MEASUREMENT UNIT
GRADE 1

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FLA 518
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07/31/08
Introduction
Title: "Measurement"
Grade Level: First Grade
Target Group for Modifications: Mainstream class with integrated ELL students
Source of Written Reading Materials: (Read Alouds)
  • Leedy, Loreen; Measuring Penny; c1997 Henry Holt and Company LLC., 115 West 118th Street, New York, New York, 10011
  • Lionni, Leo; Inch By Inch, c1960 Harper Collins Publishers, Hong Kong
  • Student Response Journals (Teacher Created)
Source of Lessons: Lessons 1-3 are based on lessons supplied through:
  • Houghton-Mifflin Math; c2007, Houghton Mifflin Company; 222 Berkeley Street, Boston, MA. 02116
  • Lessons 4-6 are Teacher Created Lessons
Learning Goals:
  • I want my students to know how the concept of measurement is useful in their everyday lives.
  • I want my students to know the academic language that relates to the concept of measurement.
  • I want my students to know how to use math talk related to the concept of measurement to problem solve.
  • I want my students to know how to take what they've learned about measurement and apply these skills during our Measurement Olympics at the end of this thematic unit.
Note: This unit spans 5-6 days, however lesson plans for days 1-3 were included for the purpose of this assignment. Lessons for days 4-6 include:
  • students applying what they've learned about measurement through varied math stations
  • students measuring and designing a 5x7 inch ticket to use as an admission ticket/recording device for our Measurement Olympics
  • students participating in our Measurement Olympics. With this, the students throw the discus (frisbee), shotput (ball of yarn); javelin (pool noodle) and do the long jump. Working with a partner, the students measure and calculate their distances and record their findings on their admission ticket that they wear.
Lesson 1
**Lesson 1 Objectives**

**Content Objectives:**

1. The students will order, sort and compare items by length and height.

2. The students will write one sentence comparing two items from the T-chart and incorporate new vocabulary.

**Language Objectives:**

1. The students will individually create a T-chart with at least 10 objects from the classroom that are taller/shorter than own body.

2. The students will write two sentences comparing items from the T-chart.

<table>
<thead>
<tr>
<th>Domain-Topic</th>
<th>Nearly Fluent</th>
<th>Intermediate</th>
<th>Speech Emergent</th>
<th>Early Production</th>
<th>Pre-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing:</td>
<td>Individually, create a T-chart with at least 10 items from the classroom that are taller/shorter than own body. Students will write two sentences comparing items from the T-chart.</td>
<td>With a partner, create a T-chart with at least 10 items in the classroom that are taller/shorter than own body. Students will write two sentences comparing two items from the T-chart using the modeled sample as a guide.</td>
<td>With a partner, create a T-chart with at least 10 items in the classroom that are taller/shorter than own body. Students will write two sentences comparing two items from the T-chart using sentence starters.</td>
<td>With a partner, create a T-chart with at least 10 items in the classroom that are taller/shorter than own body. Students will complete two CLOZE-type sentences comparing two items with added support from me.</td>
<td>Individually, label at least 10 items in the classroom that are taller/shorter than own body using pre-made taller/shorter word cards.</td>
</tr>
</tbody>
</table>
### Functional Chart

<table>
<thead>
<tr>
<th>Function</th>
<th>Situation</th>
<th>Expressions</th>
<th>Vocabulary</th>
<th>Grammar</th>
</tr>
</thead>
<tbody>
<tr>
<td>compare, sort</td>
<td>lengths of objects</td>
<td>I am _______ than _______.</td>
<td>longer, height, length</td>
<td>nouns, adjectives</td>
</tr>
</tbody>
</table>

- taller
- shorter
- chair
- desk
- window
- my friend, ___
- door
- table
- computers
- (answers will vary)
LESSON PLAN: DAY 1

OBJECTIVE: The students will be able to order, sort and compare objects by length and height.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure.

GLE 9: Students will use nonstandard units, references or direct comparison of objects (appearance) to order objects by length, area and capacity.

TIME: 70 minute block

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: As part of the Houghton Mifflin Math program, all students are required to take a pretest prior to introducing a new concept. With this, students took a pretest to check what they already know about the concept of measurement. The pretest consisted of: measuring a crayon and a stick with a paper clip; determining which item is longer/shorter (strawberry/banana); estimate and then measure using an inch ruler. (Based on this pre-assessment, it was determined that 0/21 students were able to accurately measure using a non-standard unit of measure.)

VOCABULARY: height, length, longer, taller, shorter

MATERIALS/RESOURCES: blank transparency, overhead, paperclip, ruler

INITIATION (WHOLE CLASS): (CREATING A SHARED HISTORY/VISUALS/REALIA)
(15 minutes) Write and state the objective, “Today, you will learn that you can sort things by length and by height.”

INTRODUCE/MODEL VOCAB:

Write/say the word length/definition on chart paper: “Length: How long something is.” (Vocabulary Map) (see page 9 in lesson plan)

- LENGTH: Hold up a ruler, horizontally. Point and say, “This is a (2) ruler.” While running finger down the length of the ruler, say, “This is the length (2) of the ruler.” (Repeat this same procedure of demonstrating length using a crayon.)

- LONGER: Compare the crayon and the ruler. Have two students come up and hold each object. Run your finger down the ruler and then the crayon. While doing this say, “The ruler is longer (2) than the crayon. The word longer (2)
describes the length of the ruler. Let’s add that word to our Vocabulary Map.” (Connect it with an arrow to the word length.) “This word will help us remember (2) (point to your head with fingers) what length means.”

- SHORTER: Repeat the same process (and gesturing) as you did introducing length earlier in lesson, but this time use a crayon and enunciate/introduce the word, “shorter.” Add the word “shorter” to the vocab. map. Ask, “Why do you think (2) that I connected the word longer and the word shorter to the word, length? (Field responses: “We can use both of these words to describe the length of something.”)

- HEIGHT: Introduce the word height by having two students who are not the same height stand up. State that when an object looks like it’s laying down, it is called length but when it looks like it’s standing up, we call this height. (gesture) Write the word height in a square on the same vocab. map. (Use the same procedure and body language that you did introducing the word length.)

- TALLER/SHORTER: Compare the two students: Say, “_______ is taller than _______. _______ is shorter than _______.” Add the words taller/shorter to the vocab. map connecting each of these words to the word height. Follow the same questioning procedure as you did when you connected the words longer/shorter to the word length. Explain to the students that they will be using the words taller and shorter for our lesson today.

STUDENTS TRANSITION TO FLOOR

PROCEDURE: (15 MINUTES) (USE OF REALIA)

Once on the floor, restate purpose: “You will be using the words (2) taller (2) and shorter for our lesson today. If you get stuck (2) and can’t remember what these words mean, (2) where in the room can you look for help?“ (The Vocabulary Map) (Go over to the vocab. map and point to these words.)

MODEL: Compare the size of the whiteboard to your own body. (Use gestures and think aloud) “Let’s see, am I taller (2) or shorter than the whiteboard?” Gesture as though you are thinking (tapping pointer on chin) and then say, “Yes, I am taller than the whiteboard (2) so that is what I’ll write.” Read along as you write, “I am taller than the whiteboard.” (Will be used later by students as a Sample Guide) “You will be using real objects (2) from our classroom to measure (2) and decide if they are taller (2) or shorter than you.”

(See pages 10-14 for the actual modified student work pages that the students will use that address all language proficiency levels.)
ON YOUR OWN: (30 minutes) (USE OF REALIA)

Students will move about the room and work either independently or with a partner to create a T-chart using at least 10 items from the classroom that are taller/shorter than their own bodies. Then they will write/communicate/demonstrate at least one sentence comparing items from the T-chart. (see pages 10-14 of lesson plan)

Rotate amongst the students as they work to facilitate discourse through instructional conversations. Pull from the following questions:

- For students in the Pre-Production Stage, ask, “Go and touch something shorter than you…”
- For students in the beginning Early Production Stage, ask, “Is the desk or the window shorter than you?”
- For those students in the Speech Emergence Stage, ask, “Tell me about something in the room that is shorter/longer than you.”
- For those students in the Intermediate Stage, ask, “Tell me which object is shorter than you, the desk or the window. Why?”

Respond to each student by echoing/paraphrasing their response. For example, “You think that…

The ____________ is shorter than ____________.
The ____________ is taller than ____________.

Students transition from moving about the room back to the floor

CLOSURE/REFLECTION: (10 minutes) (STUDENTS NEGOTIATE MEANING)

“Move it!” Activity: Choose two students to come up to the front of the class (make sure that they are not the same height). Students orally respond to, “Who can tell me (2) something that they notice (2) about Mary and John’s height?”

__________ is shorter than ____________.
__________ is taller than ____________.

If students in the audience agree, they respond by giving a thumbs up; if they disagree, they show a thumbs down and if they’re not sure they lay their thumbs to the side. This activity allows those students who don’t have English proficiency yet the opportunity to express themselves clearly.

