** LESSON PLAN (2025)**

**Candidate’s name:** Thu Trang Nguyen

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| Grade/Class/Subject: | Kindergarten/Science | School: | Uplands Elementary School |
| Date: | Monday, February 10, 2025 | Allotted Time: | 35 minutes |
| Topic/Title: | Exploring how materials, sizes and shapes affect sinking and floating |

1. **LESSON ORIENTATION**

**Key resources:** Instructional Design Map

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| *Briefly, describe purpose of lesson, and anything else to note about the context of lesson, students, or class, e.g. emergent learning needs being met at this time, elements of focus or emphasis, special occasions or school events.* |
| This lesson is to engage students in a hands-on exploration to understand how different sizes, shapes, and materials of objects can affect their ability to sink or float. Through observation, experimentation, and discussion, students will learn how to think like scientists by making predictions and testing hypotheses, developing their understanding of buoyancy. This lesson can encourage critical thinking as students reflect on how their observations relate to real-world objects or events like boats and other floating or sinking examples. |

1. **CORE COMPETENCIES**

**Key resources:** https://curriculum.gov.bc.ca/competencies

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| **Core /Sub-Core Competencies** *(check all that apply):* | *Describe briefly how you intend to embed Core Competencies in your lesson, or the role that they have in your lesson.* |
|  🗹 COMMUNICATION – Communicating 🗹 COMMUNICATION – Collaborating  🗖 THINKING – Creative Thinking 🗹 THINKING – Critical Thinking 🗹 THINKING – Reflective Thinking 🗹 PERSONAL AND SOCIAL – Personal Awareness and Responsibility 🗖 PERSONAL AND SOCIAL – Positive Personal and Cultural Identity  🗹 PERSONAL AND SOCIAL – Social Awareness and Responsibility | **Communication**: * Communicating: In familiar settings, I communicate with peers and adults (Profile 2).

Students can participate in conversations about how materials, sizes and shapes affect sinking and floating, listen and respond to others. Students can share basic information about topics and answer simple, direct questions about their findings and experiences.* Collaborating: In familiar situations, I cooperate with others for specific purposes (Profile 2).

Students can contribute to the class discussion, cooperate with others to make predictions, and listen respectfully to the teacher and peers’ ideas. **Thinking**: * Critical Thinking and Reflective Thinking: I can use evidence to make simple judgements (Profile 2).

Students can ask questions, make predictions, and use their senses to gather information during experiments. Students can find some evidence and make predictions about what sinks or floats. They can reflect on their work and experiences and tell others about their thinking or something they learned.**Personal and Social**: |
|  | * Personal Awareness & Responsibility: I can show a sense of accomplishment and joy, and express some wants, needs, and preferences. I can sometimes recognize my emotions (Profile 1).

By choosing to engage in classroom experiments, students can express what they want or need. They can recognize their feelings like happy, excited, surprised. They can build a sense of accomplishment as they will learn that different sizes, shapes, and materials affect sinking/floating.* Social Awareness and Responsibility: I can be aware of others and my surroundings (Profile 1).

Students can tell when someone is sad or excited during class activities. They can help their friends and be kind. They are aware that other people can be different and have different ideas from themselves. |

