FAMILY FOUNDATIONS ACADEMY CHARTER SCHOOL

CURRICULUM MATH LESSON WITH ASSESSMENT

Go Math Chapter One

Know, Understand, Do

(What I want my students to know, and understand, and do at the end of the unit.
Refer to your standards and/or anchors.)

Unit Topic:

By completing this unit, students will...

Know (facts, formulas, vocabulary – written in terms or phrases)	• Place Value • Decimals • Order of Operations •
Understand (concepts, principles, generalizations – written as ideas or complete thoughts)	It's important to understand that... .•Read and write whole numbers to the hundred millions and decimals to the thousandths. • Solve expressions and equations using order of operations • Perform four operations on whole numbers. • Compare and order decimals to the thousandths.
Do (skills, thinking skills – starts with a verb)	Students will be able to... .• Evaluate numerical expressions with parenthesis, brackets, or braces. • Write numerical expressions when given a word problem, or scenario in words and use words to interpret numerical expressions. • Explain the "ten-times" or 1/10 relationships for place values in multi-digit numbers moving right or left across the places. • Recognize and explain patterns of the number of zeros and the placement of the decimal point in a product. • Compare decimals to the thousandths based on the value of the digits in each place using the symbols: >,<, = when presented as base 10 numerals, number names, or expanded form. • Use the standard algorithm to multiply 3-digit whole numbers by one-digit whole numbers. • Calculate whole number quotients with 4-digit dividends and 2-digit divisors and explain answers with equations, rectangular arrays, and area models.

Decision 1: Student Learning Map of Unit

(Provides teachers with the concepts prior to planning and provides students with a map of the unit.)

Unit Topic: _____Place Value Go Math Chapter 1_____Days: __30_____

Subject:_____Mathematics_____Grade:_____ 5th_____

Key Learning (Big Idea):

- **Unit Essential Question:** How can you use place value, multiplication, and expressions to represent and solve problems?
- How do you read, write, and represent decimals through the thousandths?
- How can you use place value to compare and order decimals?

Concept: Place Value Recognize the 10 to 1 relationship among place-value positions. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Concept: Multiplication Multiply by 1-digit numbers. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Concept: Multiply by 2-digit numbers. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm
Lesson Essential Question(s): How can you describe the relationship between two place-value positions?	Lesson Essential Question(s): How do you multiply by 1-digit numbers?	Lesson Essential Question(s): How do you multiply by 2-digit numbers?
Vocabulary: 1. multiply 2. place value	Vocabulary: estimate	Vocabulary:

Concept: Place Value Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Concept: Write and evaluate repeated factors in exponent form. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Concept: Use multiplication to solve division problems. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Lesson Essential Question(s): How do you read, write, and represent whole numbers through hundred millions?	Lesson Essential Question(s): How can you use an exponent to show powers of 10?	Lesson Essential Question(s): How is multiplication used to solve a division problem?
Vocabulary: Period	Vocabulary: 1. base 2. exponent	Vocabulary: 1. inverse operations 2. Distributive Property 3. quotient

Concept: Use properties of operations to solve problems. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based	Concept: Use a basic fact and a pattern to multiply mentally by multiples of 10,100, and 1,000. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.A.2 Explain patterns in the number	Concept: Use the strategy solve a simpler problem to solve problems. Standard/Anchor: CCSS.MATH.CONTENT.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit

on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Lesson Essential Question(s): How can you use properties of operations to solve problems?	Lesson Essential Question(s): How can you use a basic fact and a pattern to multiply by a 2-digit number?	Lesson Essential Question(s): How can you use the strategy solve a simpler problem to help you solve a division problem?
Vocabulary: 1. Distributive Property 2. factor 3. product	Vocabulary: estimate	Vocabulary:

Additional Information (Materials):

Decision 2: Culminating Activity
Summative Assessment

(Activity that students will do with the unit's concepts and skills to demonstrate mastery.)

