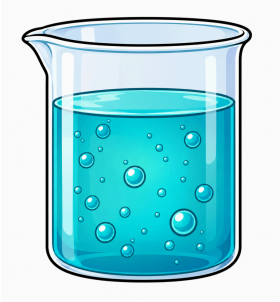
Floating and Sinking Investigation

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

A shallow tray of water, towel, large cork, large wooden block and large metal spoon.



Instructions

1. Predict whether each object will float or sink.
2. Place one object gently into shallow water. Observe without pushing it.
3. Remove it and test the next object. Record each result.
4. Compare your results with your predictions.

1. My prediction

Observation

Safety: An adult supervises water use. Keep water shallow, wipe spills and keep it away from electricity. Use large objects; do not put anything in mouths.

Floating and Sinking Investigation

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: An object floats when the water can provide enough upward force to support its weight. Material, shape and trapped air affect what happens; heavy objects do not always sink.

1. One further question

2. How I could test it safely with an adult

Background source: https://www.amnh.org/learn-teach/resources-for-learning/hall-of-ocean-life/cartesian-diver

Static Electricity Investigation

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

A plastic comb, dry cloth and small paper scraps on a tray.

Instructions

1. Predict what will happen when the comb is near paper.
2. Hold the comb close without touching. Record what happens.
3. Rub the comb with the cloth several times.
4. Hold it near the paper again. Compare before and after.

1. My prediction

Observation

Safety: Use a plastic comb and paper only. Keep scraps on the tray, away from mouths. Do not use mains electricity or rub anyone's hair without consent.

Static Electricity Investigation

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: Rubbing can transfer electric charge between materials. A charged comb can attract nearby neutral paper by rearranging charges within it. Conditions such as humidity can affect the result.

1. One further question

2. How I could test it safely with an adult

Background source: https://annex.exploratorium.edu/science-explorer/roller.html

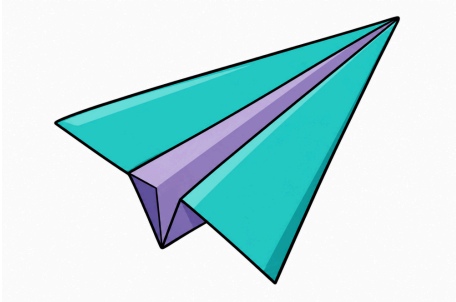
Paper Plane Investigation

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

Two sheets of the same paper, tape for a start line, measuring tape and a clear flight area.



Instructions

1. Fold two planes with different wing shapes.
2. Predict which design will travel farther.
3. Launch each from the same line using a similar gentle throw. Repeat three times.
4. Measure each distance, then compare the results.

1. My prediction

Observation

Safety: Use blunt paper planes and a clear area. Launch away from people, faces and animals. Provide a seated launch option.

Paper Plane Investigation

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: A moving plane is affected by gravity and forces from the air. Shape, launch speed and angle can change its flight. Repeated trials help show whether a result is consistent.

1. One further question

2. How I could test it safely with an adult

Background source: https://www1.grc.nasa.gov/beginners-guide-to-aeronautics/paper-airplanes-plans/

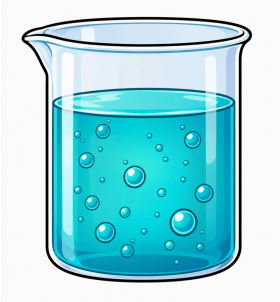
Paper Chromatography

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

Coffee filter strips, washable water-based marker, cup, pencil and a small amount of water.



Instructions

1. Draw a small marker dot above the bottom of a strip.
2. Predict whether the ink has more than one colour.
3. Stand the bottom in water with the dot above the water line.
4. Watch the water rise. Remove and dry the strip; record separated colours.

1. My prediction

Observation

Safety: Use washable water-based markers and water only. No solvents, tasting or permanent markers. An adult manages spills.

