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MATH SKILLS

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Introduction

Whether you are amidst the rain, fog, or snow, here is a remedy for those cold winter blues! Winterize with math and science! The winter booklet of the Project AIMS K-1 series is here to dispel those feelings of winter.

The Project AIMS series for K-1 is seasonally based to make it convenient for you to incorporate these investigations into your present curriculum. Because of the peak learning experiences you will be presenting to your students, they will feel like winners when it comes to math and science.

This series is not designed with a specific scope and sequence where each succeeding lesson is based on the preceding lesson. The investigations are written in such a way that your students will discover the true meaning of math and science integration—application of knowledge in the real world.

The Project AIMS K-1 series allows for flexibility for usage in your classroom. Use your own judgment to find the appropriate application and extension of each investigation. Each activity comes complete with a student activity page that you may wish to send home with your students or start a math-science scrap book.

This booklet is not intended to replace your science program, but rather it is intended to enhance it. Remember that these experiences place prime emphasis on the science processes and appropriate math skills. It is not necessary to have a laboratory and elaborate equipment to run a strong science program. All that is needed is every day materials and your willingness to try new ideas!

—The K-1 Series Writing Team

Catch Me... If You Can

I. **Topic Area**

Foods

II. **Introductory Statement**

Students will learn how to make gingerbread and form it into a life size gingerbread man.

III. **Key Question**

How could we make a life-size gingerbread man of our very own?

IV. **Math Skills**

a. Applying formulas
b. Counting
c. Equations
d. Fractions
e. Measuring
f. Patterns
g. Ratios
h. Timing

Science Processes

a. Measuring
b. Controlling variables
c. Interpreting data

V. **Materials**

- ½ cup soft margarine
- 1½ cups brown sugar (packed)
- 2¼ cups molasses
- 1 cup cold water
- 10½ cups flour
- 3 teaspoons baking soda
- 1½ teaspoons salt
- 1½ teaspoons allspice
- 1½ teaspoons ginger
- 1½ teaspoons cloves
- 1½ teaspoons cinnamon
- butcher paper
- cookie sheets
- rolling pin
- knife
- spatula
- mixing bowl
- measuring cups and spoons
- decorations for cooked gingerbread: raisins nuts, candy, colored frostings, etc.

VI. **Background Information**

Gingerbread Recipe

Mix: ½ cup soft margarine
1½ cups brown sugar (packed)
2¼ cups molasses
Stir in: 1 cup cold water
Sift together and add to mixture:
10½ cups flour
3 teaspoons baking soda
1½ teaspoons salt
1½ teaspoons allspice
1½ teaspoons ginger
1½ teaspoons cloves
1½ teaspoons cinnamon
Roll dough 3/8 inch thick and cut into body parts using pattern.
Bake in 350° oven 12-15 minutes (lightly greased pan)
Decorate

VII. **Management**

1. This activity should be broken into 3 separate sessions:
   a. Session One—tracing of a child's body onto butcher paper for a cookie pattern
   b. Session Two—making the gingerbread dough
   c. Session Three—decorating the giant cookie after it has been cooked.
2. All three sessions are best conducted in small groups of 4-5 children.

VIII. **Advanced Preparation**

1. Have butcher paper ready for tracing.
2. Purchase all the ingredients necessary for the gingerbread dough and decorations.

IX. **Procedure**

1. *Session One:*

   Select the student to serve as the pattern for the gingerbread man. Have the child lie on the butcher paper while the teacher traces around his or her body. Cut out the figure and save for the second session.

2. *Session Two:*

   Measure and mix all the ingredients into a large bowl. Refrigerate the dough for 2-3 hours. Roll dough 3/8 inch thick on a floured table. Cut the body pattern into assorted body sections—be sure each piece will be able to fit on the cookie sheets. Place the pattern pieces on the dough and cut out. Bake each section accordingly.

3. *Session Three:*

   Working in small groups, decorate each body section with nuts, raisins, candy, and frosting. Reassemble the gingerbread man and check for symmetry or the patterns. You might like to arrange your gingerbread man on a sturdy piece of cardboard so it can be moved for display. Using extra frosting, "glue" each piece of your cookie to the selected piece of cardboard.

XI. **Discussion**

1. Why is this recipe called gingerbread? What other ingredients did we use?
2. What would happen if we didn't read the recipe carefully and used whatever amount of each ingredient we wanted?
3. What else could we make with our cookie dough?

XI. **Extensions**

After baking the cookie pieces, hide them somewhere in the room. Explain to the children that when you opened the oven to check the gingerbread man, he jumped out and ran away. Suggest hunting for him and conduct a school-wide hunt. While the children are out of the room, have another adult reassemble the giant cookie. When the children are ready to give up their search, return to the room. The gingergread man will have returned. You might want to do this extension after decorating your gingerbread man.

XII. **Curriculum Coordinates**

Language Arts

1. Have the children write their own gingerbread man stories, explaining who would chase them and how they would escape.

Art

1. Using "goofy goop" decorate individual construction paper gingerbread men.

   Goofy Goop

   3 cups flour
   3 cups salt
   3 cups water

   Separate the goop into individual squeeze bottles and add colored tempera paint. Use this to decorate construction paper gingerbread men.