


10 Low-Prep Science Experiments



#1 WHAT ABSORBS WATER

Setup: 5 minutes **Activity:** 10-15 minutes

QUESTION	MATERIALS
Which item will absorb the most water?	Bowls or cups of water Tray to hold experiment Choose from: • Paper • Tissue • Sponge • Cloth • Cotton • Fabric

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment.

- If I put a sponge and a paper towel in water, then the sponge will absorb more water.
- If I have a cloth towel and a paper towel, then the cloth towel will absorb more water.

EXPERIMENT

Here are general guidelines for the experiment. Since this is an open-ended activity, the students may change the experiment to meet their needs.

Setup: Teacher fills two cups or bowls with water and places the items in the water.

Experiment:

1. Students place one item in each bowl or cup.
2. Students pull the item out of the water and place it on a dry surface.
3. Students look at the cups or bowls of water and try to measure the water left.
4. Repeat with additional items.


Try Next: Test other materials like cardboard, fabric, or different sizes of the same item such as a small sponge and a large sponge.

FINDINGS

Draw pictures or make a chart to show which material absorbed the most water. Compare their findings and see if they are the same.

SCIENCE BACKGROUND

This experiment explores how different materials absorb water. Some materials have tiny spaces (like paper towels and sponges) that can hold a lot of water. Children learn about material properties and how to compare water absorption. They also practice predicting the results of an experiment, a fundamental scientific skill.



#10 CRAFT STICK BRIDGE

Setup: 2 minutes **Activity:** 10 minutes

QUESTION	MATERIALS
Can you build a bridge that holds weight?	Craft Sticks (5-10 per child) Tape Blocks to support bridge (2 per child) Coins or toys for testing

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include:

- If I use more popsicle sticks, then my bridge will hold more coins.
- If I make a triangle shape, then my bridge will be stronger.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Hand out materials to children.

1. Challenge children to build a bridge between the two blocks.
2. Test the bridge by placing coins on it one at a time.
3. See how many coins the bridge can hold.

Try Next: Try to build a bridge without tape.

FINDINGS

Draw picture of tower designs. Compare which designs were tallest or most stable.

SCIENCE BACKGROUND

This experiment teaches kids about building strong bridges. They learn that bridges need to span gaps and support weight. Adding more sticks doesn't always make a stronger bridge; placement and design are more important. Kids may discover that arches and trusses (triangle patterns) distribute weight effectively. Through this, children develop spatial reasoning and understand that successful engineering requires both planning and testing.

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hello@earlylearningwithlori.
com

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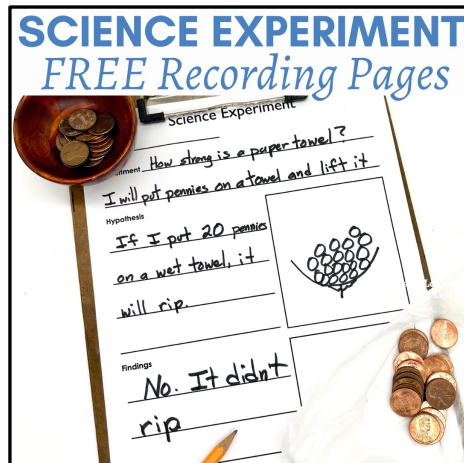
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Exploring Together:

Ask Open-ended Questions: Set the stage for your experiment by asking open-ended questions such as:

- What do you see, hear, feel, etc.?
- Are you wondering if?
- How could we find out?

Find your hypothesis: These experiments have a suggested hypothesis but allow your students to develop their own, using ideas generated during the open-ended questions. These hypotheses can be used for your first experiment or saved for additional explorations.

Set up Open-ended Experiments: Adjust experiments to meet the developmental stages of your students. Give them as much opportunity for hands-on activities as possible.

Record Findings: Allow students to talk about what they discovered. Write down their findings or have them draw pictures to represent their experiments. Ask questions to bring out more ideas.

- What was your hypothesis? (Or prediction)
- What happened?
- Why do you think that happened?
- How could we find out more?
- What should we try next?

Recording Pages: If your students are ready for recording their experiments, there is a free download [here: Free Blank Science Experiment Recording Pages with Scientific Method](#)

Keep It Fun: Focus on making the experiments enjoyable and stress-free. Science with young students is not about complex ideas. Your goal should be capturing a student's excitement about the world around them and giving them opportunities to explore.