Close by saying, “Tell me (2) or show me (2) something that you learned today.” (field responses) Paraphrase responses: “Today, you learned that you can sort things by their length and height. Can anyone remind me of where we can look in the classroom (2) if we forget what these words mean?” (Students will be able to reference
the vocabulary map that we made during the initiation of this lesson. It will be hung on the math word wall for students to access as needed.

"Tomorrow, we will be learning how to estimate or guess the actual length of objects."

ASSESSMENT: Assessment will be done through anecdotal recordings, student work samples, and through student/student and teacher/student discourse. Those students who I observe are struggling with this concept will work in a small work group with me in the morning on re-teaching this concept.

REFLECTION:
Lesson Narrative
The modifications that I made within my lesson plan are those that made the lesson more comprehensible to the English Language Learners in my classroom. The “Move it!” activity allows for those students who aren’t yet proficient in English, to express themselves clearly by using hand gestures in order to express themselves. This is especially powerful for those students who are still in the early/pre-production stages of language acquisition.

In the pre-production stage, second language learners have limited comprehension of oral and written English. With this, teachers need to provide an abundance of listening opportunities and use physical gestures along with movements to convey meaning. These strategies were implemented throughout my lesson; this allowed me the opportunities to effectively monitor the progress of my English Language Learners in order to make decisions as to how I proceed with the next lesson. More importantly, these strategies also make the content comprehensible for those students who are not yet proficient in English.

With students who are second language learners, it is important to vary the questioning prompts that are used in the classroom. These prompts should be based on the different levels of language acquisition in the classroom. I used prompts that I felt elicited responses that are sensitive to the students’ English language proficiency levels. Examples are:

- **Pre-Production Stage**, ask, “Go and touch something shorter than you…”
- **Early Production Stage**, ask, “Is the desk or the window shorter than you?”
- **Speech Emergence Stage**, ask, “Tell me about something in the room that is shorter/longer than you.”
- **Early Intermediate Stage**, ask, “Tell me which object is shorter than you, the desk or the window. Why?”
The graphic depiction of a text benefits English Language Learners. Using visual displays, within the context of facilitating the lesson, is an effective way of doing just this. For example, the T-chart is a graphic organizer that I implemented to help students classify information. The students are able to work together and brainstorm what they can find out about height and length, classify their thoughts and explain/show their rationale for classifying the information in that particular way. The vocabulary map also suited this purpose.

Language proficiency level cannot be confused with a student's knowledge of the content. Their language skills may restrict expression of actual understanding of the subject matter. (Echeverria and Graves, 139) Modifying assignments is one adaptation that the teacher can do to adjust the curriculum to satisfy the needs of his/her English Language Learners. Evidence of this type of modification within the lesson is the writing component of the t-chart activity. (see lesson plan work samples)

Lastly, creating opportunities for meaningful interaction between the students can be found throughout the instructional conversations embedded within the lesson. Instructional conversations provide a forum for students to think, reflect and express ideas as they develop an understanding around a concept. These experiences allowed the students an opportunity to negotiate meaning and share their background knowledge.
NEW CONTENT
PRETEST
To be Administered Prior to this Lesson
Check What You Know

Use the unit to measure the length. Write the measure.

1. [Image of crayon]
   about ______ inches

2. [Image of pencil]
   about ______ inches

Circle the word.
Is the object longer or shorter than your hand?

3. [Image of strawberry]
   longer    shorter

4. [Image of banana]
   longer    shorter

Estimate. Then measure.

5. Use an inch ruler.
   Find the height.
   [Image of doghouse]
   Estimate: about ______ inches
   Measure: ______ inches

This New Content Pretest is part of the Houghton Mifflin program and is administered at least one day prior to the introduction of this unit. It is used as one assessment tool to determine the direction of the unit.

This is administered using the overhead projector. I read the text aloud, repeat phrases and use gesturing (body language). Students also have access to manipulatives, as needed. Those students at the pre-productive/early productive stage are offered the opportunity to point to their answer.
Vocabulary Map
LESSON 1

VOCABULARY MAPPING: ESTABLISHING A SHARED HISTORY

Length: How long something is.

Height: How tall something is.

taller    shorter

longer    shorter
Modified Student Work Samples
Pre-Production Stage

Find at least 10 items in the classroom that are taller/shorter than you and label them using tape.

Cut and tape as labels:

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<table>
<thead>
<tr>
<th>taller</th>
<th>shorter</th>
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Name: ___________________________  Name: ___________________________

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Name: ___________________________  Name: ___________________________

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Name: ___________________________  Name: ___________________________

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<table>
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Name: ___________________________  Name: ___________________________
T-CHART STRATEGY TO ASSIST STUDENTS IN CLASSIFYING INFORMATION:

Find and draw at least 10 items within the classroom and decide if those items are taller or shorter than you.

<table>
<thead>
<tr>
<th>Taller Than I Am</th>
<th>Shorter Than I Am</th>
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</table>

Write two (2) sentences comparing two (2) items from your T-chart to yourself. Use the sentence starters to help you:

1. I am taller \[\quad\] than the ________________________________

2. I am shorter \[\quad\] than the ________________________________
T-CHART STRATEGY TO ASSIST STUDENTS IN CLASSIFYING INFORMATION:

Find at least 10 items within the classroom and decide if those items are taller or shorter than you.

<table>
<thead>
<tr>
<th>Taller Than I Am</th>
<th>Shorter Than I Am</th>
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<td>6.</td>
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</tbody>
</table>

Write one (2) sentences comparing two (2) items from your T-chart. Use the sentence starters to help you:

- ________ is taller than ________.
- ________ is shorter than ________.

1. ________________________________________________

2. ________________________________________________
T-CHART STRATEGY TO ASSIST STUDENTS IN CLASSIFYING INFORMATION:

Find at least 10 items within the classroom and decide if those items are taller or shorter than you.

<table>
<thead>
<tr>
<th>Taller Than I Am</th>
<th>Shorter Than I Am</th>
</tr>
</thead>
<tbody>
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<td>1. ___</td>
<td>1. ___</td>
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<td>5. ___</td>
<td>5. ___</td>
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<tr>
<td>6. ___</td>
<td>6. ___</td>
</tr>
</tbody>
</table>

Write one (2) sentences comparing two (2) items from your T-chart. Use the example to help you:

The door is taller than I am.

I am shorter than the window.

1. ___

2. ___
**T-Chart Strategy to Assist Students in Classifying Information:**

Find at least 10 items within the classroom and decide if those items are taller or shorter than you.

<table>
<thead>
<tr>
<th>Taller Than I Am</th>
<th>Shorter Than I Am</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>9.</td>
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<td>10.</td>
<td>10.</td>
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</tbody>
</table>

Write two sentences comparing items from your T-chart:

1. ____________________________________________

2. ____________________________________________
Lesson 2
Lesson 2 Objectives

Content Objective:
1. The students will predict and estimate lengths using non-standard units while rotating through math stations.
2. The students will be able to use the vocabulary words accurately while discussing their observations.

Language Objective:
1. Individually, students will record their predictions and actual estimates while measuring items from the classroom.
2. The students will use the terms estimate and about within their justifications for all of the items.

<table>
<thead>
<tr>
<th>Domain-Topic</th>
<th>Nearly Fluent</th>
<th>Intermediate</th>
<th>Speech Emergent</th>
<th>Early Production</th>
<th>Pre-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing/Listening: predict/estimate lengths</td>
<td>Individually, students will record (in their math journal) their predictions and actual estimates while measuring items from the classroom. The students will use the terms estimate and about within their written justifications for all of the items.</td>
<td>With a partner, students will record (in their math journal) their predictions and actual estimates while measuring items from the classroom. The students will use the terms estimate and about within their written justifications for all of the items. A word bank will be accessible.</td>
<td>Students will record their predictions and actual estimates (with a partner) while measuring items from the classroom. The students will use the terms estimate and about within their written justifications for all of the items using pre-made sentence strips as a guide. A word/picture bank will be accessible.</td>
<td>Students will record their predictions and actual estimates (with me in a small group) while measuring items from the classroom. The students will use the terms estimate and about within their written justifications using sentence strips, word/picture cards and number cards.</td>
<td>Students will classify their predictions and actual estimates (with me in a small group) while measuring items from the classroom. The students will use &quot;I think&quot; and &quot;I found out&quot; headers, picture cards/labels and number cards as a written means of demonstrating understanding.</td>
</tr>
<tr>
<td>Function</td>
<td>Situation</td>
<td>Expressions</td>
<td>Vocabulary</td>
<td>Grammar</td>
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<tr>
<td>predict, estimate</td>
<td>length using non-standard units</td>
<td>I estimate that a ________ measures about ________ units.</td>
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<td>I found out that a ________ measures about ________ units.</td>
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<td>I think that it will measure ________ units.</td>
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<td></td>
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<td>I found out that it measured about ________ units.</td>
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<td>paintbrush lunchbox ruler marker crayon box scissors</td>
<td>nouns verbs comparisons</td>
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<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
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</table>
LESSON PLAN: DAY 2

OBJECTIVE: The students will be able to predict and estimate lengths using non-standard units.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure

GLE 9: Students will use nonstandard units, references or direct comparison of objects (appearance) to order objects by length, area and capacity.

