Lesson Plan

Date	Feb 24, 2025	**Lesson Title**	What does it mean to float?	**Grade Level**	Kindergarten
Time in Lesson	40 Minutes	**Subject**	STEM	**Lesson #**	1
Developed by	Taylor Dobbin				

Identify Desired Results

Learner Outcomes from the Program of Studies
What are the SPECIFIC outcomes to be addressed in this lesson?

- Ways of Working
  - Conversations and Communications
    - 6.1 Communicate the results of investigations and explorations in a variety of ways (Sc GLOs 1-5)
    - 6.5 Listen to the opinions, ideas and thoughts of others. (ELA1.2.2)
    - 6.6 Communicate opinions and ideas. (ELA 1.2.2)
- Problem Solving and Decision-Making
  - 9.1 Access, select, organize, and record information and ideas, using various sources, tools and technologies. (SS Core Skills)
  - 9.2 Finds, collects, questions, records and creates using information and communication technology (ICT)
  - 9.3 Record relevant observations, findings and measurements using pictorial representations, charts, drawings, concrete materials and written language (SC GLO 1-5, ELA 3.2.3).
  - 9.4 Use critical thinking skills to make observations, and decisions and to solve problems (SS Core Skills)

Objective in student-friendly language **What will students understand/experience/appreciate as a result of this lesson?**	**Assessment Strategies** **What will I accept as evidence of learning/development? Have I employed formative assessment? Do I make use of prior assessments in this lesson?**
By the end of this lesson, students will… ● be able to describe what it means to float and sink	● group discussion ● small group discussion ● recording student thoughts
Resources **What materials/resources/technology will be required?**	**Personalization/Differentiation** **How will you attend to the needs of ALL learners in this lesson?**

• Video Read Aloud Bronx Children's Museum: "What Sinks? What Floats?" by Rozanne Lanczak Williams Read Aloud • objects to describe floating or sinking • whiteboards/markers • water • tub	• Use visual aids (pictures of floating and sinking objects) to help explain the concepts. • Incorporate hands-on experiences, allowing students to explore water and objects themselves.

LESSON PLAN SEQUENCE

Introduction **How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?**		
• Begin with a Discussion on Floating: ○ Start by asking students if they have ever noticed certain objects that float in water, such as boats, rubber ducks, or even fruits like apples. Invite them to share their observations and experiences. Encourage them to think about questions like: What do all these floating objects have in common? How do they differ from objects that sink? This will help spark their curiosity.		
Learning/Activity Sequence **How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/or EVALUATE their understanding of the outcomes?**		
What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	**What are the STUDENTS doing? How are they engaged while you are teaching the lesson?**	**Approx. time**
Bring the students to the carpet and have them get ready to learn. Sit where they are listen and be comfortable.	Students are sitting and ready to learn	**2 minutes**
Encourage students to name items that float (e.g., a rubber duck, a leaf) and items that sink (e.g., a rock, a coin). Ask them why they believe some objects float while others sink. Invite them to share their thoughts.	See how many items students can list out and then explain why they think the way they do	**5-10 minutes**
Show the students a read-aloud book about floating and sinking: Bronx Children's Museum: "What Sinks? What Floats?" by Rozanne Lanczak Williams Read Aloud This book breaks down the idea of floating and sinking to students and brings in the terminology for the students to be familiar with.	the students will listen to the book and see if it reflects their ideas or challenges their ideas	**10 minutes**

There will be a bucket of water brought to the carpet with a few items to test for floating or sinking. Together we will determine what the item is going to do when it is in the water. This will get them thinking for the following lesson.	Students will guess if the item will float or sink and give their reasoning why or why not.	**15-20 minutes**

Conclusion

How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

The students will be curious to explore the concept of floating, prompting questions like why some objects float while others sink. They will investigate factors such as size, weight, and shape, leading them to consider concepts like density and buoyancy.

Through hands-on experiments, they'll test various materials and ask critical questions, such as what makes a boat float or how shape influences buoyancy. This exploration will enhance their understanding of physical science and develop their critical thinking skills.

