Recipes for the activities

Ingredients for Dish Soap Silly Putty

- 1.5 tablespoons of washing up liquid and
- 2 tablespoons of corn starch

The silly putty will hold a shape if you're constantly moving it. But, if you let it rest, it will drip and fall like molasses (so FUN!).

How Long Does it Last?

Since this dish soap takes about 2 minutes to make, it doesn't necessarily last very long. Meaning, you won't need to store it in a container. Simply play with it for awhile and clean up the silly putty when you're done (you'll notice some drying of the ingredients, which is typical of handmade stuff, but a little soap and water will wipe it right up!

BEAN IN A JAR

This investigation is very simple but fascinating. Did you know you can grow a **bean in a jar** with just a little water?

HOW TO GROW A BEAN IN A JAR

WHAT YOU NEED

- A broad bean seed
- Jar
- Kitchen roll or a napkin
- Water

INSTRUCTIONS

- Swirl a small amount of water around the jar.
- Fold your napkin or kitchen roll and place in the jar. (we made the kitchen roll very slightly damp also)
- Place the bean seed in the jar resting on the napkin.
- Spray some water on the bean every few days.

The bean should start to grow roots after a few days, this is called germination

What cleans an old penny

What You’ll Need

- 3 dull pennies, 2 paper cups, vinegar, liquid soap, paper towel

What You'll Do

1. Guess which liquid will make a penny shine.
2. Set one penny aside. Put each of the other two pennies into its own paper cup.
3. In one cup, pour enough vinegar to cover the penny.
4. In the other cup, pour enough liquid soap to cover the penny.
5. Wait at least ten minutes.
6. Remove the pennies, rinse them in water, and rub them with a paper towel.
7. Compare all three pennies.

How It Works

The vinegar made its penny shiny. Pennies become dull over time as copper on the surface reacts with oxygen from the air. The two elements combine to form dark chemicals called copper oxides. The acetic acid in vinegar dissolves these chemicals and leaves the copper surface of the penny looking shiny. Soap can clean lots of things, but it can’t dissolve copper oxides.

Extend the fun

Younger children: Do the experiment again with more pennies. With your child, collect ten pennies and count them one at a time. Before the pennies go in the vinegar, talk about what they look like. Think about colour, shape, and size. Repeat the experiment and then talk again after the pennies are shiny and rinsed. What is different about the pennies? What is the same? Finish up by counting the pennies again and adding them to your child's piggy bank.

Older children: In this experiment, you left the penny in the vinegar for ten minutes. What do you think would happen if you left it in for 30 seconds? What if you left it in for an hour? What would happen if you put only part of the penny in the vinegar? Make a guess and test these ideas with other pennies. If you run out of vinegar, you can also use other acidic liquids, such as lemon juice or pickle juice. See how they compare!

Year 1 and 2

Water Xylophone

- **Teaches children about:** Sound waves
- **Difficulty Level:** Easy
- **Messiness Level:** Low

With just some basic materials you can create your own musical instrument to teach children about sound waves. In this water xylophone experiment, you'll fill glass jars with varying levels of water. Once they're all lined up, children can hit the sides with wooden sticks and see how the itch differs depending on how much water is in the jar (more water=lower pitch, less water=higher pitch). This is because sound waves travel differently depending on how full the jars are with water.

- **Materials Needed**
  - Glass jars
  - Water
  - Wooden sticks/skewers
  - Food colouring

Tornado in a Jar

- **Teaches children about:** Weather
- **Difficulty Level:** Easy
- **Messiness Level:** Low

This is one of the quickest and easiest science experiments for children to teach them about weather. It only takes about five minutes and a few materials to set up, but once you have it ready you and your children can create your own miniature tornado whose vortex you can see and the strength of which you can change depending on how quickly you swirl the jar.

- **Materials Needed**
  - Mason jar
  - Water
  - Dish soap
  - Vinegar
  - Glitter (optional)

Coloured Celery Experiment

- **Teaches children about:** Plants
- **Difficulty Level:** Easy
- **Messiness Level:** Low

This celery science experiment is another classic science experiment that parents and teachers like because it's easy to do and gives children a great visual understanding of how transpiration works and how plants get water and nutrients. Just place celery stalks in cups of coloured water, wait at least a day, and you'll see the celery leaves take on the colour of the water. This happens because celery stalks (like other plants) contain small capillaries that they use to transport water and nutrients throughout the plant.

- **Materials Needed**
  - Celery stalks (can also use white flowers or pale-coloured cabbage)
  - Glass jars
  - Water
  - Food colouring

Rain Cloud in a Jar

- **Teaches children about:** Weather
- **Difficulty Level:** Medium
- **Messiness Level:** Low

This experiment teaches children about weather and lets them learn how clouds form by making their own rain cloud. This is definitely a science project that requires adult supervision since it uses boiling water as one of the ingredients, but once you pour the water into a glass jar, the experiment is fast and easy, and you'll be rewarded with a little cloud forming in the jar due to condensation.

- **Materials Needed**
  - Glass jar with a lid
  - Boiling water
  - Aerosol hairspray
  - Ice cubes
  - Food colouring (optional)

Edible Rock Candy

- **Teaches children about:** Crystal formation
- **Difficulty Level:** Medium
- **Messiness Level:** Medium

It takes about a week for the crystals of this rock candy experiment to form, but once they have you'll be able to eat the results! After creating a sugar solution, you'll fill jars with it and dangle strings in them that'll slowly become covered with the crystals. This experiment involves heating and pouring boiling water, so adult supervision is necessary, once that step is complete, even very young children will be excited to watch crystals slowly form.

- **Materials Needed**
  - Glass jars
  - Water
  - Sugar
  - Large saucepan
  - Clothespins
  - String or small skewers
  - Food colouring (optional)
  - Candy flavouring (optional)