Fifth Grade Math
Overview
2018-2019

This document is designed to provide parents/guardians/community an overview of the curriculum taught in the FBISD classroom. It includes pacing, TEKS, Unit Overview, Big Ideas and Essential Questions, Concepts and Instructional Model.

Definitions:

Overview – The content in this document provides an overview of the pacing and concepts covered in a subject for the year.

TEKS – Texas Essential Knowledge and Skills (TEKS) are the state standards for what students should know and be able to do.

Process Standards – The process standards describe ways in which students are expected to engage in the content. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use knowledge learned efficiently and effectively in daily life.

Unit Overview – The unit overview provides a brief description of the concepts covered in each unit.

Big Ideas and Essential Questions – Big ideas create connections in learning. They anchor all the smaller isolated, facts together in a unit. Essential questions (questions that allow students to go deep in thinking) should answer the big ideas. Students should not be able to answer Essential Questions in one sentence or less. Big ideas should be the underlying concepts, themes, or issues that bring meaning to content.

Concept – A subtopic of the main topic of the unit

Instructional Model – The structures, guidelines or model in which students engage in a particular content that ensures understanding of that content.

Parent Supports:

The following resources provide parents with ideas to support students’ understanding

- Advice for Parents: Helping Children with Math
- How Math Should be Taught
- The Most Important Mathematical Habit of Mind
**Instructional Model:**
The instructional model for mathematics in FBISD consists of two parts.
The first part is how students learn math and how math is instructed. Instruction in mathematics should follow the Concrete-Representational-Abstract Model (CRA). The CRA model allows students to access mathematics content first through a concrete approach (“doing” stage) then representational (“seeing” stage) and then finally abstract (“symbolic” stage). The CRA model allows students to conceptually develop concepts so they have a deeper understanding of the mathematics and are able to apply and transfer their understanding across concepts and contents. The CRA model is implemented in grades K-12 in FBISD.
The second part of the instructional model is the lesson cycle. In Grades K – 7, the lesson cycle follows a Math Workshop/Guided Math Lesson Cycle. Components of this lesson include: Number Sense Routine, Task and Share, Focus Lesson, Guided Math, Workstations, and Student Reflection.

**Accepted Resources:**
*Elementary: [https://www.fortbendisd.com/Page/93917](https://www.fortbendisd.com/Page/93917)*

**Process Standards:**
Mathematical Process Standards: The student uses mathematical process to acquire and demonstrate mathematical understanding. The student is expected to:

- 5.1A Apply mathematics to problems arising in everyday life, society, and the workplace
- 5.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
- 5.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
- 5.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
- 5.1E Create and use representations to organize, record, and communicate mathematical ideas
- 5.1F Analyze mathematical relationships to connect and communicate mathematical ideas
- 5.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

**Grading Period 1**

**Unit 1: Graphing and Setting Up Guided Math**
Estimated Date Range: August 15 - 21

**Unit Overview:** In this unit, students will get an introduction to graphing. This unit is set up with graphing ideas to help teachers and students to learn about each other. Though the focus of graphing in fifth grade is to represent fractional and decimal data, students will be creating a frequency and bar graph during this first week to analyze information using whole numbers. Students have had previous experiences in 4th grade with bar graphs, frequency tables, dot plots and stem and leaf plots. When students exit 5th grade they should master representing and solving problems with graphs. Setting up the routines for Guided Math and several work stations is the primary focus for this unit. The work stations will provide teachers with information about concepts students should have mastered in fourth grade.

**Big Ideas:**
- Data helps us makes sense of information in our world.
- Organization of information shows relationships.

**Essential Questions:**
### Concepts within Unit #1

<table>
<thead>
<tr>
<th>Concept #1: Graphing and Setting Up Guided Math</th>
<th>TEKS [Link to TEKS]</th>
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<tbody>
<tr>
<td></td>
<td>5.3K, 5.9A, 5.9C</td>
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</tbody>
</table>

### Unit 2: Whole Number Operations and Graphing

**Estimated Date Range: Aug. 22 – Sept. 21**

**Unit Overview:** In this unit, students will estimate sums, differences, products and quotients. Students will also add, subtract, multiply and divide whole numbers with and without a problem solving setting. They will find the perimeter, area and volume of figures. Students will use their knowledge of multiplication and factors to identify prime and composite numbers. Students will also use their previous knowledge with graphing to solve one and two step word problems involving.