TIME: 60 minutes

NOTE: This lesson was adapted/modified from the Houghton-Mifflin Math Program, pages 501-502.

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: From my observations, I will conduct a mini-lesson (during our Morning WARM UP work time) with those students who had confusion applying the vocabulary words yesterday.

- MINI-LESSON: (10 minutes) OBJECTIVE: Students will have a better understanding of the vocab. words introduced in yesterday's lesson (taller and shorter, specifically). I will start by having the students compare the sizes of their feet, of each other’s height and lastly, compare the size of each one of them, to me. To do this, students need to use both of the vocab. words in a sentence. I will write a sentence starter on a small whiteboard for the students to use as a resource. I will model my expectations for each student.

  __________ is shorter/taller than __________.

- I will also facilitate an activity during morning meeting where the students will choose another student to greet and then tell that student whether s/he is taller/shorter than the person s/he is greeting.

LESSON 2 INITIATION:

MATERIALS/RESOURCES: paper clips, paintbrush, new crayon, “Measuring Penny,” by Loreen Leedy

INITIATION (WHOLE CLASS): (CREATING A SHARED HISTORY/VISUALS)
(15 Minutes) Write and state the objective on the whiteboard. “Today, (2) you will learn that you can predict (2) and estimate (2) the length of objects using nonstandard units.”

- Explain to the students that the word, predict means to guess. Connect this to the students’ prior knowledge by making a comparison to what it means to predict before reading a story. Say, “Predicting (2) before we measure (2) is the same as (2) predicting before we read. Instead of guessing what a story might be about, (2) we will be guessing (2) or predicting (2) the length of an object.”
• BUILDING BACKGROUND: “Surprise Book” The book, “Measuring Penny,” will be wrapped in paper so that the students are not able to see the cover. (SHOW BOOK) Explain to the students that the book will be passed around, and that they will slowly unwrap the book, taking off only small pieces of paper at a time. (Model this process, being very detailed as to what this should look like and sound like. Place finger to lips to show how quietly we tear off pieces of paper.) As the book is being passed, stop every 2-3 students and ask the students to make predictions about what they think the story will be about using only what they can see so far. Model response: “I think (2) that this book will be about ________.” (Field and chart responses) (See page 15.)

**Note regarding read-aloud: Only certain sections of the story will be shared at this time and will be paraphrased. (see pages 5-14) I’ve only included those sections of the story that I plan on sharing with the students. The other sections are not appropriate for this lesson.

While reading, hold up and point to actual examples of the nonstandard units that the girl is measuring with (photos of a couch and television set and actual examples of a doll, dog biscuit and cotton swab). (see page 16 in lesson plan)

On page 2, change the word “sofa” to “couch.” After reading “Television set,” say, “Sometimes (2) we call a television set (2) a T.V.” (hold up example)
On page 6, after reading this page, mention that the students will be using a ruler (point to illustration on page) to measure with tomorrow. (hold up example)
On page 8, after reading, “I’ll measure your ears (2) with another nonstandard unit, cotton swabs.” Say, “Sometimes (2) we call cotton swabs, (2) Q-tips.” (hold up example)
On page 9, after reading, “I could (2) use myself to measure with…” Tell the students that they will be using objects in the classroom to measure things with, just like the girl in the story.

• Now revisit the prediction chart that they students generated prior to reading. Ask them to generate a list of some of the things that the girl in the story measured with. (Field and chart responses)

INTRODUCE LESSON VOCABULARY: measure, unit, estimate (CREATING SHARED HISTORY, VISUALS)
• Introduce/ tape vocabulary word cards onto the whiteboard. (These words will be added to the Math Word Wall. See page 17.)
• Close the initiation by restating purpose: “Today, (2) just like the girl in Measuring Penny, (2) you will be using (2) things from our classroom (2) to measure with. You will be using (2) paperclips (2) (hold up) and unifix cubes (hold up). Let’s add these two things to our list.”

Students transition back to their seats while I move to the overhead.

PROCEDURE: (15 minutes) (VISUALS, REALIA, NEGOTIATE MEANING)
• Model: place a paintbrush horizontally on the overhead. Say, “You can measure (2) the length of the paintbrush (2) using paper clips (2) as a unit of measure. Who can help me remember (2) (point to/tap on head) what the word length means? (activating background knowledge) Gee, I can’t remember (2) where I can look for help.” Gesture to show that
you're confused. (WAIT) Hopefully, some/most students will remember that they can use the vocabulary map that they generated yesterday and hung on the math wall for accessibility.

- Say, “Can anyone estimate (2) or guess (2) about how many paper clips (2) it will take to go the length (2) (show paintbrush and run finger down the length of it) of the paintbrush? Now remember, to estimate (2) means to take a guess (2) without checking first.” (WAIT) Field responses and jot down the estimates on the overhead transparency. Model the process of placing the paperclips end to end to find the length while thinking aloud, “As I measure, I make sure (2) that my units are touching (2) end to end...that means (2) one end of the paper clip (point) (2) must touch the end (point) of the next.” STOP before reaching the end of the paintbrush and have a volunteer come up and count as s/he finishes placing the clips.

- Ask, “About how many paper clips long (2) is the paintbrush? **About how many (2) are the words we use (2) when we are estimating.**” Write/State: About _____ paper clips. Go back to student predictions and ask, “Which estimate (2) was closest to our actual measurement?” Go back to the paintbrush and slowly and clearly count off/point to the each paper clip as you count off the estimated length.

- Keep the paperclips lined up along the paintbrush. Repeat this process using unifix cubes as the non-standard unit of measure. First, have students predict whether or not you will need more or fewer unifix cubes than paperclips to measure the paintbrush. Ask, “Who can predict for me, (2) will I need to use more (2) or fewer (2) unifix cubes to measure the length (2) of the paintbrush than I did paperclips?” “Remember, we’ve used the words *more* and *fewer* (2) to solve story problems. Check the word wall (2) if you need help remembering what more and fewer mean. (Gesture: for “more”, spread arms far apart, for fewer, show a small space between thumb and forefinger.) Field responses (chart on overhead).

- Model the expression that is expected within the lesson by writing it on the overhead. Write and say:

```
"I estimate (2) that a paintbrush measures (2) about _______ units."
"I found out (2) that a paintbrush measured (2) about _______ units."
```

(See pages 19-23 for the actual modified work samples that the students will use to address all language proficiency levels.)

**ON YOUR OWN:** (30 minutes) (VISUALS, REALIA, NEGOTIATE MEANING) Re-state and point to today’s lesson objective: “Today, you’ve learned that (2) you can estimate (2) the length of objects (2) using nonstandard units. You will now break off (2) and rotate through math stations to measure a ruler, a lunch pack, a marker, a crayon pack and a pair of scissors. (Show actual items/photos that the students will be measuring. See page 18 in this lesson plan.) Each work group contains students of mixed language ability.

Remind students that as they estimate, it is important that they say their estimate or guess before they actually measure and then say what they found out after they measure. Write/State on the whiteboard/model what you are expecting them to say:

```
"I estimate that a ________ measures about ________ units."
"I found out that a ________ measures about ________ units."
```
SMALL GROUP WORK: (early and pre-production students)

As students are working, I pull a small group aside and work on using the vocabulary within the context of measuring the items. Some students will use a sentence strip that reads, "I estimate that a _____ measures about _____ units." (See page 20.) They also have word/picture cards and number cards to use. (see page 20a.) First, they estimate and then choose the picture and number that best fits their estimate. Once that is complete, I will model the process of reading their sentence strip with them emphasizing the words estimate and about.

After estimating, they do an actual measurement and change their sentence strip accordingly to reflect actual measurement. Students are asked to express what they've noticed using the expression that has also been written on a sentence strip: "I found out that a ______ measures about _____ units." (See page 20)

Other students will use the T-chart on pages 19-19a to classify their findings. Text has been modified in that they will be using the expression, "I think that it will measure _____ units. I found out that it measured _____ units."

Rotate amongst the students as they work to facilitate discourse through instructional conversations. Pull from the following questions:

- For students in the Pre-Production Stage, ask, "Point to the object (2) where you used the most (gesture with arms) units (2) to measure."
- For students in the beginning Early Production Stage, ask, "Did you use (2) more paper clips (point) (2) or unifix cubes (2) (point) to measure the ruler (point)?"
- For those students in the Speech Emergence Stage, ask, "Tell me (2) with which object (2) did you use the least (smallest) amount (2) of unifix cubes?"
- For those students in the Intermediate Stage, ask, "Tell me (2) why do you think (2) that it took _____ unifix cubes (2) and only _____ paper clips (2) to measure the marker?"

Respond to each student by echoing/paraphrasing their response. For example, "You think that... "it took _____ unifix cubes and _____ paper clips to measure the marker because ____."  

