PLANNING FOR EXPRESSIVE LANGUAGE IN MATH FOR MULTILINGUAL

LEARNERS

by

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A capstone submitted in partial fulfillment of the requirements for the degree of Master
of Arts in Teaching English to Speakers of Other Languages

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Project Description

The capstone project is designed to answer the question, *How can planning for expressive language in math affect the academic achievement and language development of third grade multilingual students?* The capstone project contains a unit of 10 lessons plans that incorporate multiple opportunities for students to practice speaking and writing in math. This unit of lessons is intended to be taught to a heterogeneous class of third grade students. The six multilingual students in the class have an English proficiency of Level 3 or higher based on ACCESS for WIDA English proficiency exam. The lessons were designed to be taught to a class of 24 third grade students, some who are multilingual learners and some native speakers of English.

Understanding by Design. As described in Chapter Three, the unit of lessons in this project was created using the Understanding by Design (UbD) framework by Wiggins and McTighe (2011). First, the standards and objectives were selected and written. Then, the assessments were created. Last, the learning activities, materials, and lesson scripts were written.

Project Rationale. This 10-day lesson sequence will include many opportunities for students to practice academic vocabulary through speaking and writing. The lessons are centered around third grade number sense standards from the state of Minnesota. Multilingual students learn language through content. They need direct instruction of vocabulary and use of the vocabulary needs to be scaffolded and repeated frequently.

Context. The unit was designed to be taught in a co-taught classroom. The classroom is instructed for one hour a day by the classroom teacher and an English as

a second language teacher. Each lesson specifies which co-teaching model is implemented for that lesson. All students are taught by both teachers. The classroom is made of 24 students with 6 of them being multilingual learners. All 6 multilingual students are at an intermediate level or higher of language proficiency.   Five of the six students are native Spanish speakers and one student is a native Hmong speaker.

Lesson Overview

Each lesson is designed to work through the Minnesota third grade math standards focused around place value and number sense. The WIDA standards for grades 2-3 math standards are also a part of each lesson. For these lessons the expressive language standards are the main focus as a means to incorporate speaking and writing into math class. Each lesson has speaking frames to be used to encourage the use of lesson vocabulary orally. Many lessons also have writing frames as a means of growing academic vocabulary in the math classroom.

Using these scaffolds and others such as manipulatives, images, word wall, partner work, and games, are included in the lessons to help all students learn the language and content of math simultaneously.

Lesson Overview

#	Lesson Activities	Lesson Assessment
1	Reintroduction to Understanding Place Value Tier 2 Vocabulary: digit, worth, most, least Tier 3 Vocabulary: ones, tens, hundreds, thousands,	-Prior knowledge partner activity
2	Identify and build numbers using base ten blocks and drawings up to 100,000 Tier 2 Vocabulary: value, same, different Tier 3 Vocabulary: place value	Formative Assessment: -independent building of number -independent identification of number with base ten blocks -use speaking frames to explain similarities and differences
3	Comparing numbers up to 100,000 Build a Number game Tier 2 vocabulary: bigger, smaller, biggest, smallest, compare	-Daily speaking prompt -exit slip
4	Compare and order whole numbers up to 100,000 Greater than and less than writing Greater than and less than number and symbol practice Tier 2 vocabulary: greater than, less than, equal to	-Daily speaking prompt -writing frames -IXL
5	Compare and order whole numbers up to 100,000 Ordering number cards from least to greatest and greatest to least Tier 2: least, greatest, order	-Daily speaking prompt -ordering number cards -writing prompt -IXL
6	Using place value charts to write numbers in expanded form and word form Tier 3: expanded form, word form, number word form, standard form	-Daily speaking prompt -Place value chart work -IXL
7	Matching game to match numbers with base-ten blocks, in expanded form, in word form, and in number word form.	-Daily speaking prompt -Number boxes -Number Match game

8	Finding 100, 1,000, 10,000 more or less of a number using place value mats and base-ten blocks Dice game	-Daily speaking prompt -Dice game -Exit slip
9	Review	-Writing prompt -Review game
10	Assessment	Formative Assessment

Unit Standards and Objectives

Minnesota State Standards	
Number and Operation 3.1.1	Compare and represent whole numbers up to 100,000 with an emphasis on place value equality.
Benchmark 3.1.1.1	Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.
Benchmark 3.1.1.2	Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousand, thousands, hundreds, tens and ones.
Benchmark 3.1.1.3	Find 10,000 more or 10,000 less than a given five-digit number. Find 1,000 more or 1,000 less than a given four- or five- digit number. Find 100 more or 100 less that a given four- or five- digit number.
Benchmark 3.1.1.5	Compare and order whole numbers up to 100,000.
WIDA Standards	
ELD-MA.2-3.Argue.Expressive	Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive	Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.
Lesson Objectives	
Lesson 1	**Content:** Students will be able to identify different place value digits within a number. **Language:** Students will be able to compare the worth of digits within four-digit numbers with content specific vocabulary using place value mats and base-ten blocks.
Lesson 2	**Content:** Students will build numbers with base-ten blocks and consider the value of each digit within a number. **Language:** Students will use academic vocabulary to explain the value of digits in a number.
Lesson 3	**Content:**Students will be able to demonstrate an understanding of place value by using number cards to build the biggest number. **Language:**Students will explain why their number is bigger or smaller than their partner's by using comparative language, bigger than and smaller than to compare the two numbers.