**Big Ideas:**
- Addition and its inversely related operation, subtraction, as well as multiplication and division, are powerful foundational concepts in mathematics, with applications to many problem situations and connections to many other topics.
- Solving multi step problems allows students to become better problem solvers in their everyday lives.
- When placed in context, perimeter area and volume allow students to use reasonableness to determine when a real-world problem involves perimeter, area and volume.
- Data summarized in graphs help us make sense of information in our world.

**Essential Questions:**
- Why is it important to add and subtract positive rational numbers fluently?
- What is the importance of adding, subtracting, multiplying and dividing numbers?
- Why is solving problems in multiple ways important?
- What is the importance of students understanding perimeter, area and volume?
- How do real world situations support the understanding of perimeter, area and volume?
- How does a graph help with representing data?

<table>
<thead>
<tr>
<th>Concepts within Unit #2</th>
<th>TEKS [Link to TEKS]</th>
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<tbody>
<tr>
<td>Concept #1: Estimating and Finding Sums with Whole Numbers</td>
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</tr>
<tr>
<td>Concept #2: Estimating and Finding products with Whole Numbers</td>
<td>5.3A, 5.3B, 5.4B</td>
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<tr>
<td>Concept #3: Perimeter, Area and Volume</td>
<td>5.3B, 5.3K, 5.4B, 5.4H</td>
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<tr>
<td>Concept #4: Patterns, Estimating and Finding Quotients</td>
<td>5.3A, 5.3C, 5.4B</td>
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<tr>
<td>Concept #5: Prime and Composite Numbers</td>
<td>5.4A</td>
</tr>
<tr>
<td>Concept #6: Graphing with Whole Numbers</td>
<td>5.9A, 5.9C</td>
</tr>
</tbody>
</table>

### Unit 3: Decimals

**Estimated Date Range: Sept. 24 – Oct. 12**

**Unit Overview:** In this unit, students will compare and order two decimals to thousandths and represent comparisons using symbols. They will also represent the value of digits in decimals through the thousandths place using concrete objects, pictorial models, expanded form/notation and numerals. Students will also round decimals to the tenths or hundredths place.

**Big Ideas:**
- The base 10 number system uses digits 0-9, groups of 10 and place value to understand number structure.
- Numbers, expressions, and measures can be compared by their relative values.
- Estimation in a necessary skill for students to master because it is very useful in everyday calculations of all kind.
**Essential Questions:**
- How does the position of a digit in a number affect its value?
- How do you compare two numbers?
- Why is estimation important for students?

<table>
<thead>
<tr>
<th>Concepts within Unit #3</th>
<th>TEKS</th>
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<tbody>
<tr>
<td><strong>Concept #1:</strong> Represent the Value of a Digit</td>
<td>5.2A</td>
</tr>
<tr>
<td><strong>Concept #2:</strong> Compare and Order Decimals</td>
<td>5.2A, 5.2B, 5.2C</td>
</tr>
<tr>
<td><strong>Concept #3:</strong> Rounding Decimals</td>
<td>5.3C</td>
</tr>
</tbody>
</table>

**Unit 4: Decimal Operations**
Estimated Date Range: Oct. 15 – Nov. 9

**Unit Overview:** In this unit, students will apply their understanding of operations with whole numbers to add, subtract, multiply and divide decimals, including situations involving money and determining the area, perimeter and volume of shapes. Students will represent these decimal operations by using objects, pictorial models and algorithms. They will also use strategies based on understanding place value and properties of operations. Lastly, students will graph and analyze data using stem-and-leaf plots. Students will transition in future grades to negative numbers.

**Big Ideas:**
- Operations create relationships between numbers
- Students will understand that rules for whole number operations also apply to decimal operations
- Data helps us make sense of information in our world.

**Essential Questions:**
- Operations create relationships between numbers
- Students will understand that rules for whole number operations also apply to decimal operations
- Data helps us make sense of information in our world.

