Barnyard Legs

Unit 7: Calculate and Evaluate

Grade Level

Grade 2

Overview

In this task, students will solve multiplication problems using different strategies. The teacher will read Amanda Bean’s Amazing Dream A Mathematical Story by Cindy Neuschwander or a similar book about multiplication. As the teacher reads the story, he or she will discuss the multiplication problems and have the students solve them.

Key Standards

**M2N3. Students will understand multiplication, multiply numbers, and verify results.**
  a. Understand multiplication as repeated addition
  b. Use repeated addition, arrays, counting by multiples (skip counting) to correctly multiply 1-digit numbers and construct the multiplication table.

**M2D1. Students will create simple tables and graphs and interpret their meaning.**
  a. Organize and display data using picture graphs, Venn Diagrams, bar graphs, and simple charts/tables to record results.

**M2P1. Students will solve problems (using appropriate technology).**
  a. Build new mathematical knowledge through problem solving.
  b. Solve problems that arise in mathematics and in other contexts.

**ELA2W1. The student demonstrates competency in the writing process.**
  g. Begins to write a persuasive piece that states and supports an opinion.
  i. Uses planning ideas to produce a rough draft.
  j. Rereads writing to self and others, revises to add details, and edits to make corrections.
  k. Creates documents with legible handwriting.

**ELA2R4. The student uses a variety of strategies to gain meaning from grade-level text.**
  a. Reads a variety of texts for information and pleasure.
  b. Makes predictions from text content.

Possible Materials

- Play-Doh
- Toothpicks
- Amanda Bean’s Amazing Dream by Cindy Neuschwander or a similar book about multiplication
- Class multiplication chart
- Amanda Bean work mat
- Amanda Bean’s Amazing Dream Multiplication Riddle worksheet

**Task**

The teacher will give the students a *What is Multiplication recording sheet*. The students will write or draw or describe multiplication. The class will share their thinking. The teacher will read *Amanda Bean’s Amazing Dream A Mathematical Story* by Cindy Neuschwander or a similar book about multiplication. As the teacher reads the story, he or she will discuss the multiplication problems and have the students solve them. After reading the story, the teacher will ask the students if Amanda saw 12 chicken legs on the farm, how many chickens did she see? The class will discover that this is a multiplication problem and will discuss why it is a multiplication problem. The class will model using Play-Doh to represent the chicken body and toothpicks to represent legs. Next the class will repeat answering the question by drawing pictures of groups, drawing an array, writing the repeated addition problem, and writing the equation. The teacher will discuss that there is more than one way to solve a multiplication problem. The teacher will repeat this activity by asking questions to the small groups. The small groups will model the different ways to solve a multiplication problem. (building a model, drawing the groups, drawing an array, repeated addition, and writing the equation) After each question is completed the class will add a picture to the multiplication chart of the different ways to solve the multiplication problem and share with the class how they solved the problem. The students will independently complete the *Amanda Bean’s Amazing Dream Multiplication Riddles* worksheet.

**Extension:**

- Complete the persuasive essay. The students will persuade the other students in Amanda’s class that multiplying is faster than counting each one.
- Complete On a Roll with Multiplication station. The students will roll the dice two times and create a multiplication problem using the two numbers. The students will record their work using the On a Roll with Multiplication worksheet.

**Sample Questions**

- Amanda saw 12 chicken legs on the farm. How many chickens did she see?
- Amanda saw 20 sheep legs on the farm. How many sheep did she see?
- Amanda saw 20 chicken and sheep legs on the farm. How many chicken and sheep legs did she see?
- Amanda saw 26 chicken and sheep legs on the farm. How many chicken and sheep legs did she see?
- Amanda saw 30 chicken and sheep legs on the farm. How many chicken and sheep legs did she see?
- Amanda saw 8 chicken and sheep legs on the farm. How many chicken and sheep legs did she see?

**Sample Question Solutions**

The students will solve the problems by building models of the multiplication problems using Play-Doh and toothpicks, drawing groups, drawing arrays, writing the repeated addition problem, and writing the multiplication equation. The students will discover that there can be several different solutions some of the problems.

**Assessment Ideas**
- Amanda Bean Student Task Sheet
- On a Roll with Multiplication Student Task Sheet
- Multiplication Persuade Student Task Sheet