



Grade 4 Math Enrichment - Unit 5 - The 14 Fibs of Gregory K.

Unit Focus

In "The 14 Fibs of Gregory K." author Greg Pincus takes the reader through a humorous and heartwarming story as the main character faces his best friend moving away, the threat of failing math class and the constant stress of being a "non-mathy person" in a household of mathematical geniuses. Mathematical language and concepts swirl through the chapters as Greg struggles to hide his passion for poetry and find some way in which math has meaning in his life. Students will love to hear of his ongoing journey as the teacher reads aloud one chapter each day, and then they will enjoy the engaging activities pulled from the math concepts mentioned in the book. As a culminating project, every student will make their own Fib to share in a book of math and poetry to be bound and sent home. Throughout this unit, students will be engaged building perseverance in solving novel problems as they work collaboratively with their peers.

Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
Common Core Mathematics: 4 - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (CCSS.MATH.CONTENT.4.OA.A.3) - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule Add 3 and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. (CCSS.MATH.CONTENT.4.OA.C.5) - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. (CCSS.MATH.CONTENT.4.MD.A.2) - An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a one-degree angle, and can be used to measure angles. (CCSS.MATH.CONTENT.4.MD.C.5A)	<i>Students will be able to independently use their learning to...</i> T1 Initiate a plan using a variety of methods/strategies appropriately, execute it, and evaluate the reasonableness and accuracy of the solution. T2 Identify and generalize patterns and structure in numbers, expressions, data and objects.	
	Meaning	
	Understanding(s)	Essential Question(s)
	<i>Students will understand that...</i> U1 Effective problem solvers work to make sense of the problem before trying to solve it. U2 Mathematicians apply the mathematics they know to solve problems occurring in everyday life.	<i>Students will keep considering...</i> Q1 Does this solution make sense? Q2 How can I use what I know to help me find what is missing? Q3 What math tools/models/ strategies can I use to solve the problem?
	Acquisition of Knowledge and Skill	
	Knowledge	Skill(s)
	<i>Students will know...</i> K1 Time is measured in units of hours, minutes, seconds (not base ten units) K2 properties of a right triangle K3 the principles of the commutative property	<i>Students will be skilled at...</i> S1 solving problems involving elapsed time S2 solving one step equations S3 representing data on a pie chart S4 solving multi-step problems S5 using ratio tables

Stage 1: Desired Results - Key Understandings

- Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (CCSS.MATH.CONTENT. 4.G.A.2)
- Make sense of problems and persevere in solving them. (CCSS.MATH.MP.1)
- Look for and make use of structure. (CCSS.MATH.MP.7)

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- Collective Intelligence: Working respectfully and responsibly with others, exchanging and evaluating ideas to achieve a common objective. (POG.3.1)

K4 proportional relationships maintain a constant ratio which can be used to predict and solve problems.

K5 a variety of mathematical patterns exist including arithmetic, geometric and fibonacci. Recognizing them can be a tool in problem solving

S6 interpreting numerical patterns