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Tiny Scientists at Play

Simple experiments. Big discoveries.

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Dear Gro Families & Friends,

This week, children are exploring the world as tiny scientists, using simple experiments to ask questions, make predictions, and discover what happens next. Through hands-on experiences, children will mix, test, observe, and try again as they explore how things change and why.

Throughout the week, your child will engage in activities that encourage curiosity and early problem-solving. Whether they are watching colors mix, testing what sinks or floats, or noticing how materials react, they are building important thinking skills through play.

Try this at home:
Ask your child, "What do you think will happen?" before trying something new. Simple moments like mixing, pouring, or testing ideas can turn everyday play into meaningful discovery.

These small moments help build a strong foundation for thinking, learning, and discovery.

with wonder-filled hearts,
the gro academy team

Cultivating Exceptional Early Childhood Professionals

All content created by The Gro Academy is aligned with WMELS developmental domains and NAEYC developmentally appropriate practices to support whole-child learning.

Home Extension: Sink or Float Test

Making predictions and testing ideas through simple water play

Objective:

Children make predictions and test how different objects behave in water.

Materials:

- Bowl or bin of water
- Small objects (spoon, leaf, toy, rock, cork, etc.)

Instructions:

1. Gather a few objects together.
2. Ask: “Do you think this will sink or float?”
3. Place the object in water.
4. Watch what happens.
5. Talk about the result and try again.

Infant & Toddler Adaptation:

Offer a smaller selection of larger, safe objects and allow children to explore at their own pace. Instead of asking for predictions, model simple language such as “in,” “out,” “sink,” and “float” while placing items in the water together. For younger children, focus on scooping, dropping, and watching movement, supporting hand-over-hand exploration as needed.

Developmental Targets:

- **Approaches to Learning:** Curiosity • Willingness to try new ideas
- **Cognitive:** Observing outcomes • Beginning prediction skills
- **Literacy & Language:** Using simple descriptive language

Tiny Scientists at Play

Children explore simple experiments through hands-on experiences that invite them to ask questions, make predictions, and observe outcomes. These activities support early scientific thinking while encouraging children to test ideas, notice changes, and build understanding through repeated exploration.

Ramp Roll Experiment

Testing how objects move on different slopes

Objective:

Children explore how objects move by testing ramps and observing speed, distance, and direction.

Materials:

- Cardboard pieces or boards (for ramps)
- Blocks or books (to change height)
- Small objects (cars, balls, pinecones, etc.)

Instructions:

1. Set up a simple ramp using cardboard and blocks.
2. Invite children to choose an object.
3. Ask: “What do you think will happen?”
4. Release the object from the top of the ramp.
5. Observe how fast or far it moves.
6. Change the height of the ramp and try again.

Infant & Toddler Adaptation:

Use a low, stable ramp and larger rolling objects. Focus on watching objects move rather than predicting outcomes. Use simple language such as “go,” “fast,” and “down,” and allow repeated exploration of rolling and releasing.

Developmental Targets:

- **Approaches to Learning:** Curiosity • Trying new ways to explore
- **Cognitive:** Cause and effect • Observing motion and change
- **Health & Physical:** Hand-eye coordination • Controlled release of objects
- **Literacy & Language:** Using simple words to describe movement

What Absorbs? Test

Exploring how different materials react to water

Objective:

Children test different materials to see how they absorb water and compare results.

Materials:

- Small pieces of sponge, paper towel, fabric, foil, wax paper, etc.
- Bowl or bin of water
- Tray or surface for testing

Instructions:

1. Place materials on a tray.
2. Invite children to touch and explore each one.
3. Ask: "What do you think will happen when we add water?"
4. Drop or pour a small amount of water onto each material.
5. Observe what happens (soaks in, stays on top, spreads).
6. Compare results and try again if desired.

Infant & Toddler Adaptation:

Offer a smaller selection of larger materials and allow children to explore by touching wet and dry surfaces. Model simple language such as "wet," "dry," "soak," and "drip." Focus on sensory exploration rather than comparison.

Developmental Targets:

- **Approaches to Learning:** Curiosity • Exploring materials in different ways
- **Cognitive:** Observing properties of materials • Comparing outcomes
- **Health & Physical:** Fine motor control when pouring and touching
- **Literacy & Language:** Using descriptive words for textures and changes

Fizz & Bubble Reaction

Observing what happens when materials combine

Objective:

Children observe a simple reaction and describe what they see as materials change.