1. **INDIGENOUS WORLDVIEWS AND PERSPECTIVES**

**Key resources:** First Peoples Principles of Learning (FPPL); Aboriginal Worldviews and Perspectives in the Classroom

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| **FPPL to be included in this lesson** *(check all that apply):* | *How will you embed Indigenous worldviews, perspectives, or FPPL in the lesson?* |
| X Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.  X Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).  X Learning involves recognizing the consequences of one's actions. X Learning involves generational roles and responsibilities. X Learning recognizes the role of Indigenous knowledge. X Learning is embedded in memory, history, and story. X Learning involves patience and time.  O Learning requires exploration of one's identity. O Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations. | * Students explore sinking and floating through hands-on activities and experimentation, fostering a personal connection to the concepts and learning through direct experience.
* The lesson allows student collaboration and group discussions, highlighting the importance of sharing knowledge and respecting diverse perspectives. It reflects that learning is a holistic and relational experience.
* The activities encourage students to observe and appreciate how objects interact with water, a vital element in many Indigenous cultures, reinforcing the respect for the natural world.
* Students can enjoy listening to the story *What will float?* related to the topic, indicating that learning is enhanced through stories.
* Teacher acknowledges that learning takes patience and time. Through experiments and reflection, students learn at their own pace, understanding that inquiry and discovery are ongoing processes.
* Learning about sinking and floating can build responsibility in students by fostering important skills and attitudes. They will learn about paying attention to details and taking ownership of their thinking. They experience that making mistakes is a natural part of learning. It leads to their holistic development as human beings.
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1. **BIG IDEAS**

**Key resources:** https://curriculum.gov.bc.ca/ (choose course under Curriculum, match lesson to one or more Big Ideas)

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| *What are students expected to understand? How is this lesson connected to Big Idea/s or an essential question?* |
| Students are expected to understand: * Humans interact with matter every day through familiar materials.
* The motion of objects depends on their properties.

This lesson is to address the question “Does the size, shape, or material of an object affect whether it sinks or floats?”. By observing, predicting, and experimenting, students build foundational scientific skills and vocabulary (the term “buoyancy”), develop their critical thinking and collaboration as they engage in experiments. They will explore how different sizes (big or small), shapes (flat or round), and materials (foil or clay) of objects can affect their ability to sink or float. |

1. **LEARNING STANDARDS/INTENTIONS**

**Key resources:** https://curriculum.gov.bc.ca/ (choose course under Curriculum)

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| **Curricular Competencies:***What are students expected to do?*  | **Content:***What are students expected to learn?* |
| * **Questioning and predicting**
* Questioning and predicting
* Demonstrate curiosity and a sense of wonder about the world
* Observe objects and events in familiar contexts
* Ask simple questions about familiar objects and events
* **Planning and conducting**
* Make exploratory observations using their senses
* **Processing and analyzing data and information**
* Discuss observations
* Represent observations and ideas by drawing charts and simple pictographs
* **Applying and innovating**
* Transfer and apply learning to new situations
* **Communicating**
* Share observations and ideas orally
 | * properties of familiar materials
* effects of size, shape, and materials on movement
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1. **ASSESSMENT PLAN**

**Key resources:** Instructional Design Map andhttps://curriculum.gov.bc.ca/classroom-assessment

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| *How will students demonstrate their learning or achieve the learning intentions? How will they know if they are proficient? How will the evidence be collected, documented and shared? Will you use* ***observation****s, have targeted* ***conversations****, or collect* ***products****? Mention any opportunities for feedback, self-assessment, peer assessment and teacher assessment. What tools, structures, or rubrics will you use to assess student learning (e.g. Performance Standard Quick Scale)? Will the assessments be* ***formative****,* ***summative****, or both?* |
| **Formative Assessment*** Observation of participation and collaboration during class experiment and discussions.
* Review of prediction and observation worksheets.
* Exit ticket: Tell me one thing/object that sinks or floats from today’s experiment.
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1. **DESIGN CONSIDERATIONS**