PRE-SERVICE TEACHER SELF-REFLECTION

In your self-reflection on your lesson, please consider the following questions:

1. What went well in your lesson? What were the strengths of the lesson?
2. What are the areas that need to be refined? What might you do differently next time?
3. What are your next steps to further develop/ refine this lesson? How will you continue to grow in your practice? What actions will you take?

These are additional questions that can help guide your response to the three self–reflection questions.

- **How do you feel your students experienced this lesson?**
- **How were they able to make explicit and self-evaluate their growing understanding, skills and/or knowledge?**
- **How did you employ formative assessment for/of/as learning?**
- **Were you successful in reaching all students? How do you know? How did you accommodate diverse learners and those requiring accommodations?**
- **Were there opportunities to address Indigenous, multicultural and interdisciplinary activities and knowledge?**

The students were engaged in the activity and they were showing interest in the topic of floating and sinking. I changed the book that I showed the students, I found one called Captian Kidd's Experiments with Floating and Sinking. They brought up their own experiences of floating and what they thought it meant to sink. The next steps of this unit will be used to address the math aspects when it comes to boat building.

Lesson Plan

Date	Feb 25, 2025	**Lesson Title**	Putting to Practice	**Grade Level**	Kindergarten
Time in Lesson	40 Minutes	**Subject**	STEM/ELA/Math	**Lesson #**	2
Developed by	Taylor Dobbin				

Identify Desired Results

Learner Outcomes from the Program of Studies **What are the SPECIFIC outcomes to be addressed in this lesson?**
● Ways of Thinking o Problem Solving and Decision-Making ▪ 9.1 Access, select, organize, and record information and ideas, using a variety of sources, tools and technologies. (SS Core Skills) ▪ 9.2 Finds, collects, questions, records and creates using information and communication technology (ICT) ▪ 9.3 Record relevant observations, findings and measurements using pictorial representations, charts, drawings, concrete materials and written language (SC GLO 1-5, ELA 3.2.3). ● Tools for Working ○ Applied Literacies - Mathematics ■ 11.10 Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight) and volume (capacity). (Math 3a.1)

Objective in student-friendly language **What will students understand/experience/appreciate as a result of this lesson?**	**Assessment Strategies** **What will I accept as evidence of learning/development? Have I employed formative assessment? Do I make use of prior assessments in this lesson?**

By the end of this lesson, students will… ● be able to predict if an object will float or sink and record their answer ● be able to work with partners ● be able to take turns ● be able to describe why the item did or did not float or sink	● completion of the float and sink prediction page ○ if they can draw or write the object in the correct spot and correctly say if it will float or sink ● record their findings in the groups ● Share responsibilities ● Observation
Resources **What materials/resources/technology will be required?**	**Personalization/Differentiation** **How will you attend to the needs of ALL learners in this lesson?**
● Baggies of objects ○ corks, paper clips, tin foil, pencils, pins, coins, etc. ● Float or Sink Page ● Tupperware ● Water ● IPads ● Pencils	● Ask them to predict why certain objects float or sink, discussing material, size, and weight. ● Provide a set of objects that require more complex predictions (e.g., a heavy plastic toy vs. a light metal object). ● Ask them to sort objects based on additional criteria (e.g., materials like metal, wood, plastic, etc.). ● Use visual aids like pictures or simple words like "float" and "sink". ● Pair them with a buddy for additional support and use hands-on guidance to reinforce the concept. ● Provide pre-sorted objects and have them focus on choosing between "float" and "sink" categories. ● Use assistive technology or work with a peer to help record findings.

LESSON PLAN SEQUENCE

Introduction **How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?**
● Engage the students by asking if they remember what we learned about floating and sinking from the book and our discussion yesterday. Encourage them to use key terms like "buoyancy" and "density" to explain why some objects float while others sink. ● Then, invite them to share any additional thoughts or experiences they have related to floating and sinking. For example, ask if they noticed anything unusual about objects in water. This can lead to a deeper discussion and help them connect their observations to the concepts we explored.