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<thead>
<tr>
<th>Concepts within Unit #4</th>
<th>TEKS</th>
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<tbody>
<tr>
<td><strong>Concept #1:</strong> Adding and Subtracting Decimals</td>
<td>5.3A, 5.3K</td>
</tr>
<tr>
<td><strong>Concept #2:</strong> Solve for Products of Decimals</td>
<td>5.3A, 5.3E</td>
</tr>
</tbody>
</table>

**Grading Period 2**

**Unit 4: Decimal Operations (Continued)**
Estimated Date Range: Oct. 15 – Nov. 9

**Unit Overview:** In this unit, students will apply their understanding of operations with whole numbers to add, subtract, multiply and divide decimals, including situations involving money and determining the area, perimeter and volume of shapes. Students will represent these decimal operations by using objects, pictorial models and algorithms. They will also use strategies based on understanding place value and properties of operations. Lastly, students will graph and analyze data using stem-and-leaf plots. Students will transition in future grades to negative numbers.

**Big Ideas:**
- Operations create relationships between numbers
- Students will understand that rules for whole number operations also apply to decimal operations
- Data helps us make sense of information in our world.

**Essential Questions:**
- Operations create relationships between numbers
- Students will understand that rules for whole number operations also apply to decimal operations
- Data helps us make sense of information in our world.
### Unit Overview:  
In this unit, students will classify two-dimensional figures in a hierarchy of sets and subsets based on their attributes and properties. In previous grades students classified 2D and 3D shapes based on attributes and characteristics. Students will graph ordered pairs of numbers in the first quadrant of the coordinate plane, and create, and analyze data using a scatter plot. Students in future grades will graph ordered pairs in all four quadrants of the coordinate plane and continue to analyze data in a variety of graphical representations.

#### Big Ideas:
- Mathematicians can identify specific attributes of geometric figures.
- Patterns help students solve real world problems.
- Data can be displayed using a variety of charts, tables, and graphs.

#### Essential Questions:
- What are ways we can describe two dimensional figures?
- Why is it important to be able to describe geometric figures?
- Why is finding patterns useful?
- What are some ways we can organize data?

### Concepts within Unit #5

<table>
<thead>
<tr>
<th>Concept #1: Two-Dimensional Shapes</th>
<th>5.5A</th>
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<tbody>
<tr>
<td>Concept #2: Ordered Pairs</td>
<td>5.8A, 5.8B, 5.8C</td>
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<tr>
<td>Concept #3: Scatterplots</td>
<td>5.90B, 5.9C</td>
</tr>
</tbody>
</table>

### Unit 6: Fractions

#### Unit Overview:  
In this unit, students will perform mathematical operations using fractions. Fourth grade students added and subtracted fractions with like denominators. Students will represent problems that involve operations with fractions, not just solve. Addition and subtraction will take place with fractions and fractions, fractions and whole numbers and fractions and mixed numbers. Fractions may not have the same denominator so students will need to use strategies such as decomposing and composing fractions not just finding a common denominator. Multiplication and division of fractions involves a fraction and a whole number only. Students will explore creating and analyzing data with dot plots involving fractional data.

#### Big Ideas:
- Good mathematicians know that mathematics provides a variety of ways to express relationships between numbers.
- Data helps us makes sense of information in our world.

#### Essential Questions:
- How do we show relationships between numbers?
- How can models help us see how numbers are related?
- What kinds of problems can we solve when we analyze data?
- How does a graph help with representing data?

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<thead>
<tr>
<th>Concepts within Unit #6</th>
<th>TEKS</th>
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<tbody>
<tr>
<td>Concept #1: Prime and Composite Numbers</td>
<td>5.4A</td>
</tr>
<tr>
<td>Concept #2: Adding and Subtracting Fractions</td>
<td>5.3H, 5.3K</td>
</tr>
</tbody>
</table>
Grading Period 3

Unit 6: Fractions (Continued)
Estimated Date Range: Dec. 10 – Feb. 1

Unit Overview: In this unit, students will perform mathematical operations using fractions. Fourth grade students added and subtracted fractions with like denominators. Students will represent problems that involve operations with fractions, not just solve. Addition and subtraction will take place with fractions and fractions, fractions and whole numbers and fractions and mixed numbers. Fractions may not have the same denominator so students will need to use strategies such as decomposing and composing fractions not just finding a common denominator. Multiplication and division of fractions involves a fraction and a whole number only. Students will explore creating and analyzing data with dot plots involving fractional data.

Big Ideas:
- Good mathematicians know that mathematics provides a variety of ways to express relationships between numbers.
- Data helps us make sense of information in our world.