CLOSURE/REFLECTION: (whole class on the floor) (INSTRUCTIONAL CONVERSATIONS)

Students bring their measurement sheets to the floor to talk about what they’ve noticed. Once students are on the floor, tell them that it is time for math talk. "Tell (2) or show me about (2) something that you noticed (2) when you measured today." (field responses)

Say, "Today, you learned (2) that you can estimate (2) how long objects are." Tomorrow, you be doing some more estimating (2) and then actually checking your guesses (2) using a ruler."

ASSESSMENT: Assessment will be done through anecdotal recordings, student work samples, and through student/student and teacher/student discourse. Those students who I observe are struggling with this concept will work in a small work group with me during our morning WARM UP word time on re-teaching this concept.
LESSON NARRATIVE
The modifications that I made within my lesson plan are those that made the lesson more comprehensible to the English Language Learners in my classroom. Starting with the Surprise Book Activity stimulated the students' background knowledge, while at the same time, peaking their curiosity through the element of surprise. Piece by piece, we used the ideas that were generated by the students and by the end of this process, the students realized the direction that the class was headed with the next lesson.

As I read the story, "Measuring Penny," I paraphrased. Paraphrasing is another strategy that can be used to increase comprehensibility. It also activates student background knowledge as added an mean of increasing the overall comprehensibility of the lesson. Using connections and associations from the lives of students, actively brings them to the task at hand and also validates their own life experiences. This is crucial for English Language Learners.

As I read the story, and throughout the discourse of the lesson, I was prudent in reducing my rate of speech and I also paid specific attention to the pronunciation of my words. This is evident throughout my lesson by using indicators marked with a (2). This (2) indicates a 2 second pause adjusting my rate of speech. This makes content that may be challenging more understandable for English Language Learners.

Through implementing instructional conversations, students and teachers are able to jointly reach new levels of understanding regarding a concept or skill. With instructional conversations, no one person is dominating the discussion. Within the discourse embedded in this lesson, I was able to encourage more extended student contributions by using a variety of elicitation techniques that were appropriate for all levels of language. Examples of this type of discourse are when I asked prompting questions such as, "Point to..." or "Tell me...".

I used repeated, short, explicit segments within the lesson to introduce new vocabulary. A student cannot comprehend content without having knowledge of the
vocabulary that is critical to the lesson. To do just this, I introduced the vocabulary, wrote it on the whiteboard, defined the word and used demonstrations, examples and think alouds that were relevant to the students. Using strategies as such to introduce vocabulary allows all students to have the opportunities necessary to comprehend content.

Lastly, another strategy that I used throughout my lesson was gesturing. Being in a mainstream classroom with English Language Learners, I find myself relying on this strategy a lot to express myself clearly and effectively. This is especially powerful for those students who are still in the early/pre-production stages of language acquisition.
My name is Lisa, and my teacher says our next big homework project is to measure something.
Mr. Jayson says we can measure anything—like a sofa, a television set, or a doll.

Measuring Homework (due next Tuesday!)

1) Choose something to measure.
2) Measure it in as many ways as you can: height, width, length, weight, volume, temperature, time.
3) Record your results.
4) Include at least one comparison: "It is taller than..." or "heavier than..."

Remember, a measurement always has two parts:
1) A number
2) A unit
"I am 6 feet tall."
Which units can you use? (Here are some examples.)

Standard Units
inches, feet, yards, centimeters, meters, teaspoons, cups, gallons, pounds, minutes, etc.

Nonstandard Units
paper clips, bricks, frogs, marbles, pencils, toes, etc.

USE YOUR IMAGINATION!
When I got home today, my dog Penny, jumped all over me as usual. Wow, I could measure Penny for my homework! She is a Boston terrier, and is bigger than a pug and smaller than a cocker spaniel. She's about the size of a Shetland sheepdog.

(Penny, please stop drooling.)
Come on, Penny, I'll get a ruler and we'll run over to the park.

Look at all the dogs out here today . . . hey, get down!
I can't believe how many dogs live around here. Fine, I'll measure some of you, too. We're supposed to use a standard unit, so let me use inches to see how long your noses are . . . stop licking my face!

4 inches
Shetland Sheepdog

1 inch
Penny

1/2 inch
Pug

Penny's Measurements
Nose:
Length = 1 inch
Unit: inch

Tail:
Length = 1 dog biscuit
Unit: dog biscuit
I'll measure your tails with a nonstandard unit—dog biscuits! Will you please hold still? Penny has the shortest tail.
I'll measure your ears with another nonstandard unit, cotton swabs. Don't wiggle so much!
Let's see how high you can jump. Penny can jump up to my waist! I could use *myself* to measure with...
Penny's Jump: As high as my waist. Unit: ME!
VISUALS

GRAPHIC ORGANIZERS

WORD WALL WORDS
This is written on chart paper and serves as a graphic organizer to record student predictions and confirmations.

"THE SURPRISE BOOK"

I think that this book might be about...

I found out that this book is really about...
VISUALS FOR STUDENTS TO ACCESS DURING THE READ ALOUD:

- couch
- television set
- doll
- T.V.
- cotton swab
- dog biscuit
- Q-Tip
WORD WALL WORDS

These words are added to our word wall after they are introduced during the initiation of the lesson:

estimate (or about)  measure: to find out how big something is

unit: what you’re measuring with
Visual Cues to be used as a resource for all students during the "On Your Own" portion of the lesson:

**PICTURE/WORD CARDS**

- lunchbox
- ruler
- marker
- crayon box
- scissors
MODIFIED
STUDENT WORK
SAMPLES
**T-CHART STRATEGY TO ASSIST STUDENTS IN CLASSIFICATION**

Cut and glue picture cards onto each section of the "I think that" column and then write a prediction. Next, measure using unifix cubes and write the measurement that you actually found out.

<table>
<thead>
<tr>
<th>I Think That</th>
<th>I Found Out That</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I found out that</td>
</tr>
<tr>
<td></td>
<td>it measured</td>
</tr>
<tr>
<td></td>
<td>about _____ units.</td>
</tr>
<tr>
<td></td>
<td>it will measure</td>
</tr>
<tr>
<td></td>
<td>_____ units.</td>
</tr>
<tr>
<td></td>
<td>I found out that</td>
</tr>
<tr>
<td></td>
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</tr>
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<tr>
<td></td>
<td>_____ units.</td>
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<td></td>
<td>about _____ units.</td>
</tr>
<tr>
<td></td>
<td>it will measure</td>
</tr>
<tr>
<td></td>
<td>_____ units.</td>
</tr>
</tbody>
</table>
### Picture/Word Cards and Numbers Cards to Assist Students in Classifying Information

<table>
<thead>
<tr>
<th>Lunchpack</th>
<th>Ruler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marker</td>
<td>Crayon Box</td>
</tr>
<tr>
<td>Scissors</td>
<td></td>
</tr>
</tbody>
</table>

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
SENTENCE STRIPS TO SUPPORT STUDENTS WITH JUSTIFYING THEIR ESTIMATIONS

I estimate that a _________ measures about ___ units.

use picture card to help you write the word

I found out that a _________ measures about ___ units.

use picture card to help you write the word
PICTURE/WORD CARDS

lunchbox
ruler
marker
crayon box
scissors
SENTENCE STRIPS TO SUPPORT STUDENTS WITH JUSTIFYING THEIR ESTIMATIONS

I estimate that a ___________ measures about ___ units.

I found out that a ___________ measures about ___ units.

WORD BANK

- ruler
- lunch pack
- marker
- crayon box
- pair of scissors
In your journal write down your estimation and actual measurements as you measure items from our classroom. You will be measuring a ruler, lunchpack, marker, crayon box and pair of scissors.

**WORD BANK**

ruler lunchpack marker crayon box pair of scissors

estimate measures units

I estimate that ____________________.

I found out that ____________________.
In your journal write down your estimations and actual measurements as you measure items from our classroom. You will be measuring a ruler, lunchpack, marker, crayon box and pair of scissors.

**WORD BANK**

estimate

found out
Lesson 3
Lesson 3 Objectives

**Content Objectives:**

1. The students will measure an object in inches using a ruler.

**Language Objectives:**

1. The students will individually measure items to the nearest inch and communicate their findings accurately (to me) using the words measure and inch.