Unit Topic:

Title/Concept	In the Chef's Kitchen Project
Culminating Activity Essential Question	Why does a chef need to know which menu items are the most popular?
Paragraph Description	Students will be asked to prepare a written report, poster or graph. Students will use the information on page 2 of their GO Math Textbooks to solve the word problem and represent their findings.
Mini-Lesson (Quick lesson prior to activity.)	The teacher will bring a recipe from home and "think aloud" to determine the amount of food needed to prepare the recipe for the whole class. The teacher would ask students if they needed to use multiplication or division. Extension: Bring in store circulars and have students calculate the total cost of the food items.
Time (In Days)	7 Days
Steps or Task Analysis (Details of activity.)	1. Students will read the opening sentences of In The Chef's Kitchen, along with the description of the project. 2. Students will be asked to describe the project in their own words. 3. Explain the Project Scoring Rubric located on page 2 of the TE. 4. Extra Credit/Extension students will calculate the total cost using store circulars. 5. Could we determine the cheapest store to purchase needed items?

Summarize/Share	Students will present their projects clearly and completely.
Differentiation	Students who need an additional challenge will be asked to complete a cost comparison analysis between two stores using circulars and the items needed in the recipe.
Revise/Review	Students who need additional scaffolding will have a graphic organizer to guide their thinking with the explicit math facts needed to solve the problem.
Resources & Materials	Store circulars, poster boards as needed, recipe cards.

Decision 3: Rubric for Culminating Activity

Unit Topic:

Scale ⇨ / ⇩ Criteria	4	3	2	1
A			Demonstrates a complete understanding of the project. Makes full use of the Important Facts. Presents Project Clearly and Completely.	
B				Demonstrates a partial understanding of the project. Uses the Important Facts, but makes errors in applying them. Makes a good, but incomplete attempt at presenting the project.
Needs Revision Students who do not meet the A/B criteria will be given descriptive feedback and a chance to revise since this is the first unit project of the year.				

Copy this page as needed for additional assessments.
Decision 4: Student Assessments #1

**(How students will indicate learning and understanding of the concepts in the unit.
Note: Can have multiple assessments, one on each page.)**

Unit Topic:

Title	Go Math Chapter Assessment
Description	This assessment will be given online to determine mastery of the chapter 1 concepts.
Time (In Days)	1
Differentiation	Students who need an additional challenge will be given test B which is not multiple choice.
Revise/Review	Students who score below a C will receive small group instruction and re-test.
Resources & Materials	ThinkCentral

Decision 5: Launch Activity

(Develops student interest by providing hook to motivate and link to prior knowledge.)

Unit Topic:

Launch Activity Essential Question or Name of Activity	What do I already know about place value, multiplication, and expressions?
Description	Students will complete a KWL of topics pertaining to chapter 1.
Time (Days)	1
Mini-Lesson (Quick lesson prior to activity.)	The teacher will demonstrate the iTools, Real World Videos, Carmen Sandiego, Animated Math Models, and Mega Math to engage and excite students about math.
Steps or Task Analysis (Details of activity.)	1. Demonstrate Online Tools 2. KWL
Summarize/Share	Teacher will summarize what they want to know and already know about the above concepts.
Differentiation	Students who demonstrate great understanding of the concepts will be given enrichment activities as needed.
Revise/Review	
Resources & Materials	

Copy this page as needed for additional lessons.
Decision 6: Acquisition Lesson #1

(Lesson plan necessary for student learning. You will have multiple Acquisition Lessons within a unit. Not all parts need to be filled in; use only those applicable.)