Essential Questions:
- How do we show relationships between numbers?
- How can models help us see how numbers are related?
- What kinds of problems can we solve when we analyze data?
- How does a graph help with representing data?

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<thead>
<tr>
<th>Concepts within Unit #6</th>
<th>TEKS Link to TEKS</th>
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</thead>
<tbody>
<tr>
<td>Concept #2: Adding and Subtracting Fractions</td>
<td>5.3H, 5.3K</td>
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<tr>
<td>Concept #3: Multiplying Fractions and Whole Numbers</td>
<td>5.3I</td>
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<tr>
<td>Concept #4: Dividing Fractions</td>
<td>5.3I, 5.3L</td>
</tr>
<tr>
<td>Concept #5: Dot Plots with Fractions</td>
<td>5.3H, 5.3K, 5.9A, 5.9C</td>
</tr>
</tbody>
</table>

Unit 7: Expressions and Equations
Estimated Date Range: February 4 - 14

Unit Overview: In this unit, students will represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter as a variable. Students will determine the numerical pattern given a rule and determine the rule from a numerical pattern. They will also solve expressions that contain parentheses and brackets and describe the meaning of their use in the expression. This is laying the foundation for future algebraic understanding.

Big Ideas:
- A problem solver understands what has been done, knows why the process was appropriate, and can support it with reasons and evidence.
- The context of a problem determines the reasonableness of a solution.
- The ability to solve problems is the heart of mathematics.

Essential Questions:
- How do I know where to begin when solving a problem?
- How do I know when a result is reasonable?
- Why is the ability to solve problems the heart of mathematics?

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<thead>
<tr>
<th>Concepts within Unit #7</th>
<th>TEKS Link to TEKS</th>
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<tr>
<td>Concept #1: Numerical Patterns</td>
<td>5.3K, 5.4C, 5.4D, 5.8C</td>
</tr>
<tr>
<td>Concept #2: Numerical Expressions</td>
<td>5.3B, 5.3C, 5.4E, 5.4F</td>
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</tbody>
</table>
Unit 8: Measurement
Estimated Date Range: Feb. 18 – March 1

Unit Overview: In this unit, students will build off their knowledge of customary and metric units of measure to be able to convert within customary or metric measurements. Students will also solve for area, perimeter and volume of shapes understanding that area and perimeter are measures for two-dimensional shapes while volume is measured for three-dimensional shapes. This will build to calculating surface area of shapes in future grades.

Big Ideas:
- Good mathematicians know that measurement helps us understand and describe our world.
- To solve real-life problems as well as mathematical problems, you need to understand the relationship between perimeter, area, and volume.
- Fluently solving problems using all four operations, equips students with vital tools in life that can help students become confident, efficient, and effective problem-solver.

Essential Questions:
- How does measurement help us understand and describe our world?
- Why is it important to understand the relationship between perimeter, area, and volume?
- Why is it important to solve math problems with multiple concepts?

Concepts within Unit #8

<table>
<thead>
<tr>
<th>Concept #1: Converting Customary Units</th>
<th>TEKS Link to TEKS</th>
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<tbody>
<tr>
<td>Concept #2: Converting Metric Units</td>
<td>5.3B, 5.3E, 5.7A</td>
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<tr>
<td>Concept #3: Area, Perimeter, and Volume</td>
<td>5.3B, 5.3E, 5.3K, 5.4G, 5.4H, 5.6A, 5.6B</td>
</tr>
</tbody>
</table>

Unit 9: Personal Financial Literacy
Estimated Date Range: March 4 - 8

Unit Overview: In this unit, students will define income, payroll, sales, and property tax and explain the difference between gross income and net income. Students will identify the advantages and disadvantages of different types of payment, including check, credit card, debit card, and electronic payments and develop a way of keeping track of their spending and income. Students will build off their knowledge of expenses and saving describe how they might balance a budget when expenses exceed income. Students will continue to learn about financial matters, such as borrowing, saving, spending and budgeting. Learning to be fiscally responsible will help students make financial decisions for the rest of their lives.

Big Ideas:
- Important personal finance knowledge and skills help people become financially capable and responsible to make decisions when it comes to satisfying needs and wants.
- Understanding finances and using them effectively are essential to financial security.
- Mathematical operations and strategies are used to represent and solve a variety of problem situations in everyday life.