Lesson 4	**Content:**Students will use the greater than, less than, and equal symbols to compare numbers. **Language:**Students will explain their reasoning and solutions using comparative language
Lesson 5	**Content:**Students will put numbers in order from least to greatest and greatest to least. **Language:**Students will explain why they are putting numbers in a particular order. Students will justify their reasoning for putting a number in a particular place. Students will write if they agree or disagree with a prompt and explain their answer.
Lesson 6	**Content:**Students will write numbers in expanded form and word form. **Language:**Students will use academic vocabulary to explain their thinking to a speaking prompt.
Lesson 7	**Content:**Students will be able to express numbers with base-ten blocks, in expanded form, in word form, and in number word form. **Language:**Students will use speaking frames to justify and explain their thinking.
Lesson 8	**Content:**Students will find numbers that are more or less than a given number using place value. **Language:**Students will use a sentence frame to say a number that is more or less than another number.
Lesson 9	**Content:**Students will review concepts taught in the unit. **Language:**Students will write if they agree or disagree with a prompt and explain their answer.

Lesson 1 of 10

Content Standards

3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.
3.1.1.2 Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousand, thousands, hundreds, tens and ones.

Content Objectives

Students will be able to identify different place value digits within a number.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will be able to compare the worth of digits within four-digit numbers with content specific vocabulary using place value mats and base-ten blocks.

Group Size

Whole group- one teacher teach, other assist

ASSESSMENT & FEEDBACK

Prior Knowledge

Prior knowledge will be assessed by putting a number with matching digits on the board. Students will tell their partner what they know about the image.

Formative Assessment

Independent work, small group responses

Summative Assessment

Unit summative assessment will take place in lesson 10
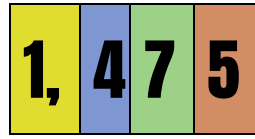
Materials

- [Place value mat](#) for pairs of students, printed on cardstock and laminated
- Vocabulary cards
- Base-ten blocks for each pair 1s, 10s, 100s, 1,000s- use real blocks or [printable blocks](#)

Time	LEARNING ACTIVITIES
Vocabulary	
Tier 2: **digit**: the number 2,487 has 4 digits and each digit has a place value **worth**: having a value of **most**: the greatest amount **least**: the smallest amount Tier 3: **ones**: the digit 7 in 2,487 represents 7 ones, or 7 **tens**: the digit 8 in 2,487 represents 8 tens, or 80 **hundreds**: the digit 4 in 2,487 represents 4 hundreds, or 400 **thousands**: the digit 2 in 2,487 represents 2 thousands, or 2,000	
Lesson Launch	
10 minutes	● Project the number 1,469 on the TV/board. Allow access to whiteboards and base-ten blocks. ● Say, "I want you to think about which digit in this number is worth the most in the number, and which digit is worth the least in this number. I'm not going to explain what these words mean yet, I want to see what you already know. Be prepared to explain your thinking." ● Allow some time for students to think about the problem. Rotate around the room and ask students to explain their thinking to you. Support students who are confused. ● Put students in partnerships and have them compare their responses discussing what they think is similar and different about their approaches. ● Provide a sentence frame to support students in discussing their ideas, and ask for a partnership to model completing a sentence from the board to the rest of the students. An example frame is: ○ The digit that is worth the most is _____. I know this because_____.

	○ The digit that is worth the least is _____. I know this becasue____. ○ My partner and I both used _____ to solve the problem. ○ I used _____ to solve the problem, but my partner used ____ instead.

Instructional Tasks

Direct Explanation

10 minutes	● Ask a few partnerships to share their ideas with the rest of the class.
	 ● Encourage students to use pictures, words, models to explain their thinking to the class.
	 ● Use active questioning techniques to get students to elaborate their thinking and encourage discussion. Example questions include:
	    ○ Who can restate _____'s reasoning in a different way?
	    ○ Did anyone solve the problem in the same way, but would explain it differently?
	    ○ Did anyone solve the problem in a different way?
	    ○ Does anyone want to add on to _____'s strategy?
	    ○ Do you agree or disagree? Why?
	    ○ Which digit is worth the most? Why?
	    ○ Which digit is worth the least? Why?
	
	 ● Display the Word Wall cards, if necessary make a scaled down student version for students who may need their own copy.
	 ● Go over each word and the meaning, drawing special attention to the visuals. Have students discuss the words with their partner.

Teacher Think Aloud

5 minutes	● Project the Place Value Mat on the TV/whiteboard and create 1,469 using base-ten blocks, putting each digit in the corresponding place value space on the mat. Count the base-ten blocks from left to right saying, "One thousand, one-two-three-four hundred, ten-twenty-thirty-forty-fifty-sixty, one-two-three-four-five-six-seven-eight-nine. I have one group of a thousand, four groups of hundred, six groups of ten, and nine ones. The digit one in the thousands place is worth one thousand. The digit four in the hundreds place is worth four hundred. The digit six in the tens place is worth sixty. The digit nine in the ones place is worth nine."