<table>
<thead>
<tr>
<th>Domain-Topic</th>
<th>Nearly Fluent</th>
<th>Intermediate</th>
<th>Speech Emergent</th>
<th>Early Production</th>
<th>Pre-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking:</td>
<td>The students individually measure 5 items to the nearest inch and communicate (to me) their findings accurately using the words measure and inch within their justifications using conversation/sentence starters as a guide.</td>
<td>The students will measure 5 items to the nearest inch (with a partner) and communicate their findings accurately using the words measure and inch within their justifications using a word bank and conversation/sentence starters as a guide.</td>
<td>The students will measure 5 items to the nearest inch (with a partner) and communicate their findings accurately using the words measure and inch within their justifications using a pre-made sentence strip and a word bank as a guide.</td>
<td>The students will measure 5 items to the nearest inch (with me in a small group) and use the words measure and inch within their justifications using sentence strips, word cards and number cards. Students will communicate thoughts through responding to the prompt, “Is the lunch pack shorter or longer than the marker?”</td>
<td>The students will measure 5 items to the nearest inch (with me in a small group) and use the words measure and inch within the context of matching pictures to the actual measurement card. Students will communicate thoughts through responding to the prompt, “Point to the object that measured the shortest.”</td>
</tr>
</tbody>
</table>
Lesson 3 Objectives

Content Objectives:

2. The students will interpret and write at least one thing that the inchworm measured in the story.

Language Objectives:

2. The students will write at least two sentences describing the things that the inchworm measured in the story.

<table>
<thead>
<tr>
<th>Domain-Topic</th>
<th>Nearly Fluent</th>
<th>Intermediate</th>
<th>Speech Emergent</th>
<th>Early Production</th>
<th>Pre-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening/Writing:</td>
<td>In their journals, students will write at least two sentences describing the things that the inchworm measured in the story. Students will have access to a word bank.</td>
<td>In their journals, students will write and illustrate at least one sentence describing something that the inchworm measured in the story. Students will be able to access a word bank.</td>
<td>In their journals, students will write two sentences describing the things that the inchworm measured in the story using a pre-made sentence strip and modified story picture cards as a guide.</td>
<td>In their journals, students will use a sentence starter and story picture cards to write about two things that the inchworm measured in the story using story picture/word cards.</td>
<td>In their journals, students will use their story picture/word cards to draw and label two things that the inchworm measured in the story.</td>
</tr>
<tr>
<td>Function</td>
<td>Situation</td>
<td>Expressions</td>
<td>Vocabulary</td>
<td>Grammar</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
</tr>
</tbody>
</table>
| interpret  | things that the inchworm is measuring | The inchworm measured ____.                   | the robin’s tail  
the neck of the flamingo  
the toucan’s beak  
the legs of the heron  
the tail of the pheasant  
the whole hummingbird  
the song of the bird | nouns  
verbs |
| measure    | in inches                         | I estimate that a ____ measures about ____ inches. | estimate  
measures  
inches  
ruler | Lunchpack  
Ruler  
Crayon Box  
Marker  
Pair of Scissors |
OBJECTIVE: The students will be able to measure an object in inches using a ruler.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure

GLE 10: Students will explore using standard units of measure (inch and centimeter) to communicate measurement in a universal manner.

TIME: 60 minutes

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: From my observations throughout yesterday’s lesson, I will facilitate a mini-lesson for those students who exhibited confusion. We will meet during our morning WARM UP work time.

MINI-LESSON: (10 minutes) My objective for this mini-lesson is to have the students have more success at using at least two of the measurement words that we have introduced thus far. (taller, shorter, about ___ long, about ____ tall)

LESSON 3 INITIATION:

NOTE: This lesson was adapted/modified from the Houghton Mifflin Math Program pages 503-504.

VOCABULARY: inches, ruler

MATERIALS/RESOURCES: ruler transparency, “Inch By Inch,” by Leo Lionni

INITIATION (WHOLE CLASS): Write and state the objective on the whiteboard, “Today, you will be able to measure an object in inches using a ruler.”

INTRODUCE and tape vocabulary word cards onto the whiteboard. This vocab. gets transferred onto our word wall after the completion of this lesson for the students to access as needed (page 21.)

SHARED HISTORY/BACKGROUND KNOWLEDGE: Read, “Inch by Inch” by Leo Lionni. (pages 5-19) Ask, “With a title like, (2) “Inch by Inch,” what do you think (2) this story will be about? (field and chart responses…) (see page 20) Let’s read to find out.” (Directed Reading-Thinking Activity)

State purpose: “Today, I am going to read you a story (2) about an inchworm (2) who tries to keep (2) from being eaten (2) by measuring all sorts of things around it.
As I read, see if you can remember (2)(gesture) what the inchworm is measuring (2) as it tries to get away from the bird."

Stop periodically throughout the story and elicit responses as to the things that the inchworm is measuring. (Jot down on chart paper) After the story is read, revisit some of the predictions made prior to reading.

The students use their journals to response to the following prompt:" The inchworm measured __________." Modified work samples that address the varied levels of language proficiency may be found on pages 22-26 in this lesson plan:

- **Nearly fluent** students are expected to write two sentences
- **Intermediate** students will write and illustrate one sentence describing something that the inchworm measured.
- **Speech Emergent** students will write two sentences describing the things that the inchworm measured using a pre-made sentence strip as a guide.
- **Early Production** students will use a sentence starter and story picture cards to write two sentences about something that the inchworm measured in the story.
- **Pre-Production** students will use their story picture/word cards to draw and label two things that the inchworm measured in the story.

To make the students’ written journal responses more meaningful or interactive, it is important that you read and respond (orally and/or written).

When finished, say, “Just like the inchworm measured all sorts of things around it (2) using its one inch body, you too will be measuring (2) using inches on a ruler.” (hold up ruler)

Students transition back to their seats while I move to the overhead.

**PROCEDURE: (REALIA, USE OF VISUALS)**

- **Model**: Display the transparency inch ruler on the overhead and point to the tick marks with numbers. Have students take out the rulers from their tool kits. Have children point to the marks on their rulers. Say, “The space between (2) each of these marks (2) is called one inch.” (point to and state new vocab word) Frame an inch on the ruler using both of your index fingers and have students do the same (pulling on the background knowledge of students, tell the students that it is just like finger-framing a word while reading) **Model/think aloud as you finger frame one inch, two inches, three inches...ask students to do the same.**

- **Have the students put their rulers back into their tool kits. Using the overhead, draw a 2-inch, 4-inch and 5-inch line. Model the process of using the ruler to**
measure the line. State the importance of placing the end of the ruler at the beginning of the line that is being measured. Think aloud, “Let’s see, before I begin measuring, I make sure (2) that I have the end of my ruler (2) (rub finger along end) on the beginning of my line.” Ask, “Using my ruler, how can I tell (2) how many inches my line is?” WAIT (field responses) Repeat this process with the 4 and 5 inch line segment.

- Move the ruler so that the line for the one-inch increment is at the start of the line. “Would I be correct (2) if I put my ruler here to start measuring?” Field responses. “What makes you know that? Where should (2) my ruler really be (2) when I start to measure?” (model again where you need to start with your ruler)

ON YOUR OWN: (INSTRUCTIONAL CONVERSATIONS) Revisit and point to today’s lesson objective: “Today, you learned (2) that you can measure an object in inches (2) using a ruler. Now, you are going to (2) break off into work groups (2) and measure things using a ruler. Then, you are going to talk to someone about what you found out.” Students will use the prompt, “This _______ measures about _______ inches, “ to justify their answer.

Modified from pages 503-504 in Houghton Mifflin and using the same classroom objects from yesterday’s lesson:

- **Nearly Fluent** students will use a ruler to measure to the nearest inch and tell me about it using the words measure and inch (having a conversation starter as a guide).
- **Intermediate** students will use a ruler to measure to the nearest inch (with a partner) and tell his/her partner about it using the words measure and inch (having a word bank and conversation starters as a guide).
- **Speech Emergent** students will use a ruler to measure to the nearest inch (with a partner) and tell his/her partner about it using a sentence strip containing the words measure and inch (use of word bank).
- **Early Production** students will use a ruler to measure to the nearest inch (with me in a small group) and use sentences strips, words cards and number cards to support the accurate use of measure an inch (see instructional conversation prompts on lesson plan p 4).
- **Pre-Production** students will use a ruler to measure to the nearest inch (with me in a small group) and match using picture cards and actual measurement cards (see instructional conversation prompts on lesson plan p 4).

Modified work samples that address the varied levels of language proficiency may be found on pages 27-31 of this lesson plan.
Rotate amongst the students as they work to facilitate discourse through instructional conversations. Pull from the following questions:

- For students in the Pre-Production Stage, ask, “Point to the object measured the shortest.”
- For students in the beginning Early Production Stage, ask, “Is the lunch pack shorter or longer than the marker?”
- For those students in the Speech Emergence Stage, ask, “Tell me about an object that measured shorter than the ruler.”
- For those students in the Intermediate Stage, ask, “Tell me which object measured the closest to your estimate?”

Respond to each student by echoing/paraphrasing their response. For example, “You think that...

“the ___________ measured the longest/shortest.”

WHAT DO I DO WHEN I’M DONE?: As students finish working, each table has a basket of yarn pieces available to practice measuring the length of the yarn with the ruler from their tool kits.

CLOSURE/REFLECTION: (whole class on the floor) (NEGOTIATE MEANING)

Do the Inside-Out Circle Activity:

Inside-Out Circle: The class is divided into two groups: half the class forms a circle looking out and sits down (the inside circle) and the other half of the class sits in front of someone in the inner circle (the outside circle). The more proficient language proficient students sit in the inner circle and share first by using one of the outcome sentences that are always visually accessible to the students (see page 32). His/her partner responds in the same manner (by choosing one of the outcome sentences). When both partners are finished, they show a thumbs up to let me know that they have both shared. (p 110)

Ask, “How is measuring with a ruler (hold it up) (2) different from measuring with a paperclip (2) or a unifix cube?” (hold up both) (field responses) “Today, you learned that (2) you can measure by inches (2) using a ruler. Tomorrow, you are going to practice (2) all three of the ways (2) that you learned to measure this week (2) in math stations.”