Essential Questions:
- How can a person be financially secure?
- Why is fluency in computing important in life?
- How does understanding numerical operations help us use money?

Concepts within Unit #9

<table>
<thead>
<tr>
<th>Concept #1: Personal Financial Literacy</th>
<th>TEKS Link to TEKS</th>
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<tbody>
<tr>
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<td>5.3K, 5.10A, 5.10B, 5.10C, 5.10D, 5.10E, 5.10F</td>
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</table>
## Unit 10: Operations with Word Problems

**Estimated Date Range:** March 18 - 29

**Unit Overview:** In this unit, students will review adding, subtracting, multiplying and dividing whole numbers, decimals and fractions in problem solving situations. They will represent problems with concrete models and visual representations as well as use strategies based on understanding place value and properties of operations, not just algorithms to solve. Students will transition in future grades to more algebraic equations that involve negative numbers.

**Big Ideas:**
- Addition and its inversely related operation, subtraction, as well as multiplication and division, are powerful foundational concepts in mathematics, with applications to many problem situations and connections to many other topics.
- Solving multi step problems allows students to become better problem solvers in their everyday lives.
- Operations create relationships between numbers.
- Rules for whole number operations also apply to decimal operations.

**Essential Questions:**
- Why is it important to add and subtract positive rational numbers fluently?
- What is the importance of adding, subtracting, multiplying and dividing numbers?
- Why is solving problems in multiple ways important?
- How does the position of a digit in a number affect its value?
- How do operations with whole numbers support understanding decimal operations?

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<tr>
<th>Concepts within Unit #10</th>
<th>TEKS Link to TEKS</th>
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<tr>
<td>Concept #1: Operations with Word Problems</td>
<td>4.3E, 4.3F</td>
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<tr>
<td>Concept #2:</td>
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<td>Concept #3:</td>
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## Unit 11: STAAR Review

**Estimated Date Range:** April 1 - 8

**Unit Overview:**

**Big Ideas:**
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**Essential Questions:**
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<thead>
<tr>
<th>Concepts within Unit #11</th>
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<tbody>
<tr>
<td>Concept #1:</td>
<td>TEKS determined by the classroom teacher based on assessment data</td>
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<tr>
<td>Concept #2:</td>
<td></td>
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<td>Concept #3:</td>
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## Unit 12: Strengthening Fifth Grade Skills

**Estimated Date Range:** April 10 – May 24

**Unit Overview:** In this unit, students will review fifth grade skills to solidify their understanding so they are successful sixth graders. They will focus primarily on numeracy and computational skills as well as measurement.

**Big Ideas:**
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**Grading Period 4**

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**Unit 10: Operations with Word Problems**

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**Unit 11: STAAR Review**

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**Unit 12: Strengthening Fifth Grade Skills**
- The base 10 number system uses digits 0-9, groups of 10 and place value to understand number structure.
- Numbers, expressions, and measures can be compared by their relative values.
- Operations create relationships between numbers.
- Rules for multiplication and division of whole numbers also apply to decimals.
- Fluently solving problems with all four operations, equips students with vital tools in life that can help students build the positive attitudes that will help them become confident, efficient and effective problem-solvers.
- Solving multi step problems allows students to become better problem solvers in their everyday lives.

**Essential Questions:**
- The base 10 number system uses digits 0-9, groups of 10 and place value to understand number structure.
- Numbers, expressions, and measures can be compared by their relative values.
- Operations create relationships between numbers.
- Rules for multiplication and division of whole numbers also apply to decimals.
- Fluently solving problems with all four operations, equips students with vital tools in life that can help students build the positive attitudes that will help them become confident, efficient and effective problem-solvers.
- Solving multi step problems allows students to become better problem solvers in their everyday lives.

**Concepts within Unit #12**

<table>
<thead>
<tr>
<th>Concept #1: Decimals</th>
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<tbody>
<tr>
<td>5.2B, 5.3E, 5.3G</td>
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<tr>
<td>Concept #2: Multiplication and Division</td>
<td>5.4B</td>
</tr>
<tr>
<td>Concept #3: Fractions</td>
<td>5.3I, 5.3L</td>
</tr>
<tr>
<td>Concept #4: Measurement</td>
<td>5.4H</td>
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