

Prime Factorization

Lesson 6-13

Name:

Date:

Class:

ORBITAL LOGISTICS MISSION

Cargo Codebreak

You are the logistics officer aboard Station Helios. A shipment of 60 supply crates just docked, and the sorting robots can only distribute cargo once it is broken into its prime building blocks. Master prime factorization and the station eats this week.



TODAY'S OBJECTIVES

Content Objective: I can write a number as a product of its prime factors using a factor tree.

Language Objective: I can explain how I broke a number down using the words prime number, composite number, factor, and exponent.



See **Learn It** for the explanation and worked examples, and the **Vocab** tab for the words. These are your notes to fill in and keep.



Fill in each blank as we go. Use the Word Bank to help you.



WORD BANK — FILL EACH BLANK WITH THE BEST WORD

Prime Factorization

Prime number

Composite number

Factor

Factor tree

Exponent



Tap any word to see what it means and a picture.

1

Writing a number as numbers multiplied together is its prime factorization.

2

A whole number greater than 1 with exactly two factors, 1 and itself, is a number.

3

A whole number greater than 1 that has more than two factors is a number.

4

A number that divides evenly into another number is called a .

5 I can break a number into its prime factors step by step using a

6 In 2^3 , the small number 3 is the and it shows 2 is multiplied 3 times.

Write About the Math

Starting from its prime factorization, how can the gardener use the factors of 72 to decide which rectangular grids will use all 72 seed pods?

Empezando por su descomposición en factores primos, ¿cómo puede la jardinera usar los factores de 72 para decidir qué cuadrículas rectangulares usarán las 72 cápsulas de semillas?

Say your answer to a partner first. Then write it, using at least two of these words:

☐

Prime Factorization

Factorización prima

☐

Prime number

Número primo

☐

Composite number

Número compuesto

☐

Factor

Factor

☐

Factor tree

Árbol de factores

Model: 60 is composite because it has more than two factors. — Students say 60 is composite because it has more than two factors (it is divisible by numbers other than 1 and 60, such as 2, 3, 5, 6), so it can be broken down.

Start

Complete the frames. Use the word bank.

Completa las oraciones. Usa el banco de palabras.

- **Because 72 = _____, I can multiply combinations of those prime factors to get factors like _____, so a grid that works is _____ by _____.**
- **My answer is _____ because _____.**

Mi respuesta es _____ porque _____.

Build

Write two connected sentences. Use because, so, or but.

Escribe dos oraciones conectadas. Usa porque, entonces o pero.

- **My claim is _____.**
Mi afirmación es _____.
- **My evidence is _____, so _____.**
Mi evidencia es _____, entonces _____.

Explain

Write a claim, give math evidence, and explain your reasoning.

Escribe una afirmación, da evidencia matemática y explica tu razonamiento.

☐ I answered the question.

☐ I used math evidence: numbers, an equation, or a model.

☐ I used at least two math words.