Oklahoma Ag in the Classroom

Macaroni Math

Objective

Students use dry pasta in a variety of math activities.

Materials

- Variety of sizes/shapes of pasta
- Rubbing alcohol (1/2 cup for every 2 cups of pasta)
- Liquid Food Coloring
- Gallon size zipper bags

Procedures

1. Follow the directions below to make colored pasta:
   —Add ½ c of rubbing alcohol and 20 drops of food coloring to baggie. Swish well to mix.
   —Add 2 cups of a variety of pasta (so that you will have some of each type of pasta for every color that you make) to the baggie and zip shut. Mix it well by shaking.
   —Lay each baggie flat and flip every 30 minutes for 2 hours (or until you reach the color you desire).
   —Open the baggie, drain the alcohol and spread pasta on newspapers to dry overnight.
   —Store in zip baggie or other container.
2. Use the colored pasta as manipulatives in the following activities:
   —Sort dry pasta pieces into groups by shape, size, color, etc.
   —Use pasta pieces to create patterns.
   —Count pasta pieces by ones, fives, tens, etc.
   —Distribute pasta pieces equally into at least two smaller equal sets.
   —Compare the number of pasta pieces needed to fill two different containers.
   —Construct addition and subtraction facts.
   —Develop multiplication algorithms.
   —Count dry pasta pieces by ones, twos, fives, etc.
   —Create bar graphs to show how many of each kind of pasta students have counted. Glue one of the pasta pieces at the top of each column.
   —List all possible arrangements and combinations of the kinds of dry pasta provided.
   —Use spaghetti to construct models of parallel, intersecting and perpindicular lines
   —Use dry spaghetti to demonstrate fractions. For example, divide one spaghetti strand into equal pieces to serve four mice. now divide it again to serve eight, 16, etc.
   —Use the pasta as a nonstandard unit to measure objects in the classroom. Measure the pasta with a ruler and convert findings to a

Oklahoma Academic Standards

PRE-KINDERGARTEN
Number & Operations—2.1,2,3,4. Algebra: 1.1,2. Geometry & Measurement: 2.1,2,3. Data: 1

KINDERGARTEN
Number & Operations: 1.5,6; 3.1. Algebra: 1.1,2. Geometry & Measurement: 1.2; 2.3. Data: 1.1,3

GRADE 1
Number & Operations: 1.2,3,4; 2.1; 3.2. Algebra: 1.1; 2.5. Data: 1.1,2,3

GRADE 2
Number & Operations: 2.6. Algebra: 1.1; 2.1,2. Data: 1.2

standard unit of measurement.

3. Give students a Venn diagram, or have them draw one on a paper.
   —Students will glue the pasta into the Venn diagram and then write why they sorted the pasta into the groups they chose.
   —Students will share their Venn diagrams with the class and explain their findings.
   —Make a classroom graph of the different ways students sorted the pasta. How many different ways were used? How many students sorted the pasta in the same way?