at another number. Although he or she may still locate each of the numbers with accuracy, as the numbers increase, this becomes a less efficient method. A teaching strategy would include using a smaller number line that starts at 5 or 10, to allow the student to practice locating numbers using the numbers represented on the line other than zero.

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(2.9) **Measurement.** The student directly compares the attributes of length, area, weight/mass, and capacity, and uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length, area, capacity, and weight/mass. The student recognizes and uses models that approximate standard units (from both SI, also known as metric, and customary systems) of length, weight/mass, capacity, and time.	**2.9A:** The student is expected to identify concrete models that approximate standard units of length and use them to measure length.

Materials:

- Two strips of paper, each 6" long
- One 1" measuring tool (inch cube, 1" piece of paper, 1" tile, etc.)
- Pencil and paper

Procedure:
Place materials in front of student.
Which object is approximately one inch? (Wait for the student to identify the measuring tool)

If [measuring tool] **is one inch, how many inches is this strip of paper?**
(Don't line up the pieces of paper one immediately below the other. Wait for response).

Check Student's Response:

☐ Correctly identifies the measuring tool.

☐ Uses the 1 inch tool that was provided and places it end on end (iterates) for the full length of each strip of paper and responds that the strips are the same length.

☐ Uses the 1 inch tool that was provided, but measures two different lengths due to incorrectly placing the tool end on end – responds two strips are different lengths

☐ Cannot think of a way to show the answer with the tool

☐ Other:

Check Student's Strategies:

☐ Carefully iterates the length of strip of paper with the tool (student might use pencil to mark each iteration or might iterates carefully with the block)

☐ Leaves spaces between block when 'iterating'

☐ Other:

Repeat this task with other materials of different lengths. It will probably be most useful to have the student measure and compare 2 objects at a time. If you ask the student to "measure" just one strip of paper, it might appear as if she knows how to "measure" simply because she has learned to replicate an empirical procedure for measuring (e.g., "You have to lay units end on end then count how many because that's what my teacher said," even though the student may not understand that the purpose of the units is to REPRESENT a given length so that that length might be compared with a different length).

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2.9A: The student is expected to identify concrete models that approximate standard units of length and use them to measure length.	**Possible interpretations, issues to follow up on, and implications for teaching**

- If the student **used the 1" block** (or whatever 1" tool was used) and **carefully placed it end on end** (iterates) the length of each strip of paper and says something like, "They're the same length because they are both six of these," the student might have a good initial understanding of how to measure the length of something by iterating a third term (a nonstandard measuring tool). A teaching strategy would be to further challenge the student to use a variety of units and parts of whole units to compare the lengths of items that cannot be compared directly. Try a whole-class or small group activity in which students need to measure two objects indirectly in order to solve a real-life problem (e.g., How much butcher paper will we need to precisely cover the length of the bulletin board? Or will someone in a wheelchair be able to fit through our doorway?). Provide students with a variety of standard and nonstandard units and measuring tools with which to experiment.

- If the student **used the block to iterate, but did so 'sloppily'** (e.g., did not begin at the endpoint of the strip of paper, left spaces between iterations, etc.), it could indicate that the student does not understand that length can be quantified precisely (see above), or it could indicate that the student simply iterated units in a somewhat careless way, or it could indicate that the student's fine motor skills do not lend themselves well to precise actions. If it is simply a matter of the student being 'sloppy,' a teaching strategy might be to teach the student that it is necessary to be methodical and precise when quantifying an attribute such as length by iterating units (e.g., iteration must begin at the endpoint of the object being measured, there can be no spaces between iterations, etc.).

- If the student **cannot think of a way to use the block to prove his or her answer**, perhaps the student does not yet understand that units such as blocks can serve as tools to quantify length. Before the student can "partition" something like a strip of paper into measurable units (by iterating a block, etc.), the student might need to think about length as a measurable attribute that can be REPRESENTED precisely or quantified by something else (usually by a number of units, but more simply by something that is the same length of the object being measured). A possible teaching strategy might be to teach the student that length is an attribute that can be quantified and represented by something else. An activity would involve asking the student to cut a piece of paper to the same size as the strips of paper used in the task.

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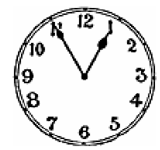
(2.10) **Measurement.** The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit).	**2.10B:** The student is expected to read and write times shown on analog and digital clocks using five-minute increments.

Materials:
- Analog clock or pictures representing time on analog face,
- Pictures of times on digital face

Varying times by 5-mintue increments (e.g., 10:00, 2:30, 3:25, 9:55, etc.)



