Little Scientists 2025



Image Created by Olivia Lorenzo

Activity Booklet

Gache Jellyfish Ocean in a Bottle Paper Chromatography

A Little about our Science Dino of 2025...

This year's little dino is a spinosaurus named Daisy! One of the largest carnivorous dinosaurs, it is longer than a T-rex and has a unique crocodile-like snout perfect for catching fish. Spinosaurus, like Daisy, were likely semi-aquatic, spending lots of time in the water, and had a distinctive sail on its back. Although they have been studied for over a century, recent discoveries have helped scientists understand how they lived and adapted to their environment. This prehistoric giant is a phenomenal reminder of how exciting and ever-changing science can be!



More information about T-rex:

https://kids.nationalgeographic.com/animals/prehistoric/facts/tyrannosaurus-rex



Gache (pronounced "Gack") (*Chemistry*)



Description:

Gache is a fantastic opportunity for students to be introduced to non-Newtonian fluids and polymers. Each child will mix together two parts glue and one part liquid starch to form a goopy mass of slime. This slime imitates a non-Newtonian fluid, or a material that is neither a true liquid nor a true solid. Although technically a liquid, gache both flows but can also bounce and stretch. This is the result of mixing the polymer, glue, with liquid starch. A polymer is really long chain of repeating complicated structures that form a molecule. Typically they are found in materials such as plastic, rubber, and wood. Let's see what happens when these materials mix!

Materials:

- Aprons
- Liquid Starch
- Glue
- Bowl
- Food Coloring (Optional)

Directions:

- 1) Place two portions of glue in a bowl (¹/₂ cup recommended)
- 2) Incorporate one portion of liquid starch and mix (1/4 cup)
- 3) Add 2-3 drops of food coloring to the slime mixture
- 4) See how far you can stretch your creation!
- 5) Refrigerate at home to keep it ready for continued play



Jellyfish

(Marine Science)

Description:

Jellyfish are fascinating creatures of the sea. Once you see them, you will not forget! What is better than observing them? Well, making them, of course!

Materials:

- Paper Plate
- Markers
- Crepe Paper, Tissue Paper, or Ribbons
- Glue or Tape
- Googly Eyes
- Scissors
- Crayons and/or Markers

Directions:

- 1) Take the plate and cut it in half. *The other half can be used as another jellyfish if you choose.
- 2) Color the front half of the plate.
- 3) Cut strips of paper for legs.
- 4) Attach the legs to the non-colored side of the plate at the bottom cut side using glue or tape.
- 5) Attach googly eyes to the front-colored side of the plate and watch the jellyfish come to life!

Additional Resources:

- Fun Jellyfish Facts for Kids Interesting Information about Jellyfish
- Paper Plate Jellyfish Craft Kids Activity Zone



Ocean in a Bottle

(Chemistry)



Description:

This activity allows children to explore the concept of density. Oil and water mix and form distinct layers because of the different polarities that make them up. The mixture also creates bubbles!

Materials:

- Clear Plastic Water Bottle
- Vegetable or Baby Oil
- Blue Food Coloring
- Funnel (Optional)
- Small Shells, glitter, or plastic ocean figurines (Optional)

Directions:

- 1) Fill the bottle slightly more than halfway with water.
- 2) Add a few drops of food coloring and shake it to mix.
- Fill the rest of the bottle, or at least ¼ of the bottle, with oil, leaving a bit of air at the top. *Using a funnel helps with this part.
- 4) Put in the optional items if you choose.
- 5) Seal, shake, and have fun observing your mini oceans!

Additional Resources:

- Why don't oil and water mix? - Science Questions for Kids



Paper Chromatography

(Chemistry)

Description:

Paper chromatography is a technique used to separate mixtures using a *solvent* - a liquid that dissolves *substances.* In this activity, water acts as the solvent and the marker ink acts as the mixture. There is a *stationary phase* in which the mixture particles don't move, and a *mobile phase* in which the particles move. The stationary phase is the filter paper, and the mobile phase is the water. The different colored ink

particles travel at different speeds as the water moves through the paper, creating a fun tie-dye effect!

Materials:

- Coffee Filter
- Markers
- Mason Jar (12 oz or 16 oz)
- Water
- Binder Clip
- Wooden Pencil or Craft Stick
- Clothespin
- Pipe Cleaner

Directions:

- 1) Use some markers to draw rings around the coffee filter.
- 2) Fold the coffee filter in half three times and clip it at the top with a binder clip.
- 3) Place a pencil or craft stick through the gap between the binder clip and the filter.
- 4) Fill a mason jar with water so that only the tip of the filter paper touches the water.
- 5) Using the pencil/craft stick, balance the filter paper on the mason jar so the tip of the filter paper barely touches the water.
- 6) Leave the filter paper there until it is completely soaked in water and the colors have migrated to the top (about 10-15 minutes)
- 7) Remove the filter paper from the mason jar, take off the binder clip, unfold the filter paper, and let it dry for 10-15 minutes.
- 8) Pinch the coffee filter paper through the center using a clothespin.
- 9) Shape a pipe cleaner in the shape of antennae and pinch it in the center..

Additional Resources:

- https://www.123homeschool4me.com/butterfly-craft-for-kids_16



Author's Note:

Thank you so much for spending time looking through this booklet! Stay tuned to <u>http://randolphscience.org/</u> for updated event information, video resources, and more. This booklet will also be posted to the website. We have really enjoyed compiling these activities and look forward to seeing everyone at the next Randolph College Science Festival!

Best Wishes,

- Iyania Corbett (Environmental Studies major) and Olivia Lorenzo (Marine Science)

Little Scientists 2025 Interns



