

# Finding the Trail

**Eighth Grade**

**Activity: 1**

**Time: 1 Class Period**

## General Description

Students will use the process skills of observation, questioning, measuring and prediction to determine the make up of a bag of matter

## Objectives

Students will use process skills to determine the make up of a bag of matter

## Arizona State Standards

SC08 S1C1 PO1 Formulate questions based on observations that lead to the development of a hypothesis

SC08 S1C2 PO1 Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry

S1C2 PO4 Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers)

S1C2 PO5 Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs

S1C3 PO1 Analyze data obtained in a scientific investigation to identify trends

S1C4 PO1 Communicate the results of an investigation

W08 S3C3 Write a variety of functional text (e.g., directions, recipes, procedures, rubrics, labels, poster, graphs/tables)

M08 S1C1 PO9 Calculate the missing value in a percentage problem

M08 S2C1 PO1 Determine the appropriate type of graphical display for a given data set

M08 S2C1 PO5 Answer questions based on box and whisker plots, circle graphs, and scatter plots

## Teacher Information

Mixtures are found everywhere in nature. In order for students to have a better understanding of the world around them they will need to understand the difference between compounds and mixtures. This is a good activity to start with. Students will find the percentage of the ingredients of their mixture. To calculate the percentage use the formula:  $\frac{\text{Mass of substance}}{\text{Mass of mixture}} \times 100$

## Materials

Small Ziploc bags

Mixture of a minimum of 5 ingredients, prepare some to be heterogeneous and some to be homogenous

For example: cheerios, M&M chocolate candies, skittles, raisins, pretzel pieces

Hand lens  
Filter paper or small cup  
Triple beam scales  
Activity Card 8-1  
Science Journal

### **Procedures/Exploration**

1. Give each student a bag with the mixture in it.
2. Have students journal their observations or use Activity Card 8-1 (if you use the activity card you can skip most of the directions below).
3. Students will also write as many questions as they can about what they see.
4. Students will predict whether the mixture is heterogeneous and homogenous.
5. Determine the total mass of the mixture and record in their science journal.
6. Separate the parts of the mixture and find the mass of each ingredient and record the information in your science journal or on the Activity Card 8-1.
7. Find the percentage of each ingredient.
8. Graph your results.
9. Write a sentence or two about whether the mixture is heterogeneous or homogenous using your data to support your answer.

# Where is the Trail?

Eighth Grade

Activity: 1

Activity Card: 8-1

Student's Name:

Dates:

Answer the following questions with complete sentences.

1. Look at the mixture in the bag and describe what you see.
2. Write as many questions as you can about the mixture in the bag.
3. Write a prediction as to whether this is a heterogeneous and homogenous mixture.
4. What is the total mass of the mixture?
5. Record the mass of each ingredient here
  - a. Name of substance \_\_\_\_\_ mass \_\_\_\_\_ % of the mixture \_\_\_\_\_
  - b. Name of substance \_\_\_\_\_ mass \_\_\_\_\_ % of the mixture \_\_\_\_\_
  - c. Name of substance \_\_\_\_\_ mass \_\_\_\_\_ % of the mixture \_\_\_\_\_
  - d. Name of substance \_\_\_\_\_ mass \_\_\_\_\_ % of the mixture \_\_\_\_\_
  - e. Name of substance \_\_\_\_\_ mass \_\_\_\_\_ % of the mixture \_\_\_\_\_
6. Graph the results on the back of this paper.