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Driftwood Detectives
Investigate. Predict.
Solve.
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the gro academy
Cultivating Exceptional Early Childhood Professionals

Welcome to Driftwood Detectives

This week invites children to become curious investigators as they predict, test, compare, and discover how different objects behave in water. Through hands-on STEM experiences, children explore sinking, floating, sorting, measuring, and problem-solving while developing early math and science skills.

As children experiment with a variety of materials and ideas, they strengthen observation skills, critical thinking, and persistence while learning that discoveries often begin with a simple question. Each activity encourages children to investigate, make predictions, and test their ideas through playful exploration.

We hope you enjoy a week filled with curiosity, discovery, and hands-on learning as you become Driftwood Detectives together! 🔍⚓🌊

with floating hearts,
the gro academy
team

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 Investigation

Making predictions and testing ideas through hands-on discovery

Objective:

Children predict, test, and compare objects to discover which items sink and which items float.

Materials:

- Large container, tub, or sink
- Water
- Variety of household objects
- Towel
- Paper and pencil (optional

Instructions:

1. Gather a collection of safe household objects.
2. Invite children to predict whether each item will sink or float.
3. Test each object in water.
4. Compare predictions with results.
5. Sort objects into sink and float groups.
6. Discuss what the objects have in common.

Infant & Toddler Adaptation:

Offer a small selection of large, safe objects for exploration. Encourage children to place items in water, observe what happens, and compare objects while modeling simple words such as sink, float, heavy, light, wet, and dry.

Developmental Connections:

- **Approaches to Learning:** Making predictions • Testing ideas • Adjusting thinking
- **Cognitive:** Sorting by results • Comparing object properties • Drawing conclusions from evidence
- **Health & Physical:** Controlled object placement • Hand-eye coordination
- **Literacy & Language:** Using prediction words • Explaining what happened
- **Social & Emotional:** Accepting unexpected results • Learning from mistakes

Driftwood Detectives

Testing Ideas Like a Detective

This week's activities invite children to investigate, compare, predict, and discover through hands-on STEM exploration. As children test objects, build floating creations, sort materials, and solve problems, they strengthen critical thinking, observation skills, and early math and science understanding while learning that every result is a clue.

Float Boat Challenge

Designing and testing floating creations through engineering play

Objective:

Children design, build, and test simple boats while exploring buoyancy, stability, and problem-solving.

Materials:

- Aluminum foil
- Craft sticks
- Corks
- Tape
- Recycled containers
- Tub of water
- Small counters, stones, or pennies

Instructions:

1. Invite children to build a simple boat using available materials.
2. Predict whether the boat will float and how much it can hold.
3. Test the boat in water.
4. Add counters one at a time until the boat sinks.
5. Compare results and redesign if desired.

Infant & Toddler Adaptation:

Offer a variety of floating objects and simple floating containers for exploration. Encourage children to place items in water, observe what happens, and compare which objects stay on top while modeling words such as float, sink, full, empty, heavy, and light.

Developmental Connections:

- **Approaches to Learning:** Testing ideas • Solving problems • Improving designs
- **Cognitive:** Exploring buoyancy • Comparing weight and capacity • Drawing conclusions from results
- **Health & Physical:** Placing objects with control • Coordinating hand movements during testing

Mystery Object Drop

Gathering clues through prediction, testing, and discovery

Objective:

Children make predictions and test objects to discover which items sink and which items float.

Materials:

- Water container or sensory bin
- Variety of small objects
- Towel
- Small bag, basket, or mystery box
- Optional prediction chart

Instructions:

1. Place several objects inside a mystery bag or container.
2. Invite children to choose one object without testing it first.
3. Examine the object and discuss clues such as size, shape, texture, and material.
4. Predict whether the object will sink or float.
5. Test the object and compare the result to the prediction.
6. Continue gathering clues and testing new objects.

Infant & Toddler Adaptation:

Offer a small collection of large, safe objects for exploration. Encourage children to touch, observe, and test items in water while modeling simple words such as sink, float, heavy, light, smooth, and rough.

Developmental Connections:

- **Approaches to Learning:** Making predictions • Using clues to form ideas • Revising thinking after testing
- **Cognitive:** Connecting object properties to outcomes • Drawing conclusions from evidence • Recognizing patterns across results
- **Literacy & Language:** Describing object characteristics • Explaining predictions and discoveries

Float, Sink & Measure

Comparing quantities, capacity, and results through investigation

Objective:

Children compare how many objects different floating containers can hold before sinking.

Materials:

- Variety of floating containers (foil boats, plastic lids, small bowls, sponge trays)
- Water container
- Counters, stones, pennies, or small manipulatives
- Recording sheet (optional)

Instructions:

1. Place several floating containers in the water.
2. Predict which container will hold the most objects.
3. Add counters one at a time to each container.
4. Count how many objects each container holds before sinking.
5. Compare results and discuss which containers held more or less.
6. Test again using different containers or materials.

Infant & Toddler Adaptation:

Offer floating containers and a small collection of large objects for safe exploration. Encourage children to add objects one at a time, observe changes, and compare containers using words such as more, less, full, empty, big, and small.