Quick Setup Tips for Teachers:

- **Materials Prep:** Set up experiment stations with all materials ready
- **Student Grouping:** Most experiments work well with 2-4 children per group
- **Time Management:** Start with prediction, then experiment, then compare results
- **Documentation:** Have clipboards ready for drawing results
- **Extensions:** Keep extra materials available for children who want to try variations

Perfect For:

- **Early Finishers:** Experiments #5, #6, #8 (5-10 minutes)
- **Center Rotations:** Experiments #1, #2, #7 (10-12 minutes)
- **Individual Challenges:** Experiments #3, #9, #10 (12-15 minutes)
- **Partner Work:** Experiments #2, #4, #6, #8
- **Whole Group:** Experiments #5, #7 (easy to demonstrate)



#1 WHAT ABSORBS WATER

Setup: 5 minutes **Activity:** 10-15 minutes

QUESTION

Which item will absorb the most water?

MATERIALS

Bowls or cups of water
Tray to hold experiment
Choose two materials to test:

- Paper towels
- Tissues
- Sponges
- Cloth towel
- Cotton Balls
- Fabric Swatches

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I put a sponge and a paper towel in water, then the sponge will hold more water.
- If I have a cloth towel and a paper towel, then the cloth towel will absorb more water.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Teacher fills two cups or bowls with water and places them on a tray.

Experiment:

1. Students place one item in each bowl or cup.
2. Students pull the item out of the water and place it on the tray.
3. Students look at the cups or bowls of water and try to determine which one now has less water.
4. Repeat with additional items.

Try Next: Test other materials like cardboard, fabric, or different types of paper. Test different sizes of the same item such as a small sponge and a large sponge.

FINDINGS

Draw pictures or make a chart to show which material absorbed more water. Give students time to compare their findings and see if their hypotheses were correct.

SCIENCE BACKGROUND

This experiment explores how different materials absorb liquids. Materials with more surface area and tiny spaces (like paper towels and sponges) absorb more water than smooth materials. Children learn about material properties and develop observation skills by comparing water absorption. They also practice prediction and hypothesis testing, fundamental scientific skills.



#2 PAPER TOWEL STRENGTH

Setup: 2 minutes **Activity:** 10 minutes

QUESTION

Which brand of paper towel is stronger?

MATERIALS

Two brands of paper towels
Spray bottle with water
Weights (coins, or small toys)

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I put coins on a wet paper towel and lift the towel by the corners, then the stronger paper towel will hold more coins than the other paper towel.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Teacher gives each child two sections of paper towels, weights, and a spray bottle with water.

1. Have children dampen the towels with water.
2. Have children place an equal number of weights in the center of the towels.
3. Children lift the first towel by the corners to see if it holds the weights.
4. Children can try the second towel to see if it hold the weights.
5. Allow children the time to explore and try different numbers of weights.

Try Next: Test with different amounts of water or try construction paper vs. copy paper.

FINDINGS

Draw pictures or make a chart to show which material absorbed more water. Give students time to compare their findings and see if they their hypotheses were correct.

SCIENCE BACKGROUND

This experiment shows how water affects material strength. When paper gets wet, its fibers weaken and break easily. Different paper towel brands have varying fiber structures and densities, influencing their wet strength. Children learn about variables (wet vs. dry), comparative testing, and cause-and-effect relationships. They also develop fine motor skills and understand that the same material can behave differently under different conditions.



#3 PAPER DROP RACE

Setup: 2 minutes **Activity:** 8-10 minutes

QUESTION

Which paper will hit the ground first?

MATERIALS

Different types of paper: construction paper, cardstock, copy paper, tissue paper,

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment, such as:

- If I shape the foil to look like a bowl, it will hold ten coins.
- If I make a bigger boat, it will hold more toys than a smaller boat.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs. To keep the experiment to one variable, start with two types of paper that are the same size, but different weights.

Setup: Gather paper.

1. Give each child two different types of paper
2. Have them predict which will touch the ground first.
3. Hold up the papers and drop them at the same time.
4. Observe which hits ground first
5. Try different paper combinations.