ASSESSMENT: Assessment will be done through anecdotal recordings, student work samples, and through student/student and teacher/student discourse. Those students who I observe are struggling with this concept will work in a small work group with me during our morning WARM UP word time on re-teaching this concept.
LESSON
NARRATIVE
The modifications that I made within my lesson plan are those that made the lesson more comprehensible to the English Language Learners in my classroom. I began the lesson by building background to make the content more comprehensible for my English Language Learners. For example, prior to reading, "Inch by Inch," I facilitated a Directed Reading-Thinking Activity (DR-TA). This is a strategy that can be used to assist all students in learning how to strategically comprehend text. An example of this is when I asked (prior to reading), "With a title like, "Inch by Inch," what do you think this story will be about?" As I read, I stopped and revisited/revised some of the predictions that were made by the students. The predictions that the students make prior to reading and the (dis)confirmations that they make throughout the reading directly impacts comprehension.

From the read aloud, the students were able to use their journals to respond to the prompt, "The inchworm measured __________." Modified journal samples that address the varied level of language proficiency were used. Journaling allows students to reflect upon their prior learning and therefore build upon what they know as they learn more about the concept. The written responses in the student journals served as the foundation for every student learning more about the concept of measuring with a standard unit of measure (an inch). These journals are also interactive in that I include my reaction (oral and written) back to the student.

As in previous lessons, gesturing, eliciting background knowledge, the use of visuals and realia are all vital components in providing students with more meaningful, comprehensible learning experiences. Examples of these are when I use my fingers to fingerframe an inch using the overhead ruler. With this, I am also eliciting student background knowledge by referencing the similarity of fingerframing a word while reading. I also display actual examples (realia) for clarification of meaning (the ruler, for example).
Lastly, offering opportunities for students to negotiate meaning is evident throughout this lesson. For example, the modified questioning prompts that I used to address the varied levels of language proficiency allowed students to negotiate meaning. While students are working “on their own,” they either shared their measurement findings with a partner or with me. The closure of the lesson also facilitates negotiation of meaning in that the students are paired by language proficiency and asked to share out one thing that s/he learned about measurement. With this, students had the freedom to choose from a variety of outcome sentences:

- I learned
- I think
- I wonder
- I feel

I modified the outcome sentences for those students in the pre and early production levels of language proficiency. To do this, I included iconic representations along with each starter sentence.
READ ALOUD
TEXT
One day a hungry robin saw an inchworm, green as an emerald, sitting on a twig. He was about to gobble him up.
"Don't eat me. I am an inchworm. I am useful. I measure things."

"Is that so!" said the robin. "Then measure my tail!"
"That's easy," said the inchworm.
"One, two, three, four, five inches."
"Just think," said the robin, "my tail is five inches long!"

And with the inchworm, he flew to where other birds needed to be measured.
The inchworm measured the neck of the flamingo.
He measured the toucan's beak...
the legs of the heron...
the tail of the pheasant...
and the whole hummingbird.
One morning, the nightingale met the inchworm.
"Measure my song," said the nightingale.
"But how can I do that?" said the inchworm. "I measure things, not songs.
"Measure my song or I'll eat you for breakfast," said the nightingale.
Then the inchworm had an idea.
"I'll try," he said, "go ahead and sing."
The nightingale sang and the inchworm measured away.
He measured and measured...
Inch by Inch...
until he inched out of sight.
STUDENTS NEGOTIATE MEANING THROUGH:

DIRECTED READING-THINKING ACTIVITY (DR-TA)

Ask, "What do you think that this story will be about?"

Chart responses on chart paper:

I think that this story will be about...

During reading, stop and revisit predictions, confirmations and disconfirmations and record them here:

I found out that...
WORD WALL WORDS

These words are added to our word wall after they are introduced during the initiation of the lesson:

- Inches
- ruler
MODIFIED
STUDENT
WORK SAMPLES:

"Writing about Things That the Inchworm Measured"
In your journal, use your story picture cards to help you draw and label two things that the inchworm measured after listening to the story, "Inch by Inch."

The inchworm measured

____________________________________________________________________________________________

____________________________________________________________________________________________

The inchworm measured

____________________________________________________________________________________________

____________________________________________________________________________________________
The inchworm measured

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>the inchworm measured</td>
<td>the neck of the flamingo</td>
</tr>
<tr>
<td>the toucan's beak</td>
<td>the legs of the heron</td>
</tr>
<tr>
<td>the tail of the pheasant</td>
<td>the whole hummingbird</td>
</tr>
<tr>
<td>the song of a bird</td>
<td>the robin's tail</td>
</tr>
</tbody>
</table>
In your journal, use the sentence starter and story picture cards to help you write about two things that the inchworm measured after listening to the story, "Inch by Inch."

The inchworm measured

The inchworm measured
<table>
<thead>
<tr>
<th>The inchworm measured</th>
<th>the neck of the flamingo</th>
</tr>
</thead>
<tbody>
<tr>
<td>the toucan's beak</td>
<td>the legs of the heron</td>
</tr>
<tr>
<td>the tail of the pheasant</td>
<td>the whole hummingbird</td>
</tr>
<tr>
<td>the song of a bird</td>
<td>the robin's tail</td>
</tr>
</tbody>
</table>
In your journal write two sentences describing the things that the inchworm measured after listening to the story, "Inch by Inch."

Use the sentence strip and picture cards to help get you started.

The inchworm measured __________________________.
The inchworm measured

<table>
<thead>
<tr>
<th>toucan</th>
<th>flamingo</th>
</tr>
</thead>
<tbody>
<tr>
<td>heron</td>
<td></td>
</tr>
<tr>
<td>pheasant</td>
<td>hummingbird</td>
</tr>
<tr>
<td>song</td>
<td></td>
</tr>
<tr>
<td>bird</td>
<td>robin</td>
</tr>
</tbody>
</table>
In your journal write and illustrate at least one sentence describing the things that the inchworm measured after listening to the story, "Inch by Inch."

<table>
<thead>
<tr>
<th>WORD BANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>toucan's beak</td>
</tr>
<tr>
<td>neck of the flamingo</td>
</tr>
<tr>
<td>legs of the heron</td>
</tr>
<tr>
<td>tail of the pheasant</td>
</tr>
<tr>
<td>whole hummingbird</td>
</tr>
<tr>
<td>song of a bird</td>
</tr>
<tr>
<td>robin's tail</td>
</tr>
</tbody>
</table>
STUDENT RESPONSE EXCERPT FROM JOURNAL

In your journal write at least two sentences describing the things that the inchworm measured after listening to the story, "Inch by Inch."

WORD BANK

toucan's beak      flamingo      heron      pheasant
whole hummingbird  robin's tail
MODIFIED
STUDENT
WORK SAMPLES:
"Speaking about Measuring an Object"
Picture/Word Cards and Numbers Cards to Assist Students in Classifying Information/Instructional Conversations

<table>
<thead>
<tr>
<th>Lunchpack</th>
<th>Ruler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marker</td>
<td>Crayon Box</td>
</tr>
<tr>
<td>Scissors</td>
<td></td>
</tr>
</tbody>
</table>

| 1 inch             | 2 inches         |
| 3 inches           | 4 inches         |
| 5 inches           | 6 inches         |
| 7 inches           | 8 inches         |
| 9 inches           | 10 inches        |
SENTENCE STRIPS TO SUPPORT STUDENTS WITH JUSTIFYING THEIR ESTIMATIONS

I estimate that a __________ measures about ___ inches.
(use picture card to help you write the word)

I found out that a __________ measures about ___ inches.
(use picture card to help you write the word)
<table>
<thead>
<tr>
<th>Lunchpack</th>
<th>Ruler</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marker</td>
<td>Crayon Box</td>
</tr>
<tr>
<td>Scissors</td>
<td></td>
</tr>
</tbody>
</table>
Sentence strips to support students with justifying their estimations

I estimate that a ___________ measures about ___ inches.

I found out that a ___________ measures about ___ inches.

Word Bank

ruler
lunch pack
marker
crayon box
pair of scissors
Intermediate-Lesson 3

WORD BANK FOR STUDENTS TO USE AS A RESOURCE
FOR INSTRUCTIONAL CONVERSATIONS:

<table>
<thead>
<tr>
<th>WORD BANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruler</td>
</tr>
<tr>
<td>lunch pack</td>
</tr>
<tr>
<td>marker</td>
</tr>
<tr>
<td>crayon box</td>
</tr>
<tr>
<td>pair of scissors</td>
</tr>
<tr>
<td>estimated</td>
</tr>
<tr>
<td>measured</td>
</tr>
<tr>
<td>inch</td>
</tr>
<tr>
<td>inches</td>
</tr>
</tbody>
</table>

CONVERSATION STARTERS

I estimated that the ___________ measured _______ inches.

I found out that it really ___________ _____ inches.

I was surprised to find out that the _____ measured _____ inches.