Learning/Activity Sequence **How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/or EVALUATE their understanding of the outcomes?**		
What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	**What are the STUDENTS doing? How are they engaged while you are teaching the lesson?**	**Approx. time**
• Begin by reviewing what was learned the previous day. Ask students to share any thoughts or new ideas they might have about why things float.	• Can the students share any new thoughts?	**5-8 minutes**
• Students can form groups themselves or be assigned to groups by randomly selecting names. Provide each student or group with small samples of different materials and ask them to predict whether each material will float or sink before testing it in water. Have the students document their predictions and results in a simple chart titled Float or Sink Page. Additionally, set a timer to help students keep track of the time allotted for this activity.	• In groups, students will record their predictions on the paper. They will have a discussion with their partner about each object and draw or write the object in the correct spot.	**10 minutes**
• The students will be asked to return to the carpet and introduced to the next steps • each pairing will be given an iPad and a bucket of water to use for the testing of their predictions. • The teacher will explain how to use the iPad properly, how to record a video and how far away they should stay from the water. ○ each pairing can take turns recording their findings • They will then test their prediction in the bucket of water and record themselves doing so.	• Students will be working in the pairing on recording and demonstrating their predictions	**15-20 minutes**
• When the students are done they can share their videos with other pairings to see if they have gotten the same answer	• Students can share their findings with the teacher and their peers	**5 minutes**

Adapted from Wiggins, Grant & J. McTighe (1998)

Conclusion

How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

- This experiment will help you learn how to explain what you did using the right science words. You'll also get a better understanding of why some things float in water while others sink. By talking about things like the shape, size, and material of the objects, you'll see how these factors can change how they behave in water.
- You'll also think about things like the temperature of the water and other conditions that might affect the experiment. As you discuss and try out different ideas, you'll figure out how making small changes can lead to different results.
- This experiment isn't just about learning facts—it's about practicing how to think critically and test your ideas. These skills will help you in future experiments and help you ask more questions about the world around you!

PRE-SERVICE TEACHER SELF-REFLECTION

In your self-reflection on your lesson, please consider the following questions:

1. What went well in your lesson? What were the strengths of the lesson?
2. What are the areas that need to be refined? What might you do differently next time?
3. What are your next steps to further develop/ refine this lesson? How will you continue to grow in your practice? What actions will you take?

These are additional questions that can help guide your response to the three self–reflection questions.

- **How do you feel your students experienced this lesson?**
- **How were they able to make explicit and self-evaluate their growing understanding, skills and/or knowledge?**
- **How did you employ formative assessment for/of/as learning?**
- **Were you successful in reaching all students? How do you know? How did you accommodate diverse learners and those requiring accommodations?**
- **Were there opportunities to address Indigenous, multicultural and interdisciplinary activities and knowledge?**

- I feel this group could have chosen their partners for added flexibility. Allowing this choice might empower them, but I also recognize they enjoy the fun of the unpredictability of not knowing who their partner will be. In the future, I might consider letting them decide their groupings if they're interested, as it could enhance their engagement while balancing structure with spontaneity.

Lesson Plan

Date	Feb 26, 2025	**Lesson Title**	How does a Boat Float?	**Grade Level**	Kindergarten
Time in Lesson	40 Minutes	**Subject**	STEM/Math/Indigenous Studies	**Lesson #**	3
Developed by	Taylor Dobbin				

Identify Desired Results

Learner Outcomes from the Program of Studies
What are the SPECIFIC outcomes to be addressed in this lesson?

- Ways of Working
  - Conversations and Communications
    - 6.5 Listen to the opinions, ideas and thoughts of others. (ELA1.2.2)
    - 6.6 Communicate opinions and ideas. (ELA 1.2.2)
- Ways of Thinking
  - Creativity and Innovation
    - 8.1 Design, make and create (Sc GLOs 1-5)
    - 8.2 Use creative thinking skills to make observations, and decisions and devise forward-thinking strategies. (SS Core Skills)
    - 8.3 Create artworks that express your observations and ideas about the world. (SK Arts, p.27)