Guided Practice

15 minutes	● Ask students to think about the meaning of the words digit, worth, most, and least. Display the following sentence frame: ○ I used to think_____but now I know_____. ● Encourage the students to think about the approach used to figure out the digit that is worth the most and the least in the previous activity. Ask students, "Now that you know the meaning of the words, and you see the number created with

base-ten blocks on the place value mat, would you like to change your answer about which digit is worth the most or the least? (I used to think the 9 was worth the most but now I know the 9 is only worth 9 ones.)
- Give students a few minutes to share their ideas in their partnerships.
- Allow students to share their ideas with the rest of the class. Elaborate that the 1 is worth the most because it represents one group of a thousand. The 9 is worth the least because it represents only 9 ones.

Independent Practice

15 minutes	- Put students into small groups. Assign each group a letter (A,B,C, etc.) - Write 1,692 on the whiteboard or display. Ask a student to read the number aloud. - Pass out place value mats and base-ten blocks to each small group. - Display the follow checklist: - Which digit is worth the most? - Which digit is worth the least? - Explain your answers! - Display the following sentence frame: - The _____ that is _____the _____ is. We know this because_____. - Create a word bank with the words **digit, worth, most,** and **least.** - Section off the whiteboard into sections, one for each group, with ample room for students to record their answers. Label each section with the group's letter. - Allow time for the students to think about their answers and help them decide who will record their answers on the board.

Lesson Summary and Closure

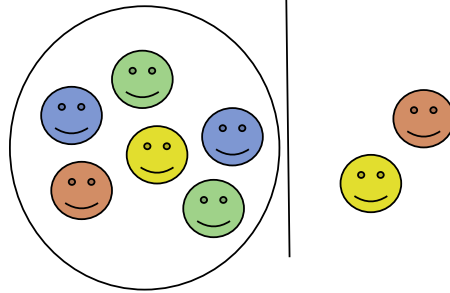| 5 minutes	Ask students to reflect on why it is important that we understand digits and what they are worth in a number. Ask a few students to respond.

digit	1, 4 7 5	the number 1,475 has 4 digits and each digit has a place value
worth		having a value of
most		the greatest amount
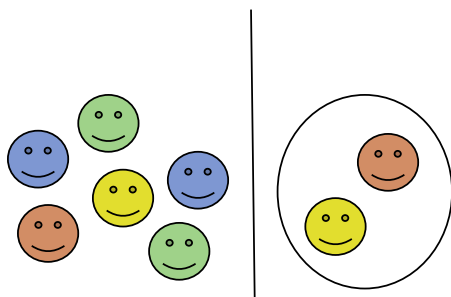
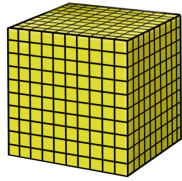|		
least		the smallest amount
ones	 **1,475**	the digit 5 in 1,475 represents 5 ones, or 5
tens	 **1,475**	the digit 7 in 1,475 represents 7 tens, or 70
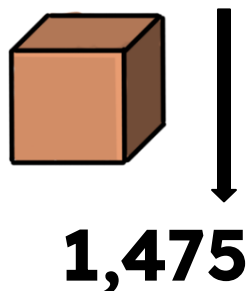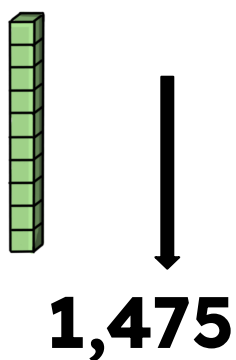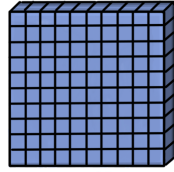
hundreds	1,475	the digit 4 in 1,475 represents 4 hundred, or 400
thousands	1,475	the digit 1 in 1,475 represents 1 thousand or 1,000

Content Standards

3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.
3.1.1.2 Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousand, thousands, hundreds, tens and ones.

Content Objectives

Students will build numbers with base-ten blocks and consider the value of each digit within a number.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will use academic vocabulary to explain the value of digits in a number.

Group Size

Parallel teach- each teacher works with half the class (20 minutes)

ASSESSMENT & FEEDBACK

Prior Knowledge

Speaking prompt

Formative Assessment

Independent practice, IXL

Summative Assessment

Unit summative assessment will take place in lesson 10

Materials

- Base-ten blocks or printed pictures of base-ten blocks
- Vocabulary cards

Time	LEARNING ACTIVITIES
Vocabulary	
Review vocabulary from Lesson 1 **Tier 2**: **value**: synonym of worth **Tier 3**: **place value**: the value of the digit depending on its place in a number	
Lesson Launch	
Whole group 10 minutes	● Display the Daily Speaking prompt slide to review yesterday's concepts. Say, "Let's take a look at this number and the statement that goes with it. We are going to practice speaking to our partner today using the sentence frame and words from the word bank that we learned about yesterday." Allow some time to think before having partners share with one another. ● "Today we are going to spend some time using our base ten blocks to build numbers and also identify numbers that are shown with base ten blocks. We will be working in two different groups. Before we get started we are going to discuss two new words that we are going to add to our word wall." ● Introduce **value** and **place value**. Have partners discuss other contexts or places they have heard the word value used. Lead them to relating how we talk about the money value of items to the value of digits within a number. ● "We will use the words **value** and **worth** interchangeably throughout this unit since they are synonyms. A question with the word **value** may look like this:" ○ (Write on board/display) What is the value of the 7 in the number 975? Allow students some time to think and answer the question. "A question with the word **worth** may look like this:" ● (Write on board/display) How much is the 7 worth in the number 975? Allow students some time to think and answer the question.