Try Next: Try crumpling one paper and leaving one flat. Compare the results.

FINDINGS

Draw pictures showing which papers fell fastest. Talk about why some papers fall slower.

SCIENCE BACKGROUND

This experiment demonstrates air resistance and gravity. Gravity pulls objects down, but air slows their fall. Light, large-surface items like tissue paper fall slowly due to air resistance, while heavy, dense items like cardstock fall faster. Students explore how weight, shape, and size affect falling speed, learning that it depends on both weight and air resistance.



#4 BUILD A BOAT

Setup: 3 minutes **Activity:** 15 minutes

QUESTION

Can you build a boat that holds weight?
(Such as coins, toys, or math counters)

MATERIALS

Weights: Small toys, counters, or coins
Foil
Bowls of water

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I drop tissue paper and cardstock, then the cardstock will hit the ground first.
- If I drop construction paper and tissue paper, then the construction paper will fall faster.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Fill bowls with water. Hand out a bowl, a piece of foil, and set of 10 weights.

1. Give children time to design and test out their boats.
2. If they can design a boat that holds more than 10 weights, hand out additional weights.

Try Next: Add popsicle sticks to the boat design or try different boat shapes.

FINDINGS

Draw pictures or make a chart to show which boat held the most objects. Give students time to compare their findings and see if they their hypotheses were correct.

SCIENCE BACKGROUND

This experiment explores buoyancy—why things float or sink. When children shape foil into a boat, it displaces water and floats because it pushes away water that weighs more than the boat. Adding toys tests the boat's carrying capacity. Children learn about displacement, weight distribution, and engineering design. They discover that shape matters more than material—the same foil can sink (as a ball) or float (as a boat).



#5 BUILD A BRIDGE

Setup: 3 minutes **Activity:** 15 minutes

QUESTION

Can you build a strong bridge with paper and tape?

MATERIALS

Paper
Tape
Scissors
Small toys, counters, or coins for weights
Two blocks per person

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I tape a piece of paper between two blocks to make a bridge, then it will hold weight.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Give each child two block, a piece of paper, tape, and items for weights.

1. Allow plenty of time to for building and testing.
2. Encourage children to share their ideas.
3. Test how much weight the bridges will hold.

Try Next: Try different types of paper such as construction paper or cardstock.

FINDINGS

Draw pictures or make a chart to show which bridge held the most weight. Compare different designs.

SCIENCE BACKGROUND

This experiment introduces structural engineering and load-bearing capacity. Bridges distribute weight across their structure. Children may learn that different shapes (flat vs. folded) support different amounts of weight. Folding or bending paper creates structural strength. Children develop problem-solving skills and learn that design matters as much as materials.



#6 BALL ROLL RACE

Setup: 2 minutes **Activity:** 8 minutes

QUESTION

Which ball will roll to the finish line first?

MATERIALS

Two different balls (basketball, tennis ball, ping pong ball, etc.)
Tape

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I roll a basketball and tennis ball, then the tennis ball will reach the line first
- If I roll a big ball and small ball, then the small ball will be faster

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Mark a start and finish line with tape.

1. Give each child two different balls.
2. Have them predict which ball will reach the line first.
3. Roll balls at the same time from the start line.
4. See which reaches the finish line first

Try Next: Try rolling balls on different surfaces like carpet vs. tile.

FINDINGS

Draw pictures showing which ball won each race. Try the same balls multiple times.

SCIENCE BACKGROUND

This experiment explores **friction** and **momentum**. Different balls have different weights, sizes, and surface textures, which all affect how they roll. Heavier balls often roll farther because they have more momentum once they start moving. Surface texture matters too - smooth balls roll differently than textured ones. Children learn about **variables** (size, weight, surface) and develop prediction skills. They discover that "bigger" doesn't always mean "faster" - weight distribution and ball construction affect rolling speed.



#7 RAMP RACE

Setup: 3 minutes **Activity:** 10 minutes

QUESTION

Which toy car will reach the bottom first.

MATERIALS

Two cars per child (different sizes or types)
Books or piece of cardboard to make a ramp
Blocks to prop up ramp

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I race a big car and small car down the ramp, then the small car will be faster.
- If I race two different cars, then the red car will reach the bottom first.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Stack books or cardboard on blocks to make ramp.