I want to measure ________________________________.
CONVERSATION STARTERS

I estimated that...
I found out that...
I was surprised to find out that...
I want to measure...

The conversation starters are accessible to students at all times.
Lesson 3-Closure-Accessible to all students

OUTCOME SENTENCES

(may be used to facilitate instructional conversations/negotiate meaning)

I learned ...

I think 🌧 ...

I wonder 🤔 ...

I feel 😊😊😊😊😊 😊😊😊😊😊
**UNIT QUICK CHECK**

**Find the object.**

Is the object longer or shorter than your hand? Circle.

1. **longer**
   - shorter

2. **longer**
   - shorter

**Complete the chart. Answers may vary.**

<table>
<thead>
<tr>
<th>Find the object</th>
<th>Measure with</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Image of crayon]</td>
<td>about ____</td>
</tr>
</tbody>
</table>

**First estimate.**

Then use an inch ruler to measure. **Estimates may vary.**

| Estimate: about ____ inches |
| Measure: about ____ inches |

---

This Quick Check is part of the Houghton Mifflin program and is administered after the introduction of a unit. This will be given after the completion of lesson 5 in this unit. A "chapter" assessment is given after all of the measurement concepts have been introduced.
Checklists
UNIT: MEASUREMENT

GRAMMAR AND FUNCTION CHECKLISTS:

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns</td>
<td>1,2,3</td>
</tr>
<tr>
<td>Adjectives</td>
<td>2</td>
</tr>
<tr>
<td>Verbs</td>
<td>2,3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compare</td>
<td>1</td>
</tr>
<tr>
<td>Sort</td>
<td>1</td>
</tr>
<tr>
<td>Predict</td>
<td>2</td>
</tr>
<tr>
<td>Estimate</td>
<td>2</td>
</tr>
<tr>
<td>Measure</td>
<td>3</td>
</tr>
<tr>
<td>Interpret</td>
<td>3</td>
</tr>
</tbody>
</table>
FLA 518: Sheltered ELL Strategies Checklist

Write the page numbers and any other identifying features to identify those parts of your lessons that employ the following strategies.

<table>
<thead>
<tr>
<th>SHELTERED STRATEGIES</th>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Contextualized Lesson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. A. Build and Activate Background Knowledge</td>
<td>4</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>I. B. Use extensive Visuals, Realia, Manipulatives, &amp; Gestures</td>
<td>5.6</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>I. C. Model (Instructions, Processes)</td>
<td>4.5</td>
<td>2.4</td>
<td>2.3</td>
</tr>
<tr>
<td>I. D. Create Opps. To Negotiate Meaning/ Check Understanding</td>
<td>4-6</td>
<td>3.4</td>
<td>2.4</td>
</tr>
<tr>
<td>II. Make Text Comprehensible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II.A. Intentional Use of Graphic Organizers</td>
<td>4.6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>II.B. Develop Vocabulary</td>
<td>4-6</td>
<td>2-4</td>
<td>1.3.4</td>
</tr>
<tr>
<td>II.C. Modify Written Text</td>
<td>9</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>III. Make Talk Comprehensible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III.A. Pace Teacher's Speech</td>
<td>4-6</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>III.B. Use of Listening Guides</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>III.C. Use of Word Walls</td>
<td>4.9</td>
<td>2.3</td>
<td>1</td>
</tr>
<tr>
<td>III.D. Frame Main Ideas</td>
<td>4-6</td>
<td>2.4</td>
<td>2.3</td>
</tr>
<tr>
<td>III.E.. Check for Understanding</td>
<td>4.6</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>IV. Engage Opportunities for Output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV.A. Use Teacher Questioning and Response Strategies</td>
<td>5.6</td>
<td>2.4</td>
<td>3.4</td>
</tr>
<tr>
<td>IV.B. Practice Instructional Conversations</td>
<td>6</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>V. Engage Appropriate Language Proficiency Levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V.A. Use questions appropriate for language proficiency levels in conversations, activities, and assessments</td>
<td>4-6</td>
<td>2.4</td>
<td>4</td>
</tr>
<tr>
<td>VI. Give Students Voice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. A. Challenge students to produce extended talk</td>
<td>6</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>VI. B. Model Language for Oral and Written Production</td>
<td>4-6</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>VI. C Use Group/Pr. Work to Elicit Student Talk; Students as Researchers</td>
<td>6</td>
<td>3.4</td>
<td>3</td>
</tr>
</tbody>
</table>
Original Lessons
LESSON PLAN: DAY 1

OBJECTIVE: The students will be able to compare and order the length and heights of objects. The students will be able to sort objects by length.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure.

GLE 9: Students will use nonstandard units, references or direct comparison of objects (appearance) to order objects by length, area and capacity.

TIME: 60 minutes

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: Students take a pretest to check what they already know about the concept of measurement. The pretest consists of: measuring a crayon and a stick with a paperclip; determining which item was longer/shorter (strawberry/banana); estimate and then measure using an inch ruler. Based on this pre-assessment, it was determined that 0/22 students were able to accurately measure using a non-standard unit of measure.

VOCABULARY: height, length, longer, taller, shorter

MATERIALS/RESOURCES: blank transparency, overhead, paperclip, ruler

INITIATION (WHOLE CLASS): Write and state the objective on the whiteboard, “Today, you will learn that you can sort things by their length.” Clarify that length means how long something might be. (The students are familiar with the term “sort”; they practice this across other curricular areas and are comfortable with it.)

Introduce vocabulary and tape vocabulary word cards onto the whiteboard, where I will be facilitating the lesson initiation.

Students transition back to their seats while I move to the overhead.

PROCEDURE:

- Model comparing lengths using a blank transparency, paperclip and a ruler. Start by displaying a paperclip and ruler on the overhead. Compare the length of these two objects. Emphasize the meaning of length. (Use gesture to show what length means: run finger the length of both objects) Ask, “Which is shorter? Which is longer?”

Now introduce a pencil. Ask, “Which is the longest object? Which is the shortest object?” Now ask a volunteer to come up to the overhead and order the objects by length.
Repeat the activity with other objects that are placed on the overhead to introduce height and the terms: tall, taller, and tallest, short, shorter, shortest.

Introduce worksheet using the overhead. Do items 1-4 on the front side as a whole class. The items shown are also items present in the classroom. Use the items from the classroom as we work on the overhead. To familiarize students with the questioning/justifying process that they will use on their own in partnerships, choose two students to sit with me as I facilitate the questioning process and then justify our answers regarding the items that we just completed. For example, “What did you learn about measuring today? How do you know that? Would you show me? The ________ is taller than _________. The ________ is shorter than _________.” I am ________ than _________.

I will also remind students that I expect them to be using some of the math vocabulary that was introduced throughout the lesson today. “Where can you look to check out the vocabulary words we learned about measurement so far?”

Also, remind students that they are to work from the, “What Do I Do When I’m Done” Bin using their math response journals today. Write (and read their math prompt) on the whiteboard, “Make a list of things in the classroom that are taller than you.”

ON YOUR OWN: Students work in partnerships to complete the remainder of the worksheet (items 1-7 on the reverse side). As students are working in partnerships, move about the room to check for understanding and facilitate discourse amongst the students so as to get them talking about what they learned today. Model “math talk” as needed.

WHAT DO I DO WHEN I’M DONE?: As students finish working, they write a written response in their math journals to the prompt, “Make a list of things in the classroom that are taller than you.”

CLOSURE/REFLECTION: (whole class) We will meet together on the floor. The students bring their worksheets to the floor with them and we talk about what they’ve learned. To check for understanding, ask the students, “Am I taller or shorter than you are? Is a cat taller or shorter than you are? What makes you know that?” Also ask for pairs of student volunteers to come to the front of the class and ask the audience members to compare the heights of the students.

______________ is shorter than ____________.
______________ is taller than ____________.
______________ is the tallest.
______________ is the shortest.

Say, “Today, you learned that you can sort things by how their height and length. Tomorrow, we will be learning how to estimate or guess how long objects are.”

ASSESSMENT: Those students who I observed were struggling with this concept will work in a small work group with me in the morning on re-teaching this concept.
ORIGINAL LESSON PLAN
LESSON PLAN: DAY 2

OBJECTIVE: The students will be able to predict and estimate lengths using non-standard units.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure.

GLE 9: Students will use nonstandard units, references or direct comparison of objects (appearance) to order objects by length, area and capacity.

TIME: 60 minutes

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: From my observations, student work samples and anecdotal recordings from yesterday’s lesson, I noted that 6/22 students were able to compare and order the length and heights of objects accurately and successfully. These students were also able to “talk” about what they’ve learned using the appropriate vocabulary. 11/22 students were able to accurately compare and order the length and heights of objects accurately and successfully, however some had difficulty applying what they learned as far as applying the vocabulary words successfully. 5/22 students had difficulty comparing and ordering the length and heights of objects and also had difficulty applying what they learned as far as using the vocabulary words successfully. With this, I grouped the students according to tier:

TIER I: 6 students who were solid with yesterday’s assignment
TIER II: 11 students who were solid with yesterday’s assignment, but needed support with using some of the vocab. words accurately.
TIER III: 5 students who had difficulty doing both tasks

I will conduct a mini-lesson for the Tier III students during our Morning Warm-Up Work time and then facilitate an activity during morning meeting where the students will choose another student to greet and then tell that student whether s/he is taller/shorter than the person s/he is greeting.