Unit Topic:

Standards:
Anchors:

Lesson Essential Question	How can you describe the relationship between two place value positions?
Time (In Days)	2
Activating Thinking (Hook to motivate, link to prior knowledge)	Using iTools the teacher will model tens to 100. The teacher will record the numbers on the board. Students will be asked to explain how they recognized multiples of 10.
Acceleration/Previewing (Preview of key vocabulary, concepts, and skills prior to learning)	Period
Teaching Activities and Strategies (Examples: Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers) Key Questions: Add throughout the lesson	The teacher will review with students the values of each type of base ten block and the relationship from one type to the next. Teacher will teach that each base ten block is one tenth of the base ten block to its left. Students will be given place value charts to use to find numbers that are ten times as much or one tenth as much of the original numbers.
Summarizing Strategies (Learners summarize and answer LEQ)	How can you describe the relationship between two place value positions? Students will write a letter to an absent student and explain.
Extending/Refining Activities	Students will be asked to write a number that has four digits with the same number in all the places, such as 4,444. Students will circle the digit with the greatest value and underline the digit with the smallest value.
Assignment and/or Assessment	Pages 7 and 8
Re-Teaching Focus &	

Strategy	Place Value Chart will be used as needed
Differentiation	Teacher will extend the places for students who need an additional challenge
Review & Revise (Teacher Reflection)	
Resources & Materials	Base Ten Blocks, Website

Decision 6: Acquisition Lesson #2

(Lesson plan necessary for student learning. You will have multiple Acquisition Lessons within a unit. Not all parts need to be filled in; use only those applicable.)

Unit Topic:

Standards:
Anchors:

Lesson Essential Question	How do you read, write, and represent whole numbers through hundred thousands?
Time (In Days)	2
Activating Thinking (Hook to motivate, link to prior knowledge)	The teacher will introduce the lesson by discussing the sun's size and it's location in our solar system. Explain that the distances between the sun and the planets are very large numbers.
Acceleration/Previewing (Preview of key vocabulary, concepts, and skills prior to learning)	Period
Teaching Activities and Strategies (Examples: Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers) Key Questions: Add throughout the lesson	Students will describe the pattern of place value names in the chart. They will be asked how to identify the value of the digit 1 in 1,392,000? Students will be asked what separates periods? What is the function of zero in our number system? The teacher will teach the value of 1/10 times the value of the place to its left. Students will explain how to find the unknown factor in number systems.
Summarizing Strategies	

(Learners summarize and answer LEQ)	How do you read, write, and represent whole numbers through hundred millions? Students will complete a 3-2-1 as it relates to this topic.
Extending/Refining Activities	Error Analysis Page 12 problem 20
Assignment and/or Assessment	Pages 9-12
Re-Teaching Focus & Strategy	Place Value Chart will be used as needed
Differentiation	Teacher will extend the places for students who need an additional challenge
Review & Revise (Teacher Reflection)	
Resources & Materials	Base Ten Blocks, Website

Decision 6: Acquisition Lesson #3

(Lesson plan necessary for student learning. You will have multiple Acquisition Lessons within a unit. Not all parts need to be filled in; use only those applicable.)

Unit Topic:

Standards:
Anchors:

Lesson Essential Question	How do you use properties of operations to solve problems?
Time (In Days)	5 Days
Activating Thinking (Hook to motivate, link to prior knowledge)	Using iTools students will model the Commutative and Associative Properties with guidance and modeling by the teacher.
Acceleration/Previewing (Preview of key vocabulary, concepts, and skills prior to learning)	Commutative and Associative Properties
Teaching Activities and Strategies (Examples: Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers)	The teacher will explain how the Commutative and Associative Properties differ. Students will be asked to find the unnecessary numbers in math

Key Questions: Add throughout the lesson	problems. The teacher will demonstrate a variety of methods to solve problems. The students will be asked to identify problems that are easy to solve mentally. The teacher will introduce the distributive property. The teacher will then introduce order of operations. When subtracting which property should you use and why? Students will be asked to identify missing numbers in equations.
Summarizing Strategies (Learners summarize and answer LEQ)	How can you use properties of operations to solve problems? Write a letter to an absent student explaining.
Extending/Refining Activities	Students will be asked to determine whether the associative property works for subtraction. Why or why not? Does the Commutative Property work with division? Why or why not? Explain. How can you mentally find the product of 8 and 45 using the distributive property?
Assignment and/or Assessment	Pages 13-16
Re-Teaching Focus & Strategy	Math Talk Chapter 15 TE
Differentiation	Teacher will extend the places for students who need an additional challenge
Review & Revise (Teacher Reflection)	
Resources & Materials	Base Ten Blocks, Website

Decision 6: Acquisition Lesson #4

(Lesson plan necessary for student learning. You will have multiple Acquisition Lessons within a unit. Not all parts need to be filled in; use only those applicable.)