1. Give each child two different toy cars.
2. Have them predict which car will reach the bottom first.
3. Release both cars at the same time from the top.
4. See which car reaches the bottom first.

Try Next: Make the ramp steeper or try different object like balls or cylinders.

FINDINGS

Draw pictures showing which car won each race. Try racing the same cars multiple times.

SCIENCE BACKGROUND

This experiment demonstrates **gravity** and **potential energy**. When objects are at the top of a ramp, they have stored energy (potential energy) that converts to movement energy (kinetic energy) as they roll down. Steeper ramps create faster speeds. Different car weights, wheel types, and shapes affect how quickly they roll. Children learn about **cause and effect** (height affects speed), **variables** (car design matters), and develop prediction skills.



#8 STRAW BLOW RACE

Setup: 2 minutes **Activity:** 10 minutes

QUESTION

Can you blow a cotton ball to the finish line 1/

MATERIALS

Straws
Cotton balls or pom poms
Tape to make start and finish lines

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I blow hard through the straw, then my cotton ball will reach the finish line.
- If I blow softly, then my cotton ball will move slowly.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Mark the start and finish line on a table.

1. Give each child a straw and a cotton ball.
2. Place cotton balls at the start line.
3. Use straws to blow cotton balls to the finish line
4. See which cotton ball reaches the finish line first.

Try Next: Try pom poms, balled up pieces of paper, or other balls. Compare results.

FINDINGS

Talk about what happened. Try blowing hard vs. soft. Draw pictures of the race.

SCIENCE BACKGROUND

This experiment explores **force** and **air movement**. When children blow through straws, they create a stream of moving air that pushes against the cotton ball. The force they apply (how hard they blow) directly affects how far and fast the cotton ball moves. Different objects respond differently to air force based on their weight and shape. Children learn about **cause and effect** (harder blowing = faster movement) and develop coordination skills.



#9 STRAW TOWER CHALLENGE

Setup: 2 minutes **Activity:** 10 minutes

QUESTION

Can you blow a cotton ball to the finish line?

MATERIALS

Straws (10 per child)
Tape

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I tape straws end to end, then I can make a tall tower.
- If I make a wide base, then my tower will be more stable .

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Give each child 10 straws and a roll of tape

1. Challenge children to build the tallest tower possible
2. Let them experiment with different ways to connect straws
3. Measure and compare tower heights .

Try Next: Try building the strongest tower instead of the tallest. Test by placing a small object on top.

FINDINGS

Draw picture of tower designs. Compare which designs were tallest or most stable.

SCIENCE BACKGROUND

This experiment teaches kids about **structural engineering** and **stability**. They learn that tall structures need strong foundations and good balance to stay upright. Wider bases make structures more stable than narrow ones. Children may discover that using triangular shapes and cross-bracing (connecting straws in X patterns) makes structures stronger. Through this, children develop problem-solving skills and understand that engineering combines creativity with physical laws.



#10 CRAFT STICK BRIDGE

Setup: 2 minutes **Activity:** 10 minutes

QUESTION

Can you build a bridge that holds weight?

MATERIALS

Craft Sticks (5-10 per child)
Tape
Blocks to support bridge (2 per child)
Coins or toys for testing

HYPOTHESIS

After asking questions, develop a hypothesis for your experiment. Ideas include;

- If I use more popsicle sticks, then my bridge will hold more coins.
- If I make a triangle shape, then my bridge will be stronger.

EXPERIMENT

Here are general guidelines for the experiment. Since this is designed to be an open-ended activity, the students may change the experiment to meet their needs.

Setup: Hand out materials to children.

1. Challenge children to build a bridge between the two blocks.
2. Test the bridge by placing coins on it one at a time.
3. See how many coins the bridge can hold.

Try Next: Try to build a bridge without tape.

FINDINGS

Draw picture of tower designs. Compare which designs were tallest or most stable.

SCIENCE BACKGROUND

This experiment teaches kids about building strong bridges. They learn that bridges need to span gaps and support weight. Adding more sticks doesn't always make a stronger bridge; placement and design are more important. Kids may discover that arches and trusses (triangle patterns) distribute weight effectively. Through this, children develop spatial reasoning and understand that successful engineering requires both planning and testing.