Name: _____

MATH 8: UNIT 5: EXPONENTS IN OUR WORLD

Students will learn the properties of exponents, use of scientific notation, and formulas to calculate volumes of cylinders, spheres, and cones.

Useful text: pages 391 - 429, and SB21 (Skills Bank, back of book)

Section 1: Apply rules of exponents for multiplication and division.

Section 2: Use scientific notation for really big numbers in the universe, and really small numbers under the microscope.

Section 3: Use exponents in formulas for volume. For a cylinder, V = base x height = π r^2 h. For cone, V = (1/3) π r^2 h. For sphere, V = (4/3) π r^3

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Section 1: Apply rules of exponents for multiplication and division.

a. We'll consider math operations (addition, subtraction, multiplication, and division) when we use numbers with exponents.

b. We'll see how exponents are a short-cut to write really large or really small numbers.

Section 2: Use scientific notation for really big numbers in the universe, and really small numbers under the microscope.

a. We'll consider a story of universal proportions to use scientific notation that shows very large numbers. You'll apply operations to simplify an expression.

b. We'll take another story of microscopic proportions. You'll apply operations to evaluate the story and simplify an expression.

Section 3: Use exponents in formulas for volume. For a cylinder, V = base x height = π r^2 h. For cone, V = (1/3) π r^2 h. For sphere, V = (4/3) π r^3

a. We'll use formulas to calculate the volumes of spheres and cones. You'll have a problem to calculate the volume of a given sphere and cone, and conclude which one has the greater volume.

b. We'll use the formula for a cylinder to calculate volume. You'll have a problem to apply how big the volume is to a real-world situation.