	"How are these two questions similar/different?" Have students share ideas with a partner before sharing with the whole group.

Instructional Tasks

Direct Explanation

10 minutes	• Split the class into two groups. One group should be able to move at a faster pace while the other will need to be slowed down. • Pass out Place Value Mats, Base-ten Blocks, and dry erase markers to each student. • "We are going to use base-ten blocks and our place value mat to build and analyze some 4 digit numbers. I will ask you questions about the value of digits as we work."

Teacher Think Aloud

3 minutes	• Display the number 2,579. "When I look at this number I see there is a 2 in the thousands place. I am going to take two thousands blocks and put them on my mat in the thousands place. I see there is a 5 in the hundreds place so I am going to take 5 hundreds blocks and put them on my mat in the hundreds place. I see there is a 7 in the tens place so I am going to take 7 tens and put them in the tens place. Last, I see there is a 9 in the ones place so I am going to count out 9 ones and put them in the ones place."

Guided Practice

20 minutes	• "Now let's build some numbers together."
	• Display a variety of 4 digit numbers for students to build. Assess their understanding as you work. Make them increasingly more difficult as they are able by throwing some numbers with 0s in different places i.e. 8,054.
	• As they are working also ask them questions like:
	   ○ What is the value of the digit in the _____place?
	   ○ How much is the digit in the _____ place worth?
	   ○ Which digit is worth the most?
	
	• Practice making models for students and having them write the corresponding on their mats or whiteboards.

Independent Practice

15 minutes	• Students practice independently on concepts as teachers monitor. • Assign IXL DHS, Value of a digit, and DDS, Place value models. Students will work independently as teachers monitor for students who may need some more one on one guided instruction. Students must secure a score of 80 to be proficient.

Lesson Summary and Closure

2 minutes	• "Today we learned two new words, value and place value. We also practiced

| | using base-ten blocks to model numbers and thought about the value of each digit in a number. Tomorrow we are going to do some writing about the digits in a number and try to build the biggest and smallest number we can." |

value		a synonym of worth
place value	thousands hundreds tens ones **1 4 7 5**	the value of the digit depending on its place in a number

Lesson 3 of 10

Content Standards

3.1.1.5 Compare and order whole numbers up to 100,000.

Content Objectives

Students will be able to demonstrate an understanding of place value by using number cards to build the biggest number.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will explain why their number is bigger or smaller than their partner's by using comparative language, bigger than and smaller than to compare the two numbers.

Group Size

Whole group/partners, One teach one assist

ASSESSMENT & FEEDBACK

Prior Knowledge

Daily speaking prompt

Formative Assessment

Exit Slip, IXL

Summative Assessment

Unit summative assessment will take place in lesson 10

Materials

- [Build the Bigger Number game board and materials](#)
- Whiteboard and marker for keeping score
- Vocabulary cards

Time	LEARNING ACTIVITIES
Vocabulary	
Review vocabulary from previous two lessons **Tier 2**: bigger, smaller, biggest, smallest **compare**: tell how two things are the same or different	
Lesson Launch	
15 minutes	● Display the Daily Speaking prompt slide to review yesterday's concepts. Say, "Let's take a look at this question. We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. ● "Now we are going to take what we just spoke about and do some writing." ● Have each student clue paragraph frame 1 in the writing section of their math notebook. Read the prompt aloud and have a few students say how they would complete the prompt. Hearing a few students say their thinking before actually writing helps other learners process what they would like to write. ● Have students partner up and share their written responses.
Instructional Tasks	
Direct Explanation	
2 minutes	● "Today we are going to play a game where we will use number cards to build numbers. The goal of the game will be to use number cards to build the biggest number possible. You will also be expected to **compare** your numbers and explain how you know your number is bigger than your partner's number." ● Introduce the compare vocabulary card. ● "You and your partner will get a game board and a set of number cards 0-9. You will take turns drawing a card and putting it somewhere in your number. You can not move the card once you put it down."
Teacher Think Aloud	

8 minutes	● "I am going to show you how to play this game today. I need a partner to come help me. I will go first." Think aloud as you play the game with the other student, talking aloud about how you are deciding where to put your cards so that you can make the biggest number possible.
Guided Practice	
25 minutes	● Put partners at a similar level together. Decide which game board they will start with. You can also change to a more challenging game board as they play. ● Give students time to play. Walk around and encourage lots of talking using specific vocabulary and speaking frames. ● Come back as a whole group and reiterate how we need to start with the first digit when comparing numbers to determine which is bigger or smaller.
Independent Practice	
10 minutes	● Have students complete the exit slip. ● When finished with the exit slip students should continue to practice with IXL UG2, Which number is the greatest/least?
Lesson Summary and Closure	
1 minute	"Today we compared numbers by building the biggest number we could. Tomorrow we will compare numbers again using special symbols.
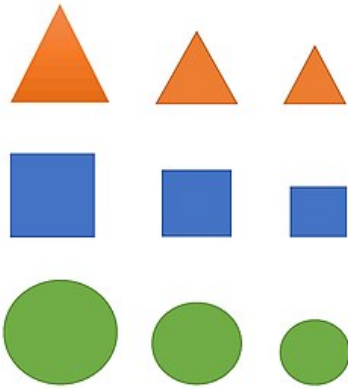
| compare | | tell how things are the same or different |

Lesson 4 of 10

Content Standards
3.1.1.5 Compare and order whole numbers up to 100,000.