**Key resources:** Instructional Design Map

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| *Make brief notes to indicate how the lesson will meet needs of your students for: differentiation, especially for known exceptionalities, learning differences or barriers, and language abilities; inclusion of diverse needs, interests, cultural safety and relevance; higher order thinking; motivations and specific adaptations or modifications for identified students or behavioural challenges. Mention any other design notes of importance, e.g. cross-curricular connections, organization or management strategies you plan to use, extensions for students that need or want a challenge.* |
| * Classroom management: provide clear expectations for handling water and objects to minimize mess and distractions. Review rules for good listening.
* Safety considerations: the water tub needs to be stable and not overfilled. Remind students to handle objects gently and avoid splashing water.
* Before making predictions, students can check and handle objects, providing better observation and predictions as well as creating more excitement.
* Provide visual aids, such as a sink/float chart with pictures of objects.
* A sentence starter for predictions and observations "I think this will sink because..." can be provided to guide students.
* Use a simple observation sheet to track student engagement and the accuracy of predictions.
* A reflection question "What surprised you about the objects that sank or floated? Why?" for advanced students.
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| **Required preparation:** *Mention briefly the resources, material, or technology you need to have ready, or special tasks to do before the lesson starts, e.g. rearrange desks, book a room or equipment.* |
| * The book “What will float?”
* Aluminum foil
* Modeling clay
* A large clear container filled with water
* Two foil balls (small and big), two clay balls (small and big), 1 piece of flat tin foil, 1 tin foil boat and 1 clay boat.
* Chart paper and markers
* Student’s reflection worksheet
* Towels for cleanup
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1. **LESSON OUTLINE**

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| **Instructional Steps** | **Student Does/Teacher Does** *(learning activities to target learning intentions)* | **Pacing** |
| **OPENING:***e.g. greeting students, sharing intentions, look back at what was learned, look ahead to what will be learning, use of a hook, motivator, or other introduction to engage students and activate thinking and prior knowledge* | * Gather students on the carpet.
* Review the key terms: We have seen that objects can sink or float.
* Float: Some things stay on top of the water; we say they float.
* Sink: Things go under the water; we say they sink.
* Introduce that: Today, we will explore how the size, shape, and material of objects can affect whether they float or sink. We’ll make predictions, test our ideas, and discover what sinks and what floats.
* Remind students to maintain the importance of scientific observation and curiosity.
 | 5 minutes |
| **BODY:*** *Best order of activities to maximize learning -- each task moves students towards learning intentions*
* *Students are interacting with new ideas, actively constructing knowledge and understanding, and given opportunities to practice, apply, or share learning, ask questions and get feedback*
* *Teacher uses learning resources and strategic opportunities for guided practice, direct instruction, and/or modelling*
* *Can include: transitions, sample questions, student choices, assessment notes (formative or otherwise), and other applications of design considerations*
 | * Read the book “What will float?”
* Introducing new words:
* Size: Objects can be big or small.
* Material: What the object is made of (like wood, metal, or plastic).
* Shape: Objects can be round, flat, or pointy.
* Explain that different sizes, shapes, and materials of objects can affect whether they float or sink.

**Experiment 1: How different sizes of objects can affect their sinking or floating*** Ask students to come back to their seats and look at the water tub on the rainbow table (at the end of the classroom).
* Introduce: If we have objects in different sizes, big and small, like two aluminum foil balls or two clay balls, do you think that will change whether it floats or sinks? Let’s find out together!
* Show two tin foil balls (one small and one big) and two clay balls (one small and one big).
* Allow students to make predictions and record their ideas on the chart paper. Ask students to observe whether it sinks or floats.
* Ask the special helper to gently put the foil balls in the tub.
* Present the result and put it on the chart paper.

**Experiment 2: How different shapes of objects can affect their sinking or floating*** Introduce: If we change the shape of something, like reshaping a clay ball to a boat, do you think that will change whether it floats or sinks? Let’s find out together!
* Show one clay ball (big round) and a clay boat. Allow students to touch the objects.
* Allow students to make predictions and record their ideas on the chart paper.
* Pick one student showing good listening to gently put the clay ball and the clay boat in the tub.
* Present the result and put it on the chart paper.

**Experiment 3: How different materials of objects can affect their sinking or floating*** Introduce: If we have objects made of different materials, like a clay ball and an aluminum foil ball, do you think that affect whether it floats or sinks? Let’s test it out together!
* Show students aluminum foil ball and a clay ball. Allow students to touch the objects.
* Challenge them to predict the result if the balls are placed in the water. Ask them to observe whether it sinks or floats.
* Pick one student showing good listening to gently place the foil ball and the clay ball in the tub.
* Present the result and put it on the chart paper.

