

## Activity: Silly Putty Investigation

Although not inventing in the strictest sense, this activity is a wonderful way to reinforce the scientific process and strategies for problem-solving as students experiment with silly putty recipes.

### Materials

White school glue  
Liquid laundry starch (one 32 oz bottle or smaller)  
Measuring spoons of different sizes to share  
Cups and stirrers  
Food coloring (optional)  
Data chart (included)

### Procedure

1. Tell the Silly Putty story (on the next page) to your students.
2. Discuss! Ask your students if Silly Putty was a planned invention or if it happened accidentally. (In a sense it was both.)
3. Then ask the class if they think they could make a Silly Putty through their own testing. Sure they can! Just like Peter Hodgson, we have the basic ingredients needed and have played with this substance before, most likely. Now all we need to do is conduct some tests with the ingredients.
4. Experiment using the glue and starch. Students can work with partners or in small groups to create their own Silly Putty. Use the chart (included) to have students log their process and record the amounts of glue and starch used.
5. Remind them that collecting data is an essential part of the scientific process. How else could you repeat your success?



### Alignment with State Goals

#### State Goal 4

Listen and speak effectively in a variety of situations

#### State Goal 7

Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy

#### State Goal 11

Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems

# How Silly Putty was Invented

## The Problem

In the 1940's (during WWII), the United States' government needed more rubber for airplane tires, soldiers' boots and other uses. Unfortunately there was not enough natural rubber (the kind that comes from the rubber tree) available, so someone needed to invent a synthetic (or human-made) rubber.

## Investigation Resources

Silicon was a substance found in sand that was believed to be appropriate for making this synthetic rubber. Since there is a lot of sand (and therefore silicon) available, the government asked several large companies to have their engineers (scientists) try to make a rubber substitute.

## Experimenting

One day James Wright, an engineer at General Electric, was doing tests with silicon oil. He tried adding a chemical called boric acid and came up with a useless gooey substance that bounced, so he had to start over!

Five years later, in 1949, a man named Peter Hodgson thought of an idea for this useless goo. Through his own experimenting, he thought this goo would make a great toy. So he borrowed \$147, encased the goo in plastic "eggs" and called it "Silly Putty." It was first sold to adults and then several years later to children.

Through many adults and children playing with (and testing!) Silly Putty over the years, it has come to have a variety of uses. Can you name any? Maybe you could create a new use for Silly Putty.

After making their own versions of Silly Putty, have the class compare it to similar substances in stores. How are they alike? How are they different?

# Silly Putty Investigations: Creating Your Own Recipe

Name: \_\_\_\_\_ Date: \_\_\_\_\_

On the chart below record your Silly Putty Recipe. Describe the results of each. Then, decide which batch turned out better.

Ingredient	Amount in batch #1	Amount in batch #2
white glue		
liquid laundry		
starch		
food coloring		

**Describe your results:**

**Batch 1:**

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**Batch2:**

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**My best batch was:** \_\_\_\_\_