



PLANNING IN YOUR CLASSROOM: FACILITATOR GUIDE

The scientific method is a series of steps used to help children better understand their world. Teachers incorporate the scientific method into activities when they encourage children to:

- Question
- Observe
- Predict
- Experiment
- Discuss

Intentionally planning for and teaching the scientific method throughout the day helps children grasp this approach to understanding the world. This learning activity is a way for teachers to plan ahead and organize how to incorporate these steps into their practice. Participants may share their experiences with the group and discuss how they integrated the scientific method within their planned activities.

Note to facilitator:

After reviewing the notes above and the sample lesson, have participants use the next page to plan in their own classrooms. Below are step-by-step instructions for them to follow.

1. Select a learning domain from the Head Start Child Development and Early Learning framework.
2. Identify a learning objective.
3. Plan an activity in which children can use the scientific method.
4. Be specific and describe how the activity encourages children to:
 - Question
 - Observe
 - Predict
 - Experiment
 - Discuss
5. Record observations of children's responses to the activity and discuss as a group.

SAMPLE LESSON: SINK OR FLOAT

Learning domain: Science Knowledge & Skills

Learning objective: Children will develop initial understandings of the concept of buoyancy, and will observe, predict, and classify objects according to whether they sink or float.

Planned activity: During whole group instruction we will talk about sinking and floating and then read: *Floating and Sinking* by Sue Barraclough. After the story we will further explore by testing different items to see if they sink or float.

Steps of the scientific method:

Question: What causes objects to float or sink?

Observe: Give children a large transparent container of water (e.g., glass bowl, clear plastic storage box) and a variety of objects—some that float (e.g., foam peanuts, plastic bears, etc.), and some that sink (e.g., coins, pebbles, solid rubber balls, etc.). Allow children to place the various objects in the water, and observe which objects float and which sink. Sort the items according to whether they float or sink.

Predict: Ask children how the shape of an object might influence whether it floats or sinks. Create a variety of shapes from clay or aluminum foil (e.g., some that are balls, some that are boat shaped). Ask children to predict which objects will float and which will sink.

Experiment: Allow children to test the shapes in the clear container. Ask the children, "What happens to the balls? What happens to the boats? What do you notice about the things that float? . . .the things that sink?" Allow children to create their own shapes and test which float and which sink.

Discuss: Recap the results of the experiment, highlighting the following concepts about buoyancy:

- Whether something floats depends on the material it is made of, not on its size. (e.g., "There are very large boats that float, and we noticed that a small penny sinks.")
- Objects float if they are light for their size and sink if they are heavy for their size.
- An object can be light for its size if it contains air, such as a hollow ball. (e.g., "We also noticed that a foam peanut floats even though it is much larger than objects that sink, like a pebble. The foam peanut is light for its size and the pebble is heavy for its size.")
- Materials with a boat shape will float because they effectively contain air. (e.g., "The boats that we made all floated.")

Reference: Barraclough, S. (2006). *Floating and sinking*. Chicago: IL: Heinemann-Raintree Publishers.



THE NATIONAL CENTER ON

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and Learning

LEARNING ACTIVITY USING THE SCIENTIFIC METHOD

PLANNING WORKSHEET

Lesson:

Learning domain:

Planned activity:

Steps of the scientific method:

- Question
- Observe
- Predict
- Experiment
- Discuss

Observations and reflection on children's responses to the activity:



For more information, contact us at: NCQTL@UW.EDU or 877-731-0764

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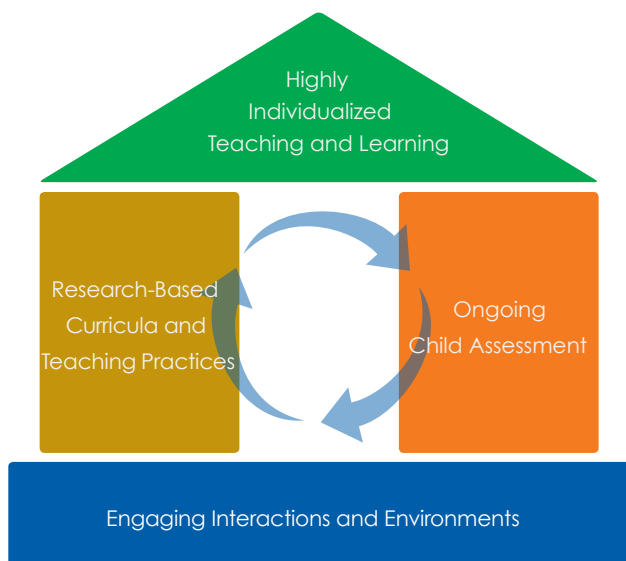
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FRAMEWORK FOR EFFECTIVE PRACTICE SUPPORTING SCHOOL READINESS FOR ALL CHILDREN



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