Materials:

- Baking soda
- Vinegar
- Small cups or containers
- Spoon or dropper
- Optional: a drop of food coloring

Instructions:

1. Add a small amount of baking soda to a cup.
2. Invite children to observe the powder.
3. Ask: “What do you think will happen when we add this?”
4. Pour or drop vinegar into the cup.
5. Watch the fizzing and bubbling reaction.
6. Talk about what changed and what they notice.

Infant & Toddler Adaptation:

Prepare the materials in advance and allow children to observe closely as the reaction happens. Offer opportunities to scoop or pour with support. Use simple language such as “bubble,” “pop,” and “more,” focusing on sensory experience and visual change.

Developmental Targets:

- **Approaches to Learning:** Making predictions • Focused attention during observation
- **Cognitive:** Observing change • Cause and effect
- **Literacy & Language:** Describing actions and reactions

Push & Distance Test

Testing how force changes movement

Objective:

Children explore how different amounts of force affect how far objects move.

Materials:

- Small objects (cars, balls, blocks)
- Flat surface (floor or table)
- Tape or markers (to mark distance)

Instructions:

1. Place a starting line on the floor or table.
2. Invite children to choose an object.
3. Ask: "What do you think will happen if we push it softly? Hard?"
4. Push the object gently and observe how far it goes.
5. Push the same object harder and compare the distance.
6. Mark or notice where each object stops.

Infant & Toddler Adaptation:

Use larger objects and model simple pushing actions. Focus on "go" and "stop" while allowing children to explore pushing with their hands. Emphasize repetition and movement rather than comparison.

Developmental Targets:

- **Approaches to Learning:** Trying different strategies • Persistence in testing ideas
- **Cognitive:** Cause and effect • Comparing distance and movement
- **Health & Physical:** Coordinated pushing movements • Control of force
- **Literacy & Language:** Describing movement (fast, far, stop)

Magnet Test & Sort

Testing what sticks and grouping results

Objective:

Children test different objects to see if they are magnetic and sort them based on the results.

Materials:

- Magnets (child-safe)
- Tray or surface for sorting
- Small objects (paperclip, coin, leaf, block, spoon, etc.)

Instructions:

1. Place a variety of objects on a tray.
2. Invite children to explore the magnet.
3. Ask: “What do you think will stick?”
4. Test each object with the magnet.
5. Separate items into “sticks” and “does not stick.”
6. Compare and talk about the groups.

Infant & Toddler Adaptation:

Offer a small set of larger, safe objects and allow children to explore magnets with support. Focus on the action of “stick” and “not stick,” using simple language while modeling the testing process.

Developmental Targets:

- **Approaches to Learning:** Problem-solving • Making predictions
- **Cognitive:** Understanding spatial relationships • Exploring shapes (circle)
- **Health & Physical:** Controlled movement within space • Coordination
- **Social & Emotional:** Cooperation • Sense of belonging in shared activity

Facilitator Focus

Theme *Children explore simple experiments by making predictions, testing ideas, and observing outcomes.*

Overview

This week's experiences support early scientific thinking through hands-on exploration. Children engage in testing, observing, comparing, and repeating as they explore how things move, react, and change. These activities build foundational skills in problem-solving and encourage children to think through their ideas using real experiences.

Facilitator Tips

- Encourage children to make predictions before testing
- Allow time for repeated trials and exploration
- Focus on process rather than correct answers
- Model observation language ("I notice...", "It changed...")
- Support children in comparing results across attempts

Vocabulary to Emphasize

predict • test • observe • change • move • fast • slow • sink • float • stick • not stick • push • roll

Short Sentence Prompts (for modeling language):

- "What do you think will happen?"
- "What did you notice when we tried it?"
- "What could we try differently next time?"

Developmental Connections (WMELS Alignment)

Approaches to Learning:

- Making predictions • Persistence • Trying different strategies • Focused attention

Cognition & General Knowledge:

- Cause and effect • Observing change • Comparing results • Classification

Health & Physical Development:

- Coordinated movement • Controlled use of force • Fine motor manipulation

Language & Literacy Development:

- Describing actions and outcomes • Using simple scientific language

Social & Emotional Development:

- Confidence in testing ideas • Participating in shared exploration

Reflection for Educators

- Which materials or experiments held children's attention the longest?
- How did children respond when outcomes were different than expected?
- What strategies did children use when testing their ideas?