Paper Chromatography

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: Water travels through the paper. Some ink components dissolve and move different distances. This can separate a mixture into visible bands; not every marker separates visibly.

1. One further question

2. How I could test it safely with an adult

Background source: https://www.acs.org/education/activities/mystery-markers.html

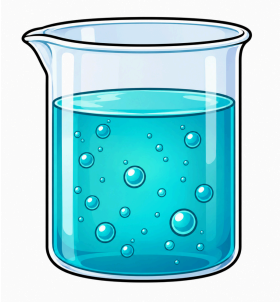
Surface Tension Investigation

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

Shallow water tray, large plastic-coated paperclip, small piece of tissue and one drop of dishwashing liquid.



Instructions

1. Predict whether the paperclip can rest at the water surface.
2. Lay tissue on the water and place the paperclip flat on it.
3. Wait as the tissue becomes wet and sinks. Observe the clip.
4. Add one drop of dishwashing liquid away from the clip and observe again.

1. My prediction

Observation

Safety: Adult supervision. Keep the clip and detergent away from mouths and eyes. Wash hands after the activity and wipe spills.

Surface Tension Investigation

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: Water molecules attract one another, creating surface tension. A carefully placed small object can be supported at the surface. Detergent lowers surface tension; results depend on placement.

1. One further question

2. How I could test it safely with an adult

Background source: https://www.acs.org/middleschoolchemistry/lessonplans/chapter5/lesson2.html

Shadow Investigation

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

A flashlight, opaque toy or card shape, paper and pencil.

Instructions

1. Place the object between the flashlight and paper.
2. Predict how moving the light will change the shadow.
3. Change only the light-to-object distance. Trace two shadows.
4. Compare their sizes and explain what you observed.

1. My prediction

Observation

Safety: An adult checks the light. Never look directly into bright lights or point them at eyes. Do not use lasers or stare at the Sun.

Shadow Investigation

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: An opaque object blocks light travelling toward a surface. Moving the light or object changes the area where light is blocked and can change the shadow's size.

1. One further question

2. How I could test it safely with an adult

Background source:
https://www.exploratorium.edu/sites/default/files/files/Tinkering%20Studio%20Light%20and%20Shadow%20Starter%20Cards_English.pdf

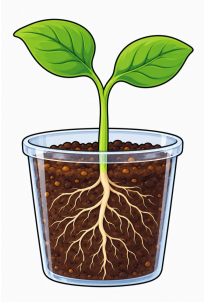
Seed Germination Diary

Name / chosen name: _____

Work with an adult. Predict before testing; observations describe what actually happened.

Materials

Large bean seed, clear container, damp paper towel and a recording sheet.



Instructions

1. Place the seed beside a damp paper towel in a clear container.
2. Predict which part you might see first.
3. Keep the towel damp, not flooded; observe daily for a week.
4. Draw changes and record days when roots or shoots appear.

1. My prediction

Observation

Safety: An adult handles containers and checks for mould. Do not eat experiment seeds. Wash hands; discard mouldy materials without children handling them.

Seed Germination Diary

Name / chosen name: _____

Record and explain

1. What happened?

2. Was it different from my prediction?

3. What did I change or keep the same?

Scientific explanation: A viable seed can begin growing when conditions such as water, oxygen and temperature are suitable. Stored food supports early growth. Some seeds need particular additional conditions.

1. One further question

2. How I could test it safely with an adult

Background source: https://www.sciencelearn.org.nz/images/4956-germination

FOUNDATION–YEAR 6

Paper Bridge Challenge

Name / chosen name: _____

Challenge: Build a paper bridge across a 15 cm gap that holds three equal blocks.

Materials: Two sheets of paper, two book supports, tape and three large blocks.

My design sketch

My prediction and plan

1. First test result

2. One change I will make

Test: Change folds or layers; keep the gap and test blocks the same.
Safety: Test low over a clear table; keep fingers clear of falling blocks.