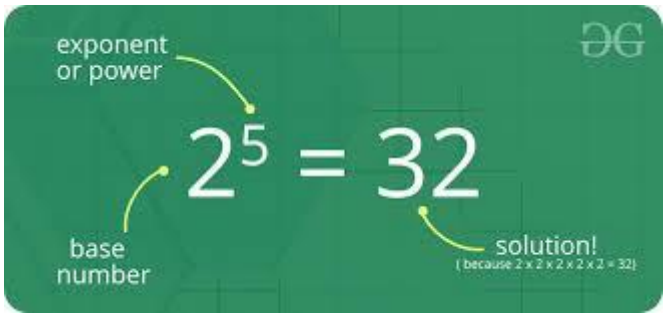
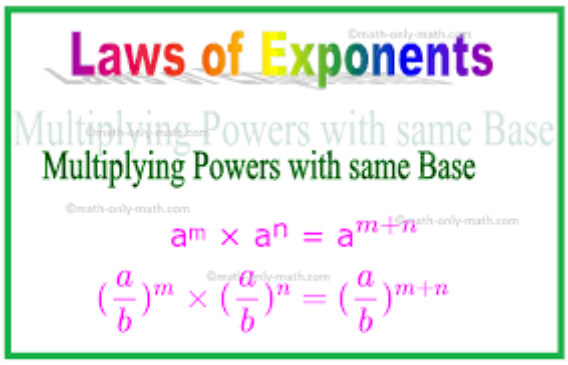
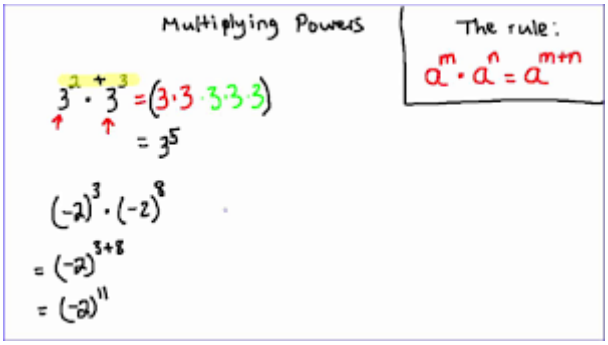
Strand:	Number	**Sub-Strand:**	Number Operations

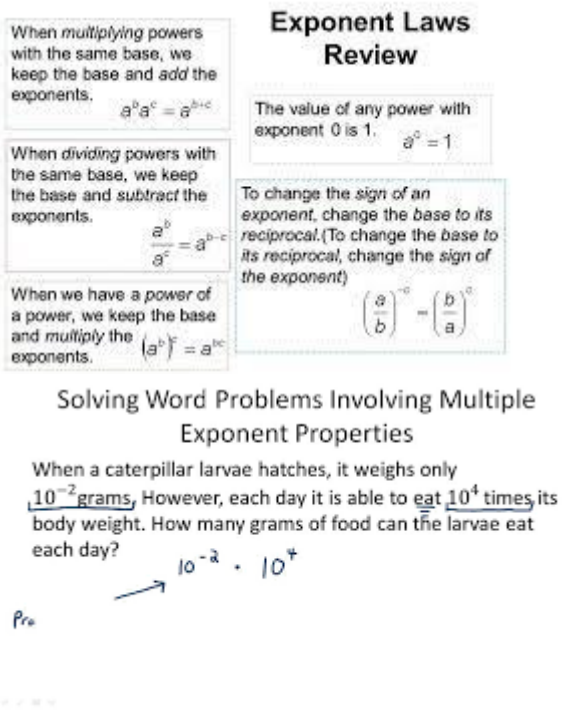
BASIC 7

WEEKLY LESSON PLAN – WEEK 5

Content Standard:	B7.1.2.3 Demonstrate understanding and the use of powers of natural numbers in solving problems.				
Indicator (s)	B7.1.2.3.1 Illustrate with examples the meaning of repeated factors using counting objects such as bottle tops or bundle sticks. B7.1.2.3.2 Express a given number as a product of a given number or numbers, as well as, in the form of a power or two such numbers as product of powers B7.1.2.3.3 Show that the value of any natural number with zero as its exponent or index is 1 and use it to solve problems.		**Performance Indicator:** Learners can solve word Problems.		
Week Ending	11-10-2024				
Class	B.S.7	**Class Size:**		**Duration:**	
Subject	Mathematics				
Reference	Mathematics Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.				
Teaching / Learning Resources	Pictures, number chat, bottle tops, bundle of sticks	**Core Competencies:**	• Look and think about things differently and from different perspective • Ability to serve group members effectively		

DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**	**PHASE 3: REFLECTION**
TUESDAY	Discuss the meaning of a Power of a number with the Learners.	1. Learners brainstorm to explain the features of Power of a number. 2. Assist Learners to explain repeated factors. 3. Individual Learners are to be assisted to identify examples of repeated factors. **Repeated Factors;** A factor is repeated if it has multiplicity greater than 1. For each non-repeated factor in the denominator, follow the process for linear factors. If k is the multiplicity of the repeated factor, write k rational expressions, each of which has that factor raised to a different power in the denominator.  The power of a number says how many times to use the number in a multiplication. Powers are also called	Through questions and answers, conclude the lesson.

		Exponents or Indices. For example, 8^2 could be called “8 to the power 2” or “8 to the second power”, or simply “8 squared”	
THURSDAY	Through questions and answers, review Learners knowledge on the previous lesson.	1. Assist Learners to express a given number as a product of a given number or numbers. 2. Learners brainstorm to calculate the product of powers. 3. Discuss how to calculate the product of numbers by multiplying the powers.  	Reflect on how to find the product of numbers by multiplying the Powers.
FRIDAY	Learners brainstorm to explain the concept of exponents.	1. Using a Power Point Presentation, verify why the value of any natural number with exponent zero is 1. 2. Discuss word Problems involving exponents with the Learners. 3. Learners in small groups to discuss and solve word Problems involving exponents.	Summarize the lesson. **Exercise;** 1. Planet Search is approximately 1012 kilometers from the sun. Planet Brown is approxim



Exponent Laws Review

When *multiplying* powers with the same base, we keep the base and *add* the exponents. $a^b a^c = a^{b+c}$

When *dividing* powers with the same base, we keep the base and *subtract* the exponents. $\frac{a^b}{a^c} = a^{b-c}$

When we have a *power* of a power, we keep the base and *multiply* the exponents. $(a^b)^c = a^{bc}$

The value of any power with exponent 0 is 1. $a^0 = 1$

To change the *sign of an exponent*, change the *base to its reciprocal*.(To change the *base to its reciprocal*, change the *sign of the exponent*) $\left(\frac{a}{b}\right)^{-c} = \left(\frac{b}{a}\right)^{c}$

Solving Word Problems Involving Multiple Exponent Properties

When a caterpillar larvae hatches, it weighs only 10^{-2} grams, However, each day it is able to eat 10^4 times its body weight. How many grams of food can the larvae eat each day?

$10^{-2} \cdot 10^4$

Pro

ately 1015 kilometers from the sun. How many times greater is Planet Brown from the sun than Planet Search?

2. Mr. Birenbaum knows his square yard has an area of 900 square feet. He wants to buy fencing to put around the entire yard so he needs to know the perimeter. Find the perimeter of his yard.
3. A rectangular prism has a length of 2x inches, a width of 6x inches, and a height of 7x inches. If the prism has a volume of 18,144 cubic

			inches, find the value of x.

Name of Teacher: **School:** **District:**