

What's Your Recipe?



Target Level:

1st and 2nd Grades

SOLs:

Science: 1.1, 1.3,
1.8(indirect), 2.1

Materials needed:

Large cutting board
Masking tape
Crayon
Commercial cleanser
Spray bottle
Small bathroom cups
Salt
Baking soda
Measuring spoon or scoop of
some type (an old baby
formula scoop or a scoop
from a powered drink mix
is perfect for this activity,
the important part is that
they are the same size)

Time Needed:

15 - 20 minutes preparation
45 - 50 minutes

Summary

Using the scientific method, students will develop and test a combination of baking soda and salt and then compare its ability to that of a commercial cleanser.

Objectives

Students understand that the natural cleaning products are just as effective as today's more chemically based cleaning products.

Background

Our stores are filled with a variety of cleaning agents, some of these use "environmentally friendly" ingredients and some of these use ingredients that are toxic. All of them clean well. However, our great-grandparents made cleansers that worked just as well, used less packaging, less production time and impacted the environment less. In this activity, students will compare how effective one of these cleansers is against a currently available cleanser.

From a pollution prevention view, your best choice is the one that allows you to buy only one cleaning product, therefore there is only one set of packaging. And if it is a product where the packaging can be recycled or reused, it is an even better choice.

Advanced Preparation

Using the masking tape, divide the cutting board into 10 to 12 sections. Using a crayon, make two to three stripes in each section.

Procedure

1. Break the class into 5 or 6 groups of 3 or more children in each group.
2. Hold up the container of commercial cleanser and ask the children if any of their parents use it at home. Explain that today they will be trying a mixture of things to see if they can make a cleanser that will clean as well as the cleanser you have chosen.
3. Show them the boxes of baking soda and salt. Explain that these are the ingredients and that they need to make a mixture that contains some of both. They can use one scoop of each or two scoops of one and one scoop of the other, or any combination that they would like. (Note to teachers: It is important to remind the students to use a full scoop leveled off at the top.)
4. Explain that in an experiment there are some things that change and some things that remain the same. In order to be able to tell what caused the difference in the results in an experiment, only one thing can be changed at a time. In this experiment the things that will stay the same are the cleaning surface (cutting board), the substance that needs to be cleaned (same color crayon), the amount of water (sprays from spray bottle), the item used to clean (sponge) and the time allowed to clean. The thing that will change is the composition of the cleanser. Also have the students choose if everyone will rub soft or rub hard while trying to clean.
5. Allow the students to come up and test on one of the sections of the cutting board to see if they want to keep the same formula or change it. Once all of the groups are satisfied with the quality of their cleanser, they will record the number of scoops of baking soda and salt on a sheet of paper along with the names of the group members. Have the students write a prediction stating if they think their cleanser or the commercial cleanser will clean better. Then conduct the actual experiment.

6. The groups will select one person to do the scrubbing and that person will come up and use the cleanser on a clean sponge and be given a set time (usually 30 seconds) to clean their section. Once all of the groups have gone, you will “judge” which cleaner worked the best and which ratio was the most effective cleanser in this case.
7. Ask the students how they might change their ratio of salt to baking soda if they were to repeat the experiment.

Wrap Up/Assessment

Discuss where they might use this type of cleanser at home. What type of surfaces do they think it will clean? What type of messes might it clean?

Follow-Up

Have students use excess mixture to clean their desks.