Content Objectives
Students will use the greater than, less than, and equal symbols to compare numbers.

WIDA Standards
ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments. **ELD-MA.2-3.Explain.Expressive** Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives
Students will explain their reasoning and solutions using comparative language.

Group Size
Whole group start then small group station rotation

ASSESSMENT & FEEDBACK

Prior Knowledge
Daily Speaking prompt

Formative Assessment
Writing prompt, IXL

Summative Assessment
Unit summative assessment will take place in lesson 10

| Materials |
| --- |
| Vocabulary cards [greater than and less than sheet](#) for each student Glue sticks Student notebooks |

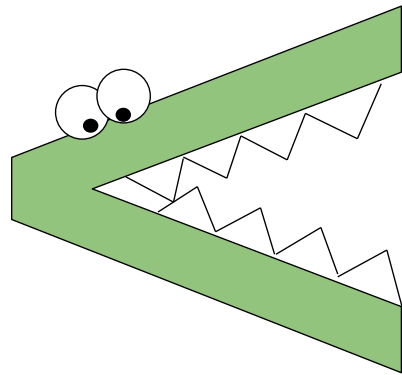| Time	LEARNING ACTIVITIES
Vocabulary	
Tier 2: **greater than:** larger or bigger **less than:** smaller **equal to:** the same amount	
Lesson Launch	
5 minutes	● Display the Daily Speaking prompt slide to review yesterday's concepts. Say, "Let's take a look at this slide. Do you agree or disagree with Lincoln? We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. ● Encourage them to use the words from the word wall.
Instructional Tasks	
Direct Explanation	
5 minutes	● Introduce the vocabulary cards for the day. Talk about how the alligator eats the bigger number and the mouth opens to the bigger number. ● Split the class into three equal groups. They will be rotating through three stations. One station will work on comparing numbers using the symbols. The other station will work on IXL and the third station will add vocabulary to their notebooks. This lesson will follow what the last group will do in their station. ● Have students glue the greater than and less than sheet into their notebook in the vocabulary section.
Teacher Think Aloud	
5 minutes	● "I'm going to look at the 'greater than' sheet first. I'm going to think of two numbers I could put in the blanks to finish the sentence. I'm going to challenge myself and think of a 4 or 5 digit number. Let's see, how about 6,522 is greater than 5,488. I know this because 6,522 has a 6 in the thousands place that is worth 6,000. 5,488 has a 5 in the thousands place that is worth 5,000. 6,000 is more than 5,000."

Guided Practice	
15 minutes x 3 (45 minutes total)	● "Now it's your turn. Talk with your partner and decide together how you will fill in the sentence frame. When you are finished writing, start thinking of some words to add to the box, thinking about more words that mean 'greater than'." ● Give students a couple of minutes to fill in their sentence frame. Have one or two pairs share their answers. The lower group may need to do the whole thing as a group. Brainstorm words to add to the box. Possible answers include, more than, larger, bigger, taller, heavier. Draw attention to the comparative word endings. ● Do the same thing with the 'less than' sheet. Possible words to add to the box of other words that mean 'less than' include, lower than, under, smaller, shorter, lighter, fewer.

Independent Practice	
	● Students will complete IXL 56H, Compare numbers during rotations.

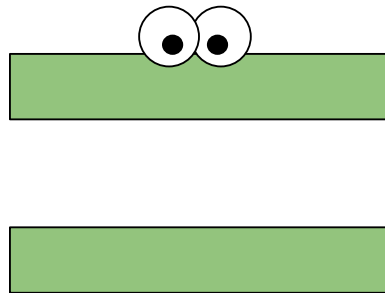| Lesson Summary and Closure	
1 minute	● "You did great work today comparing numbers using the 'greater than' and 'less than' symbols. Tomorrow we will talk about how to put numbers in order from least to greatest and greatest to least."
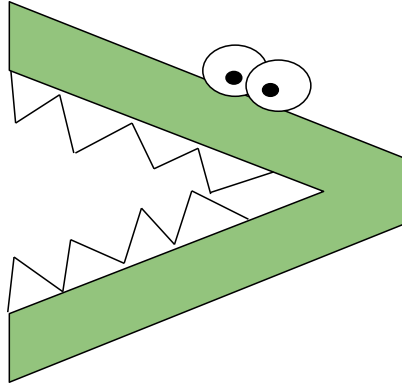
greater than		larger, bigger
less than		smaller
equal to		the same amount

Lesson 5 of 10

Content Standards

3.1.1.5 Compare and order whole numbers up to 100,000.

Content Objectives

Students will put numbers in order from least to greatest and greatest to least.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will explain why they are putting numbers in a particular order.
Students will justify their reasoning for putting a number in a particular place.
Students will write if they agree or disagree with a prompt and explain their answer.