Objective in student-friendly language **What will students understand/experience/appreciate as a result of this lesson?**	**Assessment Strategies** **What will I accept as evidence of learning/development? Have I employed formative assessment? Do I make use of prior assessments in this lesson?**
By the end of this lesson, students will… ● be able to describe different boats and their functionality ● be able to describe the shapes used to make up boats ● be able to design their boat on paper ● students will think of the materials that they would like to use when creating their boat	● drawings ○ what did the students come up with for their boat designs? ● observation ● classroom discussion
Resources **What materials/resources/technology will be required?**	**Personalization/Differentiation** **How will you attend to the needs of ALL learners in this lesson?**

Adapted from Wiggins, Grant & J. McTighe (1998)

• Video: ○ ASK ADAM - How Do Boats Float? Fun Learning f… • Blank Paper • Markers/Crayons/Pencils	• Students will be able to use tactile materials to design their boats if they need to have a visual instead of drawing • students will be able to collaborate when they are thinking of how they want their boat to look • visuals and videos will be offered for the students to be able to get ideas from and have a visual of how they can make a boat out of recycled materials

Lesson Plan Sequence

Introduction **How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?**		
• Our group discussion will be about what it means to float and sink! We'll start by chatting about our thoughts on these concepts and share some fun examples from our everyday lives. After we're warmed up, I'll ask everyone, "Can you think of some bigger objects that float?" This will lead us nicely into exploring the fascinating world of boats and how they're designed to stay on the water. • Next, we'll dive a bit deeper! We've talked about how heavy objects usually sink, so I'll ask the students a question like: "If heavy things sink, why do you think boats, which can be quite large and made of materials like metal, can float?" This will get everyone thinking and might spark some great discussions about the science behind buoyancy.		
Learning/Activity Sequence **How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/or EVALUATE their understanding of the outcomes?**		
What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	**What are the STUDENTS doing? How are they engaged while you are teaching the lesson?**	**Approx. time**
• The teacher will start by having the students come to the carpet for a quick discussion on what they remember • The teacher will ask the students what they know about boats.	• Students will share their ideas about what they know about boats	**5 minutes**
• A video will be put on for the students to watch about boats the shapes that the students see in them and the different types of boats out there.	• students will watch the video	**8-10 minutes**

• The teacher will lead a group discussion on boats, exploring how they float and the different types that exist, with a special focus on boats used in indigenous cultures. The teacher will show examples of various boats and highlight those used in indigenous cultures, explaining what materials they are made of and their cultural significance.	• During the group discussion, students' job is to actively participate by sharing their ideas about how boats float and the different types of boats they know, particularly those used in indigenous cultures. They should listen carefully to the examples provided by the teacher and ask questions if they need clarification.	**5-8 minutes**
• Students will be directed to sit at their assigned seats and design a boat they would like to build. They will include details such as shapes, features, and colours in their designs, ensuring to make their boat unique and creative.	• During the design activity, students' job is to sit at their assigned seats, create a detailed design of a boat they would like to build and incorporate shapes, colours, and specific features that reflect their ideas. They should focus on being creative and thoughtful in their design process.	**15 minutes**

Conclusion

How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

In conclusion, students will reflect on what they learned about the science behind how boats float and the various types of boats discussed. They will share their designs with the class, explaining their choices for shapes, features, and colours, and how these elements might relate to the types of boats they studied. The teacher will encourage students to connect their designs to the lessons learned about indigenous cultures and boat construction.

PRE-SERVICE TEACHER SELF-REFLECTION

In your self-reflection on your lesson, please consider the following questions:

1. What went well in your lesson? What were the strengths of the lesson?
2. What are the areas that need to be refined? What might you do differently next time?
3. What are your next steps to further develop/ refine this lesson? How will you continue to grow in your practice? What actions will you take?

These are additional questions that can help guide your response to the three self–reflection questions.