**Class Discussion** * Bring students back together to share their observations.
* Ask:
* “What happened when you changed the shape of the aluminum foil and clay?”
* “Which materials floated better? Why do you think that is?”
* “How did size and shape affect floating and sinking?”
* Record their responses on chart paper.

**Reflection and Drawing Activity** * Ask each student to draw one object they tested and indicate whether it floated or sank.

Example: “My boat floated because it was the right shape.”**Extension Activity** (For students finishing their work early)Challenge students to create a foil boat that can carry small objects without sinking. | 25 minutes |
| **CLOSING:*** *Closure tasks or plans to gather, solidify, deepen or reflect on the learning*
* *review or summary if applicable*
* *anticipate what’s next in learning*
* *“housekeeping” items (e.g. due dates, next day requirements*
 | * Highlight that different sizes, shapes, and materials of objects can affect their ability to sink or float.
* Encourage students to explore floating and sinking at home with the help of an adult. Suggest they test household items like bottle caps, sponges, and small toys.
* Exit ticket: Tell me one thing/object that sinks or floats from today’s experiment.
* Cleanup: Assist students in cleaning up their work areas. Dry off objects and hands.
 | 5 minutes |

1. **REFLECTION** *(anticipate if possible)*

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| * *Did any reflection in learning occur, e.g. that shifted the lesson in progress?*
* *What went well in the lesson (reflection on learning)?*
* *What would you revise if you taught the lesson again?*
* *How do the lesson and learners inform you about necessary next steps?*
* *Comment on any ways you modelled and acted within the Professional Standards of BC Educators and BCTF Code of Ethics?*
* *If this lesson is being observed, do you have a specific observation focus in mind?*
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| * **What went well in the lesson**
* The lesson was engaging to the students. I used some questions to help them recall their prior knowledge about floating and sinking.
* The book was appropriate, making them excited to start the experiments.
* Allowing students to make predictions before doing the experiments drew their attention to the lesson. Throughout the lesson, the students enjoyed predicting, discussing, and observing what happened with the targeted objects.
* Most of the students gained a sense of achievement when their predictions were correct, giving them motivation to keep learning.
* I was able to hold the class discussion about how materials, sizes, and shapes affected floating and sinking.
* Most of the students were able to draw one or two things that floated or sank from the experiments.
* I encouraged the students to continue exploring floating and sinking at home.
* **What would you revise if you taught the lesson again**
* During the story, I should ask questions to recall the experiments we did last week. Also, I would allow students to make predictions as we read the book. It reminds them of scientists making predictions before testing them out. It could make reading more fun and interesting.
* I would explain how floating and sinking are represented in the visual aids more clearly. Using a good marker is to help students easily see it on the chart paper.
* I would show a flat piece of tin foil and crumple it to make a tin foil ball. That helps students to understand how I made foil balls for the experiments.
* After each time students made predictions, I would summarize what they predicted.
* I would allow students to have more time to discuss their findings after the experiments since it allows them to solidify their knowledge about the topic.
* **How do the lesson and learners inform you about necessary next steps?**
* I will need to discuss further with C. to help him clarify his understanding.
* I will need to help a couple of students who were still confused about the experiments’ results.
* **Comment on any ways you modelled and acted within the Professional Standards of BC Educators and BCTF Code of Ethics?**
* I understand that doing experiments can draw students’ attention, allowing them to learn and remember better.
* I provided scaffoldings to students since I value their success in education.
* I encouraged the participation of all the students in the class, showing an inclusive classroom.
* I talked and asked my coaching teacher for her opinions to improve my lesson. I revised my lesson before teaching it.
* **If this lesson is being observed, do you have a specific observation focus in mind**
* I will encourage the class to focus and actively participate in the experiment process.
* I will focus on the discussion to recap what the students can get from all three experiments.
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Picture of the experiments



Prediction and Observation Chart

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