Group Size

Whole group, team teach

ASSESSMENT & FEEDBACK

Prior Knowledge

Speaking Prompt

Formative Assessment

Speaking Frames, writing prompt

Summative Assessment

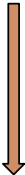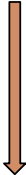Unit summative assessment will take place in lesson 10

Materials

- [Number Card sets](), print each set on a different color of paper and paperclip them together, each pair of students will need all 5 sets
- A copy of the Speaking Frames for each pair of students
- A copy of the [writing prompt]() for each student
- Vocabulary cards

Time	LEARNING ACTIVITIES
Vocabulary	
Tier 2: **Least**: the smallest number **Greatest**: the largest number **Order:** a way of arranging numbers	
Lesson Launch	
5 minutes	● Display the [Daily Speaking prompt]() slide to review yesterday's concepts. Say, "Let's take a look at this slide. What is the same and what is different about these two number sentences? We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. ● Encourage them to use the words from the word wall.
Instructional Tasks	
Direct Explanation	
8 minutes	● Introduce new vocabulary for the day. Talk about different contexts we hear the word "order". Have students give some examples of ways that word is used. When introducing vocabulary make sure students understand that our definitions for these words are specific to what we are doing in math class and their meaning

	may be slightly different outside of math or even in other contexts within math! ● "Today we are going to put numbers in order, let's watch this video to help us understand how to do this."
Teacher Think Aloud	
5 minutes	● "I am going to take this stack of number cards and try and put them in order from least to greatest, that means I need to have the smallest number first. When I look at these numbers I notice that they are all 4 digit numbers. I will look at the thousands place first to decide which is the smallest number. I see that I have 1,000, 2,000, 2,000, 3,000, and 5,000. Just by looking at the thousands place I can see that 1,345 is the smallest so I am going to put that far on the left. Then I notice the that 5,322 is the biggest so I am going to put that on the far right. Now I see two numbers with a 2 in the thousands place and one number with a 3 in the thousands place. Since 3,456 has a 3 in the thousands place I know it is greater than the two numbers with a 2 in the thousands place but less that my number with a 5 in the thousands place. I am going to put it right to the left of 5,322 because I know it has to be second to last. Now I just have to decide where to put 2,842 and 2,451. Since they both have a 2 in the thousands place I won't be able to tell which is bigger by looking at the thousands place. I will have to look at the hundreds place. I see that this number has an 8 in the hundreds place and this number has a 4 in the hundreds place. I know that 800 is greater than 400 so that means that 2,842 is greater than 2,451. Here are all of my numbers in order from least to greatest."
Guided Practice	
20 minutes	● Work through another example set together as a class. Show them the speaking frames and encourage them to use them as they help decide the order. ● Group students in pairs. Work through each set of number cards, one at a time, stopping between each set to discuss solutions as a class. Again, encourage students to use the speaking frames with one another and when speaking to the whole class. One teacher can take a group or pair of students to the back of the room that may need more assistance.
Independent Practice	
22 minutes	● Students complete IXL X92, Order numbers ● Students come back together to discuss the writing prompt and then complete on their own. Make sure to have them talk about their ideas as a whole group and focus on the vocabulary they would want to use to complete the prompt. Make a word bank of important words they may want to use on the board as you discuss. These should not be just math words! ○ Ideas: order, switch, tens, place, digit, wrong
Lesson Summary and Closure	
1 minute	"You have been working so hard looking at the different place values of numbers and comparing them. Tomorrow we are going to start looking at different ways of writing numbers."

greatest	34, 75, 267, **822**	the largest number
least	**34**, 75, 267, 822	the smallest number
order	34, 75, 267, 822 These numbers are arranged from least to greatest.	a way of arranging numbers

Lesson 6 of 10

Content Standards

3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.

Content Objectives

Students will write numbers in expanded form and word form.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will use academic vocabulary to explain their thinking to a speaking prompt.

Group Size

2 stations

ASSESSMENT & FEEDBACK

Prior Knowledge

Daily speaking prompt

Formative Assessment

Whiteboard work, IXL

Summative Assessment

Unit summative assessment will take place in lesson 10

Materials

- [Place Value charts for expanded form](#) laminated for half the class
- Dry erase markers and erasers for each student
- Dry erase boards for each student

● [Place Value Chart for Word Form](#) laminated for half the class

Time	LEARNING ACTIVITIES
Vocabulary	
Tier 3: **expanded form**: a way to write numbers by adding the value of its digits **word form:** writing a number out in words **number word form:** using numbers and words to write a number **standard form:** the usual way of writing numbers	
Lesson Launch	
5 minutes	● Display the [Daily Speaking prompt](#) slide to review yesterday's concepts. Say, "Let's take a look at this slide. Which would you rather have? We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. ● Encourage them to use the words from the word wall.
Instructional Tasks	
Direct Explanation	
20 minutes x 2	● "We will be splitting into two stations today to practice expanded form and word form. You will spend some time at both. You will need to bring a whiteboard and marker with you to each station." ● Split the students into two groups, one that can handle a faster pace with more difficult numbers and one that may need to go a little slower. ● Station 1: 　○ Watch [this video](#) on expanded form 　○ Write numbers on the [place value chart](#) for students to practice on their own charts. Students should put the number given in the top section of the chart and then gradually break it down by looking at each place value. See example.

