Math 6 (2 of 2)

Course Description:

In this course, students learn more about operations on expressions with whole numbers and positive rational numbers, including expressions with exponents and grouping symbols. They learn about writing, simplifying, and solving basic expressions and equations in one variable. Students also learn how to write simple inequalities and represent their solution sets using a number line. Then students are introduced to using tables, equations, and graphs to represent simple two-variable relationships. Next, students work with statistics, learning how to collect and represent statistical data in dot plots, histograms, box-and-whisker plots, and stem-and-leaf plots. Students learn how to use different measures such as range, mean, median, interquartile range, and mean absolute deviation to describe data sets. Finally, students work with three-dimensional figures, learning to identify nets for different figures, and to calculate volumes and surface areas.

Course Objectives:

- Rewrite numerical and algebraic expressions in different forms and identify their parts.
- Write, simplify, and evaluate expressions that represent situations with unknown values.
- Find solutions to equations and inequalities using substitution and properties of equality.
- Write and solve equations and inequalities that represent mathematical and real-world problems.
- Represent and interpret relationships between two variables using graphs, tables, and equations.
- Describe and interpret data displayed in different ways.
- Calculate, compare, and interpret different measures of center and variation for data sets.
- Create different displays for data sets.
- Solve problems involving the volume and surface area of three-dimensional figures.

Required Materials:

StrongMind Math 6 online curriculum.

Course Overview:

Unit 1: Expressions

- Direct Instruction Activities (Lessons 1-5)
    - Key Terms
    - Texts (lesson titles): Exponents, Order of Operations, Work with Variables, Model with Expressions, Evaluate Expressions
    - Step-by-Step Example/Practice Problems
    - Workbooks

- Checkpoint (Lessons 1-4)
- Unit Exam (Lesson 5)

Unit 2: Expressions and Equations

- Direct Instruction Activities (Lessons 6-10)
    - Key Terms
    - Texts (lesson titles): Equivalent Expressions, More Equivalent Expressions, Equations, Solve with Subtraction, Solve with Division
    - Step-by-Step Example/Practice Problems
    - Workbooks
- Checkpoint (Lessons 6-9)
- Unit Exam (Lesson 10)

Unit 3: Inequalities and Two-Variable Relationships

- Direct Instruction Activities (Lessons 11-16)
    - Key Terms
    - Texts (lesson titles): Read and Write Inequalities, Graphs of Inequalities, Independent and Dependent Variables, Equations for Relationships, Graphs for Relationships, Solve Problems that Involve Relationships
    - Step-by-Step Example/Practice Problems
    - Workbooks
- Checkpoint (Lessons 11-15)
- Discussion (Lesson 15)
- Unit Exam (Lesson 16)

Unit 4: Display Data

- Direct Instruction Activities (Lessons 17-21)
    - Key Terms
    - Texts (lesson titles): How to Collect Data, Draw Conclusions, Dot Plots, Histograms, Stem-and-Leaf Plots
    - Step-by-Step Example/Practice Problems
    - Workbooks
- Checkpoint (Lessons 17-20)
- Project (Lessons 17, 19, and 20)

- Unit Exam (Lesson 21)

Unit 5: Analyze Data

- Direct Instruction Activities (Lessons 22-25)
    - Key Terms
    - Texts (lesson titles): Means and Medians, Variability Using the Mean Absolute Deviation, Box-and-Whisker Plots, Choose a Statistical Summary
    - Step-by-Step Example/Practice Problems
    - Workbooks
- Checkpoint (Lessons 22-24)
- Project (Lesson 23)
- Unit Exam (Lesson 25)

Unit 6: Volumes, Nets, and Surface Areas

- Direct Instruction Activities (Lessons 26-28)
    - Key Terms
    - Texts (lesson titles): Volumes, Nets, Surface Areas
    - Step-by-Step Example/Practice Problems
    - Workbooks (Lessons 26-28)
- Checkpoint (Lessons 26 and 27)
- Unit Exam (Lesson 28)
- Unit Reviews (Lesson 29)
- Final Exam (Lesson 30)