- **How do you feel your students experienced this lesson?**
- **How were they able to make explicit and self-evaluate their growing understanding, skills and/or knowledge?**
- **How did you employ formative assessment for/of/as learning?**
- **Were you successful in reaching all students? How do you know? How did you accommodate diverse learners and those requiring accommodations?**
- **Were there opportunities to address Indigenous, multicultural and interdisciplinary activities and knowledge?**

- The students were excited to begin their boat-building journeys, eagerly diving into the creative process of designing their boats. This enthusiasm sparked thoughtful reflections on how their boats would float. As they worked, they began considering important concepts such as shape, material, and balance—realizing that these factors would affect the boat's ability to stay afloat. Many students experimented with different designs, considering how the weight of their boat might be distributed and which materials could help their creation remain buoyant.
- In addition to their designs, students were encouraged to think about indigenous perspectives, especially when reflecting on traditional canoes used by various cultures. Learning about how the Dene communities crafted their canoes from natural materials like wood, bark, and roots gave students a deeper understanding of how these cultures used their surroundings to create functional and durable boats.
- This hands-on activity not only engaged their creativity but also deepened their understanding of the principles of buoyancy and the science behind how boats float. Through this process, students were able to connect theoretical knowledge with practical application, fostering both critical thinking and problem-solving skills while appreciating the rich traditions and innovations of indigenous boat builders.

Lesson Plan

Date	Feb 28, 2025	**Lesson Title**	Boat Building	**Grade Level**	Kindergarten
Time in Lesson	120 Minutes	**Subject**	STEM/Art/Math	**Lesson #**	4
Developed by	Taylor Dobbin				

Identify Desired Results

Learner Outcomes from the Program of Studies
What are the SPECIFIC outcomes to be addressed in this lesson?

- Ways of Working
  - Conversations and Communications
    - 6.1 Communicate the results of investigations and explorations in a variety of ways (Sc GLOs 1-5)
    - 6.5 Listen to the opinions, ideas and thoughts of others. (ELA1.2.2)
    - 6.6 Communicate opinions and ideas. (ELA 1.2.2)
- Ways of Thinking
  - Creativity and Innovation
    - 8.1 Design, make and create (Sc GLOs 1-5)
    - 8.2 Use creative thinking skills to make observations, and decisions and devise forward-thinking strategies. (SS Core Skills)
    - 8.3 Create artworks that express your observations and ideas about the world. (SK Arts, p.27)

Objective in student-friendly language **What will students understand/experience/appreciate as a result of this lesson?**	**Assessment Strategies** **What will I accept as evidence of learning/development? Have I employed formative assessment? Do I make use of prior assessments in this lesson?**
By the end of this lesson, students will… ● use their knowledge of floating and sinking to build a boat	● Hands-on activities ○ are they using their knowledge of floating to build a boat with that in mind? ● Observation ● Discussion ○ this happens 1:1 to help students guide their thinking and help them make their ideas come to light

Adapted from Wiggins, Grant & J. McTighe (1998)

Resources What materials/resources/technology will be required?	Personalization/Differentiation How will you attend to the needs of ALL learners in this lesson?
● boxes ● tape ● glue ● recycled materials ● plastic wrap ● tin foil ● foam pieces ● exacto knife or large scissors	● Visual Learners: ○ Use a picture chart showing examples of floating and sinking objects before the activity. ○ Provide them with colourful, labelled materials to help them visually identify the parts of their boat. ○ Allow these students to decorate their boats with different colors and designs, so they feel engaged in the creative process. ● Auditory Learners: ○ For auditory learners, try singing a short song about floating and sinking (like the "Floating and Sinking Song") before and after the activity. ○ Have them explain their design ideas aloud to a partner or the class, encouraging verbal expression of their thinking. ● Kinesthetic Learners: ○ These learners can benefit from hands-on activities like experimenting with different materials, touching the water to see how it feels when a boat floats, and adjusting their boat's shape and materials. ○ Encourage these students to test and adjust their boat as they try to figure out how to make it float better (e.g., adding weight or using more buoyant materials)

LESSON PLAN SEQUENCE

Introduction How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?
● Begin by introducing the concept of floating and sinking. ○ Ask the students: "What happens when you put a rock in water? Does it float or sink?" ○ Show a few objects (e.g., a rock, a plastic toy, a piece of paper) and test them in a small container of water to demonstrate floating and sinking. ○ Discuss why some objects float and others sink (e.g., heavier items tend to sink, while lighter items tend to float).