Procedure:
Present student with analog or digital representations.

What time does the clock show?

For the Analog clock: **Now can you write the time the clock shows?**

Check Student’s Response:	**Check student’s strategies**
1. Time: ________ Analog | Digital	
☐ Correct	☐ Used fingers to point at clock face
☐ Hour correct but not minute	☐ Counted out loud by fives around clock
☐ Confuses hour and minute	☐ Counted backwards from hour
☐ Incorrect _______________	☐ Said time without pointing or counting
☐ Correctly writes time	☐ Other:
☐ Incorrectly writes time ______________	
☐ Other:	
2. Time: ________ Analog | Digital	
☐ Correct	☐ Used fingers to point at clock face
☐ Hour correct but not minute	☐ Counted out loud by fives around clock
☐ Confuses hour and minute	☐ Counted backwards from hour
☐ Incorrect _______________	☐ Said time without pointing or counting
☐ Correctly writes time	☐ Other:
☐ Incorrectly writes time ______________	
☐ Other:	

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3. Time: ________ Analog | Digital	
☐ Correct	☐ Used fingers to point at clock face
☐ Hour correct but not minute	☐ Counted out loud by fives around clock
☐ Confuses hour and minute	☐ Counted backwards from hour
☐ Incorrect ______________	☐ Said time without pointing or counting
☐ Correctly writes time	☐ Other:
☐ Incorrectly writes time _____________	
☐ Other:	
4. Time: ________ Analog | Digital	
☐ Correct	☐ Used fingers to point at clock face
☐ Hour correct but not minute	☐ Counted out loud by fives around clock
☐ Confuses hour and minute	☐ Counted backwards from hour
☐ Incorrect ______________	☐ Said time without pointing or counting
☐ Correctly writes time	☐ Other:
☐ Incorrectly writes time _____________	
☐ Other:	
5. Time: ________ Analog | Digital	
☐ Correct	☐ Used fingers to point at clock face
☐ Hour correct but not minute	☐ Counted out loud by fives around clock
☐ Confuses hour and minute	☐ Counted backwards from hour
☐ Incorrect ______________	☐ Said time without pointing or counting
☐ Correctly writes time	☐ Other:
☐ Incorrectly writes time _____________	
☐ Other:	
Notes:	

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2.10B: The student is expected to read and write times shown on analog and digital clocks using five-minute increments.	**Possible interpretations, issues to follow up on, and implications for teaching**

This activity assesses students’ abilities to read and write time. The digital clock will likely present fewer problems for students as they need only to read the numbers. For the analog face, determining time in 5-minute increments is more difficult, especially for times other than the hour, half, and quarter hours. Observe the students’ strategies for determining the time.

- For students who **confuse the hours and minutes**, a teaching strategy might include working with analog faces that are on the hour and half hour so the students gain practice corresponding the small hand with the hour and the large hand with simple hour or half hour. Once they are more comfortable with recognizing what each hand represents, move on to quarter hours and then 5-minute increments. You can practice skip counting by fives to prepare them for work on the 5-minute increments.

- Pay attention to **how students write the time**, making sure they do not confuse the hours and minutes.

- Students who **correctly read and write the times** shown may be ready to work with times in minute increments or explore the “second hand.”

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(2.10) **Measurement.** The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit).	**2.10C:** The student is expected to describe activities that take approximately one second, one minute, and one hour.

Materials: None

Procedure:

Can you tell me something that might take only one second to do?
How about one minute?
And one hour?

Record Student's Response:

One second ____

One minute ____

One hour ____

Notes:

Texas Essential Knowledge and Skills for Mathematics “Rapid” Assessment: GRADE 2

2.10C: The student is expected to describe activities that take approximately one second, one minute, and one hour.	**Possible interpretations, issues to follow up on, and implications for teaching**

Student responses will give you an idea as to their understanding of time. Answers do not need to be exact, as these are estimations of time. But it should be clear that the activity provided by the student can reasonably be considered to be done in the time given. If it is not clear, ask for another example.

A teaching strategy is to provide concrete examples for the “one second” and “one minute” problems by using a clock or setting a timer to allow the student to experience the passing of time. For the “hour,” draw the student’s attention to the amount of time spent at lunch and recess or gym, if those times are close to one hour.

It is also possible to set a timer for one hour and have the student recall all that was done during the time that passed in between.

Finally, you can connect the conversation with the student to the school day. For example, “What do we do during the day from 9:00 to 10:00 a.m.?”