Developmental Connections:

- **Cognitive:** Comparing quantities • Measuring capacity through testing • Identifying more and less
- **Health & Physical:** Adding objects with control • Coordinating hand movements during counting and testing
- **Literacy & Language:** Using comparison words • Discussing results and observations

Floating Treasure Rescue

Using tools and strategies to recover floating and sunken treasures

Objective:

Children use tools and problem-solving strategies to retrieve objects from water.

Materials:

- Water table, tub, or sensory bin
- Floating and sinking objects
- Tongs
- Scoops
- Nets
- Measuring cups
- Containers or baskets

Instructions:

1. Place a variety of floating and sunken treasures in water.
2. Invite children to choose tools to retrieve the objects.
3. Predict which tools will work best for different treasures.
4. Test different strategies and compare results.
5. Sort recovered treasures into groups.
6. Discuss which tools were most effective and why.

Infant & Toddler Adaptation:

Offer large scoops, cups, and nets for safe exploration. Encourage children to retrieve floating objects, transfer materials between containers, and experiment with simple tools while modeling action words such as scoop, lift, catch, grab, and collect.

Developmental Connections:

- **Approaches to Learning:** Choosing strategies • Testing solutions • Trying new approaches
- **Cognitive:** Matching tools to tasks • Comparing effectiveness • Solving practical problems
- **Health & Physical:** Strengthening grip control • Coordinating tool movements • Using both hands together
- **Social & Emotional:** Working through challenges • Building confidence through success

Detective's Prediction Station

Using clues and past discoveries to make informed predictions

Objective:

Children use observations and previous testing experiences to predict how unfamiliar objects will behave in water.

Materials:

- Water container
- New objects not previously tested
- Detective clipboard or paper (optional)
- Pencil or crayons
- Magnifying glass (optional)

Instructions:

1. Present a collection of unfamiliar objects.
2. Encourage children to carefully observe each object's size, shape, weight, and material.
3. Predict whether each object will sink or float and explain why.
4. Test the objects in water.
5. Compare results with predictions.
6. Discuss which clues were helpful and what new discoveries were made.

Infant & Toddler Adaptation:

Offer a small collection of large, safe objects with obvious differences in texture, size, and material. Encourage children to touch, compare, and test items while modeling descriptive language and simple observations.

Developmental Connections:

- **Approaches to Learning:** Using past experiences to make predictions • Applying new knowledge • Reflecting on results
- **Cognitive:** Identifying meaningful clues • Connecting evidence to outcomes • Recognizing patterns across investigations
- **Literacy & Language:** Explaining reasoning • Sharing observations and discoveries
- **Social & Emotional:** Building confidence in ideas • Accepting new information

Facilitator Focus: Driftwood Detectives

✨ Theme

Children become curious investigators as they predict, test, compare, measure, and solve problems through hands-on sink-and-float explorations. Using water, everyday materials, and simple STEM challenges, children develop critical thinking skills while discovering how observations and evidence help us understand the world around us.

🌷 Overview

This week's activities help children think like scientists and engineers by exploring why some objects sink and others float. Through testing, building, and problem-solving, they strengthen math and science concepts while enhancing reasoning, observation, and decision-making skills. Each activity encourages predictions, evidence gathering, and using discoveries for future investigations.

🌱 Facilitator Tips

- Encourage children to explain their thinking before and after testing.
- Focus on the investigation process rather than finding the "right" answer.
- Ask open-ended questions that promote reasoning and problem-solving.
- Support children in revising ideas when results differ from expectations.
- Introduce vocabulary naturally through observation and discussion.

🌼 Vocabulary to Emphasize

predict • observe • test • compare • evidence • buoyancy • float • sink • heavier • lighter • measure • investigate

Short Sentence Prompts (for modeling language):

- “What clues helped you make that prediction?”
- “What did you notice after we tested it?”
- “How can we test out your idea?”

💡 Developmental Connections (WMELS Alignment)

💭 **Approaches to Learning:**

- Children develop curiosity, reasoning, persistence, flexible thinking, and problem-solving as they form predictions, test ideas, revise assumptions, and investigate outcomes through hands-on exploration.

🧠 **Cognition & General Knowledge:**

- Children strengthen scientific inquiry, evidence-based reasoning, classification, measurement, comparison, pattern recognition, engineering thinking, and cause-and-effect understanding while exploring object properties and testing hypotheses.

💪 **Health & Physical Development:**

- Children build hand strength, grip control, bilateral coordination, tool use, object manipulation, and fine motor precision while retrieving materials, building floating structures, measuring capacity, and conducting investigations.

🦜 **Language & Literacy Development:**

- Children expand scientific vocabulary, comparison language, descriptive communication, reasoning skills, and conversational abilities as they explain predictions, discuss evidence, and share discoveries.

💕 **Social & Emotional Development:**

- Children develop confidence in their ideas, resilience when predictions are incorrect, cooperation during investigations, and a willingness to learn from mistakes while participating in collaborative STEM experiences.

✨ Reflection for Educators

- Which activities encouraged the deepest reasoning and evidence-based thinking?
- How did children respond when testing results differed from their predictions?
- What patterns, comparisons, or problem-solving strategies emerged during investigations?