Learning/Activity Sequence **How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/or EVALUATE their understanding of the outcomes?**		
What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	**What are the STUDENTS doing? How are they engaged while you are teaching the lesson?**	**Approx. time**
Inform the students that they will be constructing their boats using recycled materials. Present the various materials available for their use, such as plastic bottles, foam, cardboard, and more. Clarify that the objective is to design a boat capable of floating in water, and they are free to decorate it in any way they choose.	students will take the materials they brought and think about what they can do with them	**10-15 minutes**
Divide the class into small groups or allow individual students to construct their boats. Encourage creativity by utilizing recycled materials. Students can use scissors, glue, tape, and markers to assemble and personalize their creations. Guide them by posing questions such as, "What do you think will help your boat float?" and "How can we ensure that our boat doesn't sink?"	students will build their boats check in with the students to see if they need help cutting tape, tin foil or other materials	**100 minutes 2-3 periods depending on how engaged the students are with the building**

Conclusion
How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

During this activity, you'll focus and put in the effort to do your best work. You'll have time to experiment and learn by actually making your boat! By testing different objects and materials in water, you'll see how things float and sink. As you build and try out your boat, you'll learn about buoyancy, which is why some things float and others sink. You'll also discover how density (how heavy or light something is) and displacement (how much water an object pushes out of the way) affect whether something floats or sinks.

While you experiment, you'll explore different materials and shapes for your boat. You'll write down or draw what happens and think about why some things float and others sink. This will help you think more clearly and make you a better scientist as you learn by doing!

PRE-SERVICE TEACHER SELF-REFLECTION

In your self-reflection on your lesson, please consider the following questions:

1. What went well in your lesson? What were the strengths of the lesson?
2. What are the areas that need to be refined? What might you do differently next time?
3. What are your next steps to further develop/ refine this lesson? How will you continue to grow in your practice? What actions will you take?

These are additional questions that can help guide your response to the three self–reflection questions.

- **How do you feel your students experienced this lesson?**
- **How were they able to make explicit and self-evaluate their growing understanding, skills and/or knowledge?**
- **How did you employ formative assessment for/of/as learning?**
- **Were you successful in reaching all students? How do you know? How did you accommodate diverse learners and those requiring accommodations?**
- **Were there opportunities to address Indigenous, multicultural and interdisciplinary activities and knowledge?**

- Got to explore the materials we had to build your boats. They got creative, choosing pieces like foam, plastic bottles, cardboard, and other recycled items. As they worked, they added special elements that made their boats unique and reflected their ideas and what you've learned. Some of them have added cool designs, while others thought about how to make their boat float the best. It was exciting to see how each of them used the materials in their own way to make the boat reflect their creativity and their learning. This helped to think not only about how to build a boat but also about how to use the science they've learned to make it work!

Lesson Plan

Date	March 3, 2025	**Lesson Title**	Testing the Boats	**Grade Level**	Kindergarten
Time in Lesson	40 Minutes	**Subject**	STEM/SEL	**Lesson #**	5
Developed by	Taylor Dobbin				

Identify Desired Results

Learner Outcomes from the Program of Studies
What are the SPECIFIC outcomes to be addressed in this lesson?

- Tools for Working
  - Applied Literacies - Mathematics
    - 11.10 Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight) and volume (capacity). (Math 3a.1)
- Ways of Thinking
  - Problem Solving and Decision-Making
    - 9.1 Access, select, organize, and record information and ideas, using a variety of sources, tools and technologies. (SS Core Skills)
    - 9.2 Finds, collects, questions, records and creates using information and communication technology (ICT)
    - 9.4 Use critical thinking skills to make observations, and decisions and to solve problems (SS Core Skills)
    - 9.12 Ask questions and use prior knowledge to make sense of information. (ELA 3.2.4)

Objective in student-friendly language **What will students understand/experience/appreciate as a result of this lesson?**	**Assessment Strategies** **What will I accept as evidence of learning/development? Have I employed formative assessment? Do I make use of prior assessments in this lesson?**
By the end of this lesson, students will… ● test their boats to see if they can float or if they will sink ● be able to stay positive and encouraging during the process and be kind to their friends/peers as they are testing their creations	● staying positive during the process and being helpful to their friends ● it does not matter if they float or sink as long as they try and can recognize if there is anything they need to improve on ● they can recognize the shapes in the boats