MINI-LESSON: (10 minutes) My objective for this mini-lesson is to have the students have a better understanding of the vocab. words introduced in yesterday’s lesson (taller and shorter, specifically). I will start by having the students compare the sizes of their feet, of each other’s height and lastly, compare the size of each one of them, to me. To do this, students need to use both of the vocab. words in a sentence. I will write a sentence starter on a small whiteboard for the students to use as a resource. I will model my expectations for each student.

_________ is shorter/taller than __________.
VOCABULARY: measure, units (review: length)

Introduce vocabulary and tape vocabulary word cards onto the whiteboard where I am facilitating the lesson initiation.

MATERIALS/RESOURCES: paper clips, paintbrush, new crayons, "Measuring Penny," by Loreen Leedy

INITIATION (WHOLE CLASS): Write and state the objective on the whiteboard. “Today, you will learn that you can estimate (guess) the length of objects using nonstandard units.” Explain to the students that the word estimate means to guess. Use examples from the classroom to do this.

Before we start, I am going to read you a story titled, "Measuring Penny" by Loreen Leedy. Field predictions. State purpose: "In this story, a girl named Lisa learns about math by measuring her dog Penny with all sorts of units, just like you will do later on. As I read, see how many different units (or things) Lisa uses to measure Penny."

Stop throughout the story and talk about some of the units that Lisa uses to measure Penny. After reading, chart student responses on chart paper. “Today, just like Penny, you will be using things from our classroom to measure with. You will be using paperclips and unifix cubes. Let’s add these two things to our list.”

Note regarding read-aloud: Only certain sections of the story will be shared at this time and will be paraphrased. I’ve only included those sections of the story that I plan on sharing with the students. The other sections are not appropriate for this lesson.

Students transition back to their seats while I move to the overhead.

PROCEDURE:

- **Model:** place a paintbrush horizontally on the overhead. Say, “You can measure the length of the paintbrush using paper clips as a non-standard unit of measure.” Can anyone estimate or guess about how many paper clips it will take to go the length of the paintbrush? Say, "No remember that to estimate means to take a guess without checking first." (WAIT) Field responses and jot down on the overhead transparency. Start to model the process of placing the paperclips end to end to find the length. STOP before the end and have a volunteer come up and count as s/he finishes placing the clips. Ask, “About how many paper clips long is the paintbrush?” Record the measure on the overhead: about ______ paper clips. Which estimate was closest to our actual measurement?
- Keep the paperclips lined up along the paintbrush. Repeat this process using crayons as the non-standard unit of measure. First, have students predict whether or not you will need more or fewer crayons than paperclips to measure the paintbrush. Ask, “Who can predict for me...Will I need to use more or fewer crayons to measure the length of the paintbrush than I did paperclips?” Repeat question 2 (or so) more times while students think. Field responses. I estimate that a __________ measures about _______ units.

- Then ask, “Why do you get a different number when you measured using crayons?...What made you know that?” (a longer unit results in fewer measured units)

ON YOUR OWN: Restate and point to today’s lesson objective: “Today, you learned that you can estimate (guess) the length of objects (things) using nonstandard units.”

Using student pages 501-502 on the overhead, complete a guided practice using these three objects: paintbrush, book, crayon. Have a student volunteer come up and choose one of these objects to measure. Students will first measure using a paperclip and then a unifix cube. Remind students that the nonstandard unit that they measure with has to touch end to end as they measure along the length of the object. Say, “Remember, our measuring rule: As you measure using your paperclip or unifix cube, they must touch end to end. Watch ___ as s/he measures using a unifix cube.”

T will observe students as they measure.

Students now break off and rotate through math stations to measure a book, crayon ruler, marker, crayon box and pair of scissors.

As students finish, they know to check the, “What Do I Do When I’m Done Bin.” This is part of their everyday process.

“WHAT DO I DO WHEN I’M DONE?” As students finish working, they work with a partner to trace one another’s handprint onto a piece of paper. They will be using paperclips and unifix cubes to measure. Then, they complete these prompts:

I estimate that my hand is about ________ paper clips long.
I estimate that my hand is about ________ unifix cubes long.

I found out that my hand is about ________ paper clips long.
I found out that my hand is about ________ unifix cubes long.

CLOSURE/REFLECTION:(whole class) We will meet together on the floor. The students bring their handprint papers to the floor with them to talk about what they’ve noticed. Once students are on the floor, ask them that it is time for math talk. “Turn
to your partner and sit knee-to-knee and toe-to-toe. Tell your partner what you noticed when you measured your handprint.”

Say, “Today, you learned that you can estimate or guess how long objects are.” Tomorrow, you be doing some more estimating and then actually checking your guess using a ruler.”

ASSESSMENT: Those students who I observed were struggling with this concept will work in a small work group with me in the morning on re-teaching this concept (re-teach practice sheet 17.1)

REFLECTION:
ORIGINAL LESSON PLAN
ASSESSMENT: ON-GOING; STUDENT WORK SAMPLES; ANECDOTAL RECORDINGS; POST-ASSESSMENT

REFLECTION:
LESSON PLAN: DAY 3

OBJECTIVE: The students will be able to measure an object in inches using a ruler.

STANDARD 3.3: Students will develop and apply units, systems, formulas and appropriate tools to estimate and measure.

GLE 10: Students will explore using standard units of measure (inch and centimeter) to communicate measurement in a universal manner.

TIME: 60 minutes

BACKGROUND KNOWLEDGE/PRE-ASSESSMENT: From my observations, student work samples and anecdotal recordings from yesterday's lesson, I noted that all 22/22 students were able to estimate lengths using non-standard units. However, not all students were able to accurately and successfully describe the process. 7/22 students needed added support with this. To address this, I will do a mini-lesson during our morning warm up work time.

MINI-LESSON: (10 minutes) My objective for this mini-lesson is to have the students have more success at using at least two of the measurement words that we have introduced thus far. (taller, shorter, about ___ long, about ______ tall)

VOCABULARY: inches, ruler

MATERIALS/RESOURCES: ruler transparency, "Inch By Inch," by Leo Lionni

INITIATION (WHOLE CLASS): Write and state the objective on the whiteboard, "Today, you will be able to measure an object in inches using a standard unit of measure, a ruler."

Introduce vocabulary and tape vocabulary word cards onto the whiteboard.

Read, "Inch by Inch" by Leo Lionni. State purpose: "Today, I am going to read you a story about an inchworm who tries to keep from being eaten by measuring all sorts of things around it. As I read, see if you can remember what the inchworm is measuring as it tries to get away from the bird."

Stop periodically throughout the story and elicit responses as to the things that the inchworm is measuring. (Jot down on chart paper) When finished, say, "Just like the inchworm measured all sorts of things around it using its one inch body, you too will be measuring using inches today on a ruler."

Students transition back to their seats while I move to the overhead.
PROCEDURE:

- **Model**: Display the inch ruler on the overhead and point to the tick marks with numbers. Have students take out the rulers from their tool kits. Have children point to the marks on their rulers. Explain to the students that the space between each tick mark with a number is called 1 inch. (point out and state new vocab word) **Frame an inch** on the ruler with my both of my forefingers and have students do the same (tell the students that it is just like finger-framing a word while reading)

- **Draw a 2-inch, 4-inch and 5-inch line**. Have students put their rulers back in their tool kits. Model the process of using the ruler to measure the line. State the importance of placing the end of the ruler at the beginning of the line that is being measured. Also, be thinking outloud, “Let’s see, before I begin measuring, I make sure that I have the end of my ruler (rub finger along end) on the beginning of my line.” Ask, “Using my ruler, how can I tell how many inches my line is?” (wait; field responses)

- **Move the ruler so that the line for the one-inch increment is at the start of the line. “Would I be correct if I started measuring my line here?” Field responses. “What makes you know that?”**

**ON YOUR OWN**: Re-state and point to today’s lesson objective: “Today, you learned that you can measure an object in inches using a ruler.” Now, you are going to break off into work groups and try measuring things on your own.

Using student pages 503-504, students work independently in pairs; 7 students will work with me on the floor where I will facilitate “math talk” about what they are doing and noticing as they work.

**WHAT DO I DO WHEN I'M DONE?**: As students finish working, each table has a basket of yarn pieces available to practice measuring the length of the yarn with the ruler from their tool kits.

**CLOSURE/REFLECTION**:(whole class) We will meet together on the floor. Once students are on the floor, ask them to, “Turn to your partner and sit knee-to-knee and toe-to-toe and math talk. Tell your partner something that you learned today.” (teacher observation)

Say, “Today, you **learned that** you can measure by inches using a ruler. Tomorrow, you are going to practice all three of the ways that you learned to measure this week in math stations.”