(40 minutes total)	○ Change the level of difficulty as students show they are ready
	○ If they seem ready, try a couple without the chart and see if they are able to expand a number on their whiteboard, try working the opposite direction as well and giving them the expanded form and writing the standard form
	● Station 2:
	  ○ Watch this video on word form
	  ○ Give each student this sheet with numbers in word form to help with spelling.
	  ○ Write some practice problems on the place value chart for students to practice on the chart and/or white boards
	  ○ Make problems increasingly more difficult as they are able. Work in the opposite direction and give them a problem in word form to write in standard form.

Independent Practice	
15 minutes	● IXL 2GS, Convert between standard and expanded form ● IXL 2GW, Write numbers as words
Lesson Summary and Closure	
1 minute	"Tomorrow we will play a game to practice all the different ways of writing numbers."

expanded form	**1,475** 1,000 + 400 + 70 + 5	a way to write numbers by adding the value of its digits
word form	**1,475** One thousand, four hundred seventy- five	writing a number out in words
standard form	**1,475**	the usual way of writing numbers

number word form	**1,475** 1 thousand, 4 hundreds 7 tens 5 ones	using numbers and words to write a number

Lesson 7 of 10

Content Standards

3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.
3.1.1.2 Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousand, thousands, hundreds, tens and ones.

Content Objectives

Students will be able to express numbers with base-ten blocks, in expanded form, in word form, and in number word form.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will use speaking frames to justify and explain their thinking.

Group Size

Whole group- team teach, partners

ASSESSMENT & FEEDBACK

Prior Knowledge

Daily speaking prompt

Formative Assessment

Number boxes, observation of game play

Summative Assessment

Unit summative assessment will take place in lesson 10

Lesson 7 of 10

Materials

- [Number Box](#) printed back to back for each student
- [Place Value Match](#) cards printed on cardstock so you can't see through them, one set per pair of students
- Speaking Frames for each pair of students
- Whiteboards and markers, optional

Time	LEARNING ACTIVITIES
Vocabulary	
Review from previous lessons	
Lesson Launch	
5 minutes	● Display the [Daily Speaking prompt](#) slide to review yesterday's concepts. Say, "Let's take a look at this slide. How are these two things the same and how are they different? We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. ● Encourage them to use the words from the word wall.
Instructional Tasks	
Direct Explanation	
1 minute	● "Today we are going to practice all the different ways numbers can be represented. We are going to start by completing some name boxes. Then we will play a fun matching game with numbers."
Teacher Think Aloud	
5 minutes	● Display the [Number Box](#) sheet on the TV. Complete the example box together. ● "The directions say that I need to write this number four different ways. I think I will do the base ten blocks first. When I draw base ten blocks I draw a square with a small upside down L in the upper left corner. Since the number has 3 thousands so I will draw three of those. For hundreds I draw a square. This number tells me

I should draw 5 of those. For tens I draw vertical lines. This number shows 4 tens so I will draw four of those. For ones I draw dots so I don't get them confused with thousands or hundreds. I need to draw 8 of those. Now I need to write the number in expanded form. I will break the number apart by place value and write the addition problem for this number. If I forget what these words mean I can just look at the word wall! Expanded form for this number is 3,000+500+40+8. Next I will write word form. When I look at this number I see 3,000 so I will write the words three thousand. I know I need a comma after the word thousand. Then I will write the rest, five hundred forty-eight. Last I need number word form which looks like this, 3 thousands, 5 hundreds, 4 tens, and 8 ones. Now you will complete 3 of these on your own. You may work with a partner if you would like."

Guided Practice	
20 minutes	- Pass out the Number Box sheet to students and have them complete it. One teacher should gather a small group of students who need help to work in the back of the room. When finished, come together to share answers. - Display the speaking frame: I know this is a way to write this number because____. - Go over the Place Value Match game with the students. This game can be played anyway you choose where matches are the point of the game. Warn the students to be careful and look really close because some of them are meant to trick you! Students should use paper or a whiteboard to write the numbers in standard form so they are sure their matches are correct. - Display the speaking frame: I know these are a match because_____. Encourage students to use the speaking frame as they play.
Independent Practice	
28 minutes	Students play the game
Lesson Summary and Closure	
1 minute	"You are experts at thinking about numbers in different ways! Tomorrow we will be working on something a little different with numbers and finding more or less of numbers."

Lesson 8 of 10

Content Standards

3.1.1.3 Find 10,000 more or 10,000 less than a given five-digit number. Find 1,000 more or 1,000 less than a given four- or five- digit number. Find 100 more or 100 less that a given four- or five- digit number.

Content Objectives

Students will find numbers that are more or less than a given number using place value.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will use a sentence frame to say a number that is more than or less than another number.