Unit Topic:

Standards:
Anchors:

Lesson Essential	How can you use an exponent to show powers of 10?

Question	
Time (In Days)	2
Activating Thinking (Hook to motivate, link to prior knowledge)	Teacher will describe the process of multiplying by ten and ask students for observations.
Acceleration/Previewing (Preview of key vocabulary, concepts, and skills prior to learning)	Base and Exponent
Teaching Activities and Strategies (Examples: Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers) Key Questions: Add throughout the lesson	Students will be asked to identify the base and exponents. Students will be asked what operation will a base and exponent represent. Students will be asked what they notice about the answers as exponents increase. Students will be asked how they identify patterns when multiplying. When a number is in exponent form, which number is used as the repeated factor? What number tells how many times to repeat a factor? Students will be asked to use a pattern to find the value of an expression.
Summarizing Strategies (Learners summarize and answer LEQ)	How can you use an exponent to show powers of 10? Students will write the Most Important Thing with regards to this question.
Extending/Refining Activities	Students will be asked to find the unknown exponent in one factor.
Assignment and/or Assessment	Pages 17-20
Re-Teaching Focus & Strategy	Fluency Builders
Differentiation	Teacher will extend the places for students who need an additional challenge
Review & Revise (Teacher Reflection)	
Resources & Materials	Base Ten Blocks, Website, Math boards

Decision 6: Acquisition Lesson #5

(Lesson plan necessary for student learning. You will have multiple Acquisition Lessons within a unit. Not all parts need to be filled in; use only those applicable.)

Unit Topic:

Standards:
Anchors:

Lesson Essential Question	How can you use a basic fact and a pattern to multiply a two digit number?
Time (In Days)	2
Activating Thinking (Hook to motivate, link to prior knowledge)	Solve the problem of the day
Acceleration/Previewing (Preview of key vocabulary, concepts, and skills prior to learning)	Exponent, increases, decreases
Teaching Activities and Strategies (Examples: Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers) Key Questions: Add throughout the lesson	Teacher will instruct about how to use patterns when multiplying. The teacher will review the Associative and Commutative properties of multiplication. Students will use math boards to share their thinking for problems in the share and show section on page 22. Students will be asked to provide an example of when a multiplication expression has a product with more zeros than factors. They will explain their thinking. The teacher will relate patterns in multiplication with exponents. Students will be able to explain the relationship and how they use the number of zeros to identify the powers of ten.
Summarizing Strategies (Learners summarize and answer LEQ)	How can you describe the relationship between two place value positions? Students will write a letter to an absent student and explain.
Extending/Refining Activities	Students will be asked to write a number that has four digits with the same number in all the places, such as 4,444. Students will circle the digit with the greatest value and underline the digit with the smallest value.
Assignment and/or Assessment	Pages 21-23

Re-Teaching Focus & Strategy	Math Talk
Differentiation	Teacher will extend the places for students who need an additional challenge
Review & Revise (Teacher Reflection)	Quick Check Exercises 3 and 4.
Resources & Materials	Website Math Boards

Decision 7: Extending Thinking Lesson

(Lesson plan for extending thinking lesson involving higher level thinking skills. You would only have a few of these per unit.)

Unit Topic:

Standards:
Anchors:

Lesson Essential Question	
Time (Days)	
Mini-Lesson (Quick lesson prior to activity.)	
Activity or Task (Details of activity.)	
Summarize/Share (Learners summarize and answer LEQ)	
Assignment and/or	

Assessment	
Differentiation	
Revise/Review (Teacher Reflection)	
Resources & Materials	