

Water

“Play is like a reservoir full of water. The deeper the reservoir, the more water can be stored in it, and used during time of drought.”

– Tina Bruce, professor,
London Metropolitan
University

Discussion Questions While Playing in *Water*

- Where do you like to play with water?
- What do you notice about water?
- I see you are working to control the flow of water. Tell me about how you're trying to move the water.
- How do you think (object to manipulate water) works?



Overview

Children interact with water daily. When they splash in a bath, jump in a puddle or watch in fascination as a rain drop trickles down a window, children engage in the wonders of water. The *Water* playscape builds upon these experiences, further expanding and extending children's curiosity and learning. As children manipulate materials and investigate falling, running and still water, they explore the physical properties of water. They become active scientists who interact with others, ask questions, test ideas, and formulate hypotheses. Water play fosters open-ended exploration, sensory development and discovery.



Experiences and Skills Practiced in *Water*

Children may:

- Engage in open-ended exploration of water and materials
- Explore concepts of more/less, empty/full and greater than/less than
- Develop eye-hand coordination through pouring, squeezing, stirring, ...
- Experiment with the physical properties of water:
 - Water flows down unless acted upon
 - Water takes the shape of its container
 - Water sticks to itself, called cohesion (i.e. drops of water)
 - Water sticks to other materials, called adhesion
 - Air makes bubbles in water that rise to the surface
 - Objects sink or float in water
- Collaborate with peers and share ideas, equipment, space and materials
- Observe, wonder, question, explore and investigate (Scientific Inquiry Skills)
- Communicate experiences and findings with others
- Refine sensory and fine motor skills

Connection to Washington State Standards

Early Learning and Development Benchmarks

Physical Well-Being, Health and Motor Development

- Goals: 2, 3

Social and Emotional Development

- Goals: 11-18, 21-25

Approaches Toward Learning

- Goals: 27-31

Cognitive and General Knowledge

- Goals: 32-35, 38-43, 47, 56-57

Language, Communication and Literacy

- Goals: 58-59, 61-62, 65

EALRs and Performance Expectations

Reading

- 1.3

Communication

- 1.1, 2.2

Math

- K.1, K.3, K.4, 1.4, 1.5

Science

- K-1 INQ, K-1 APP, K-1 PS1, K-1 PS2

Arts

- 1.1, 1.2, 2.1, 3.2

Related Classroom Activity *Floating & Sinking*

Materials:

- A deep container (i.e. fish tank, bucket, or large bowl)
- A collection of objects to test:
 - Pencil
 - Rubber band
 - Toy boat
 - Aluminum foil
 - Paper clip
 - Nail
 - Rubber duck
 - CD
 - Rubber ball
 - Oranges – lesson extension
 - Other objects around your home or classroom.

Vocabulary:

- **Float** – object stays on top of the water
- **Sink** – objects falls to the bottom of the water
- **Observation** – looking closely at something to notice all the details
- **Prediction** – what you think will happen; using what you know to make a best guess

Experiment:

- Begin by asking children, “What does it look like when an object floats? What does it look like when an object sinks?” Honor each child’s thinking and build upon their responses by prompting children to consider, “Why do you think objects sink or float?” Display the vocabulary words in a prominent place for the duration of the experiment.
- Demonstrate the experiment process.
 - Pick up one object and model observing it closely.
 - Based on your observations, make a prediction, will it float or will it sink?
 - Test the object.
 - Record your results in the appropriate grid.
- Decide if children will work with a partner or individually. Invite children to begin their experiments and remind them to make their predictions first.
- Provide sufficient time for children to investigate and consider allowing them to test other materials around the room. As you move around, check to make sure children are making predictions.
- Come back together as a group and discuss the experiment process and results. Questions to help facilitate a rich discussion are provided.

Result grids for younger children:

OBJECT	FLOAT	SINK	Draw a picture of what you observe when an object:	
			FLOATS	SINKS
Paper clip 				
Pencil 				

Floating & Sinking continued.

Result grids for older children:

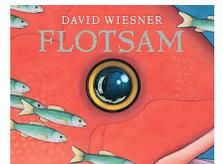
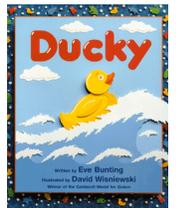
OBJECT	PREDICTION	FLOAT	SINK
Paper clip			
Pencil			

Extension:

Give children an orange and ask, "Can you make an orange sink?" Try not to provide too much scaffolding or support at first; rather, encourage children to problem solve on their own. An orange with the peel will float, but once the rind is peeled off, it sinks. Why? "What do you notice about the rind of an orange?" Encourage children to make a guess, or a hypothesis, as to why an orange will float with its peel and sink without it.

Resources for Children

- Asch, Frank. 2000. *Water*. New York: Voyager.
- Base, Graeme. 2001. *The Water Hole*. New York: Harry N. Abrams.
- Bix, Cynthia Overbeck. 1995. *Water, Water Everywhere*. San Fransisco: Sierra Club Books for Children.
- Bunting, Eve. 1997. *Ducky*. New York: Clarion Books.
- Burns, Lorrie Griffin. 2007. *Tracking Trash: Flotsam, Jetsam and the Science of Ocean Motion*. New York: Houghton Mifflin Books.
- Emoto, Masaru. 2006. *The Secret of Water*. Hillsboro, OR: Beyond Words Publishing, Inc.
- Kerley, Barbara. 2002. *A Cool Drink of Water*. Washington, D.C.: National Geographic Society.
- Weisner, David. 2006. *Flotsam*. New York: Clarion Books.



Resources for Adults

- Chalufour, Ingrid and Worth Karen. 2005. *Exploring Water with Young Children*. St. Paul, Minnesota: Redleaf Press
- Education Development Center, Inc. 2003. *Liquids*. Dubuque, Iowa: Kendall Hunt Publishing Co.
- Wick, Walter. 1997. *A Drop of Water*. New York: Scholastic Press
- www.h2ouniversity.org/html
- projectwet.org



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Discussion Questions During Lesson

- What do you notice about the objects that floated?
- What do you notice about the objects that sink?
- How do objects, like a ball or orange (with the rind) float?
- Tell me about your process for making predictions? How did you decide if an object would float or sink before testing?
- Did any of the results surprise you?
- Why is it important to know if an object will float or sink?