Group Size

Team teach, partner

ASSESSMENT & FEEDBACK

Prior Knowledge

Daily speaking prompt

Formative Assessment

Exit slip

Summative Assessment

Unit summative assessment will take place in lesson 10

Materials

- [Place Value Mats](#) for each pair of students
- [Base-ten blocks](#) for each pair of students

- Whiteboards and markers for each student
- One 10-sided die for each pair of students
- Dice Game sheets, decide before if you want students to have their own or share, also which versions you want each student to have
- One exit slip per student

Time	LEARNING ACTIVITIES
Vocabulary	
Review from previous lessons	
Lesson Launch	
5 minutes	- Display the Daily Speaking prompt slide to review yesterday's concepts. Say, "Let's take a look at this slide. Is this statement true or false? We are going to practice speaking to our partner today using the sentence frame and words from the word wall that we have been learning the last couple of days." Allow some time to think before having partners share with one another and then with the class. - Encourage them to use the words from the word wall.
Instructional Tasks	
Direct Explanation	
1 minute	"Today we are going to use what we have learned about place value and numbers to think about numbers that are 100 more or 100 less and numbers that are 1,000 more or 1,000 less and even numbers that are 10,000 more or 10,000 less! We are going to use our place value mats and base-ten blocks first."
Teacher Think Aloud	
5 minutes	"Here is my place-value mat. The first thing I'm going to do is build a 4 digit number with my base-ten blocks. I am going to build 3,465. Now I am going to think, what number is 100 more than this number. (write on the board: What number is 100 more than 3,465?) To figure out what number is 100 more I am going to focus on the 100s place. Right now in my hundreds place I have 4 hundreds. I know that more means my number should get bigger, so in order to

	add 100 more, I'm going to take another flat and put it in the 100s place. Now I still have 3 in the thousands place, but I have 5 in the hundreds place, 6 in the tens place, and 5 in the ones place. That means that 100 more than 3,465 is 3,565. Let's try another one."
Guided Practice	
40 minutes	- Pass out base-ten blocks and place value mats to pairs of students. Have them build a starting number and give them some practice problems doing more or less. - Post these sentence frames and then call on a student to use one of them to tell the class their answer: _____ more than _____ is _____. Or _____ less than _____ is _____. - Encourage students to justify and explain their answers using questioning. - How do you know? - Which place did you change? - Why did you change that place? - After some practice pass out whiteboards and have students solve some problems without the blocks. Students who still need the blocks should work in the back of the room with one of the teachers. - Pass out a 10 sided die and the Dice Game sheet - Have each teacher work with a group of students who need a little extra help. All students should use the speaking frames to say their answers aloud.
Independent Practice	
8 minutes	Have each student complete the exit slip
Lesson Summary and Closure	
1 minute	"We've learned a lot about place value! Tomorrow we are going to review everything we have learned."

Content Standards

3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base ten blocks.
3.1.1.2 Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten thousand, thousands, hundreds, tens and ones.
3.1.1.3 Find 10,000 more or 10,000 less than a given five-digit number. Find 1,000 more or 1,000 less than a given four- or five- digit number. Find 100 more or 100 less that a given four- or five- digit number.
3.1.1.5 Compare and order whole numbers up to 100,000.

Content Objectives

Students will review concepts taught in the unit.

WIDA Standards

ELD-MA.2-3.Argue.Expressive Multilingual learners will construct mathematics arguments that create conjecture using definitions, generalize commonalities across cases, justify conclusion steps and strategies in simple patterns, and identify and respond to others' arguments.
ELD-MA.2-3.Explain.Expressive Multilingual learners will construct mathematical explanations that introduce a concept or entity, describe a solution and the steps used to solve a problem with others, and state reasoning used to generate a solution.

Language Objectives

Students will write if they agree or disagree with a prompt and explain their answer.

Group Size

Whole group, independent, small group

ASSESSMENT & FEEDBACK

Prior Knowledge

Writing prompt

Formative Assessment

Writing prompt, review

Summative Assessment

Unit summative assessment will take place in lesson 10

Materials

- A copy of the writing prompt for each person
- Whiteoards and markers for each student
- Chromebooks or devices for each student (students can partner up is there are not enough devices for everyone)

Lesson Launch

15 minutes	"Today we are going to begin with some writing. Let's take a look at this together and think about how we would answer it. We will also make a word bank or words you may want to use in your explanation." - Possible word bank ideas (post for all to use): - Hundreds place, tens place, more, actual, mistake - Students should use the conversation and word bank to write their own response. - Have students share their answers with a couple of classmates

Instructional Tasks

Direct Explanation

1 minute	"Now we are going to do a review of all the skills we have been learning. I would like everyone to get a whiteboard, marker, and their chromebook ready."

Guided Practice

30 minutes	- Have students log into Blooket. - When everyone is ready you should go through the review together in classic mode, one question at a time. A teacher should read aloud every question. If you come across a question that students struggled with, have a class discussion about how to solve it correctly.

Independent Practice

15 minutes	Once you have gone through the whole review as a class, have the students complete it again in one of the game modes. This is a great time to have each

	teacher pull some students aside who need some extra help with any concepts.
Lesson Summary and Closure	
1 minute	● "Tomorrow we will practice our vocabulary that we have been learning and for this unit and take a little quiz. "

Lesson 10 of 10

Group Size
Whole group, independent

ASSESSMENT & FEEDBACK

Prior Knowledge
Review

Summative Assessment
Unit Assessment

Materials
A copy of the assessment for each student

Lesson Launch	
1 minute	"Today we are going to see everything you have learned throughout these last couple of weeks."

Instructional Tasks

Guided Practice	
15 minutes	Do a quick review with the students before giving the assessment. Give them some practice problems to try and go over vocabulary again.

Independent Practice	
30-45 minutes	"I will read each question aloud to you. I want you to try and answer each question on your own. If you have questions as we go along, please raise your hand." - Take any small groups you have time for to reteach concepts in small groups as necessary

Lesson Summary and Closure	
1 minute	● "You are all number rockstars! You did great!"

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