Resources **What materials/resources/technology will be required?**	**Personalization/Differentiation** **How will you attend to the needs of ALL learners in this lesson?**
● water and table ● students boat creations ● names to draw for the order of who goes next	● For All Students: ○ Each of you will gently place your boat in the water one at a time, watching closely to see if it floats or sinks. ○ As you test your boat, think about why it's doing what it's doing. Is it floating well, or is it sinking a little bit? ● For Auditory Learners: ○ Listen carefully to the discussions as we test each boat. When it's your turn, explain aloud what you think will happen to your boat and why. You can also ask questions or talk with a partner about what you're observing. ● For Kinesthetic Learners: ○ As you test your boat, you might want to physically move it around in the water to see how it behaves. You can also adjust your boat by adding materials or changing the shape right there in the water to see if it floats better! ● For Students with Special Interests: ○ If you love pirates or sea creatures, you can test how well your boat can hold a little pirate figure or toy fish. Does it float even with a toy on top? This adds a fun challenge to your testing! ● For Students Who Need Extra Support: ○ If your boat doesn't float, I can help you by adjusting the materials together, or you can try out some new ideas like making your boat a different shape or using a lighter material. Don't worry—every test is a learning opportunity!

LESSON PLAN SEQUENCE

Introduction **How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?**		
The students will take some time to reflect on the boats they've created, thinking carefully about how their boats performed during the water test. They will consider if the boat floated the way they expected, or if it sank or tipped over. As they analyze their boats, they'll ask themselves if there's anything they can change or add to make the boat work better or look the way they want. Maybe they'll think about changing the shape, adding more materials, or adjusting the weight to improve how their boat floats. They might also decide to decorate it differently or add special touches to make it unique. This will be their chance to problem-solve and get creative, figuring out how to make their boat the best it can be based on what they've learned so far.		
Learning/Activity Sequence **How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/or EVALUATE their understanding of the outcomes?**		
What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	**What are the STUDENTS doing? How are they engaged while you are teaching the lesson?**	**Approx. time**
The students will gather on the carpet and they will be asked the questions: is it okay if your boat sinks? ● this is to bring up the concept of frustration and disappointment if their boats sink ● it also gets the students thinking about science in that you will make mistakes and have to try again and that is okay to do so	the students will think about expressing their ideas and their ability to be frustrated if their boat doesn't float but also be happy that they have created	**5 minutes**
● There will be a water table set up ● 3 names at a time will be drawn and those students will get their boats and be ready to float them, ● this is to make sure that not every student will have their boat at once and get distracted ● students will put their boats in the water and see if they float The students can take their boats home after testing them!	The students will be sitting on the carpet to watch everyone else test their boats. they will share what shapes they see in their peers' boat creations	**35 minutes**

Adapted from Wiggins, Grant & J. McTighe (1998)

Conclusion

How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

The students will be encouraged to share their observations and reflections with the class. They will discuss any changes they made to their boats and why those changes were important to the boat's performance. Students can also share any creative ideas they implemented, like decoration or adding new materials to improve their boat's design.

PRE-SERVICE TEACHER SELF-REFLECTION

In your self-reflection on your lesson, please consider the following questions:

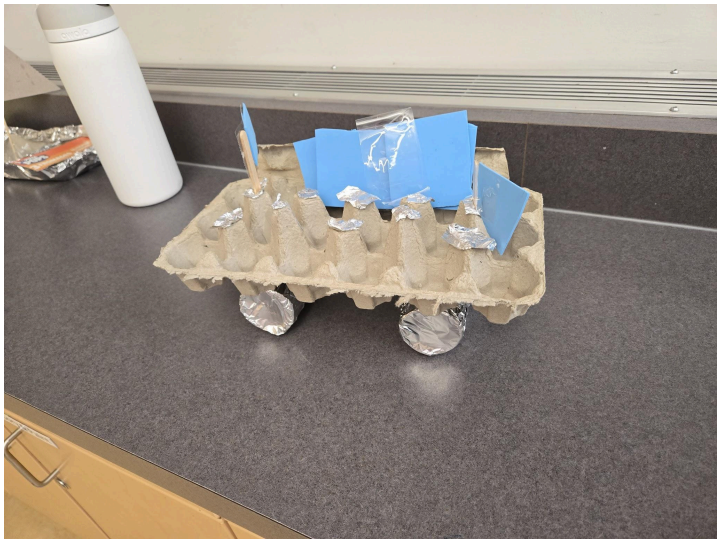
1. What went well in your lesson? What were the strengths of the lesson?
2. What are the areas that need to be refined? What might you do differently next time?
3. What are your next steps to further develop/ refine this lesson? How will you continue to grow in your practice? What actions will you take?

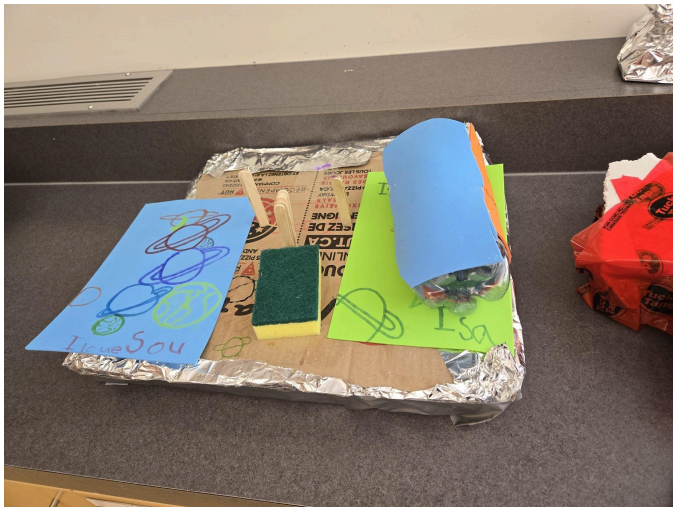
These are additional questions that can help guide your response to the three self–reflection questions.

- **How do you feel your students experienced this lesson?**
- **How were they able to make explicit and self-evaluate their growing understanding, skills and/or knowledge?**
- **How did you employ formative assessment for/of/as learning?**
- **Were you successful in reaching all students? How do you know? How did you accommodate diverse learners and those requiring accommodations?**
- **Were there opportunities to address Indigenous, multicultural and interdisciplinary activities and knowledge?**

- To close this part of the lesson, students will be encouraged to share their ideas with the class. The teacher will highlight how this process of testing, reflecting, and improving is an important part of problem-solving and the scientific method. The lesson will end with a brief discussion about how all designs can be improved through careful thought and adjustments.

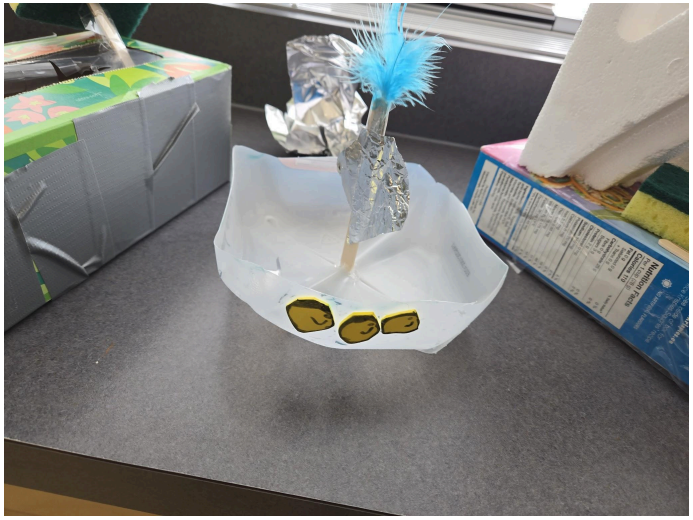
Examples of Boats Students Made:











Adapted from Wiggins, Grant & J. McTighe (1998)