

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM Lesson Plan

Lesson Title: Paper Boat Experiment Lesson # 4 Date: Nov 29th 2024
 Name: Jonah Hector Subject: L.A. Grade(s): 3

Rationale:

Students will make inferences and complex sentences to estimate how many coins it will take to sink a paper boat placed in water. This exercise will help them use language arts to write down expectations and express why they have made those inferences. Additionally, this lesson has a multitude of cross-curricular opportunities.

Core Competencies:

Communication	Thinking	Personal & Social
	Students learn to engage in inquiry when they identify and investigate questions, challenges, key issues, or problematic situations in their studies, lives, and communities and in media.	Students who are personally aware and responsible take ownership of their choices and actions.

Big Ideas (Understand)

Using language in creative and playful ways helps us understand how language works

Learning Standards

(DO)	(KNOW)
Learning Standards - Curricular Competencies	Learning Standards - Content
<ul style="list-style-type: none"> Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation Make connections between ideas from a variety of sources and prior knowledge to build understanding 	<ul style="list-style-type: none"> Metacognitive strategies Writing processes Legible handwriting Sentence Structure Conventions

Instructional Objectives & Assessment

Instructional Objectives (students will be able to...)	Assessment
<ul style="list-style-type: none"> Students will be able to explore how to use language to make an estimate and defend their choice Students will be able to reflect on their estimate after the demonstration and create a sentence to define that 	<ul style="list-style-type: none"> See that students estimate within a suitable range to show their understanding Be able to make inferences from their sentences on what they believe is going to happen and why

Prerequisite Concepts and Skills:

Basic sentence structure, ability to fold paper, ability to make estimates

Indigenous Connections/ First Peoples Principles of Learning:

Learning involves recognizing the consequences of one's action

-Students will have to reflect on why their assumption was either too high or too low or close

Universal Design for Learning (UDL):

For students who find it difficult to create paper boats, I will have a few pre-made so that they can still participate and decorate the boats. For students who struggle with writing sentences, I will give them the option to work with a partner to make an estimate. For those who struggle with the explanation of why they made that guess I will provide a few examples on the board.

Differentiate Instruction (DI):

I will make sure to have a video to follow along to as well as myself in the boat making process. I will make sure that the paper used to fold the boats has guiding lines to aid students.

Materials and Resources

80x pennies (treasure)
24x worksheets
Tub for water
Access to water
Expo Markers
1x pre-made boat

Lesson Activities:

Teacher Activities	Student Activities	Time
Introduction (anticipatory set – “HOOK”): (Show the paper boat and hold it up for the class to see.) “Class, meet our little paper boat! This boat has an incredible journey ahead, one filled with challenges and mysteries. But before we begin, let me tell you its story.”: “Once upon a time, there was a brave little paper boat who dreamed of carrying treasure across a great, watery sea. But the boat had one question: How much treasure (pennies) could I carry before it sank? The boat knew its strength, but it needed help from a crew of clever sailors to find out.”	Students sit in their seats and listen to the story	5 mins
Body: After the story, Prompt students to take out their worksheets and pose the question : “How much treasure (pennies) do you think it can carry before it sinks?” Inform students to write a prediction using appropriate sentence structure such as: “I think the boat will hold __ pennies before it sinks because:_____” Once students have recorded their estimates and come up with a reason the experiment may begin	Students take out worksheet and writing utensil Allow students to work independently or in pairs to come up with their estimate and reason	10 mins

Ask students to take turns coming up and placing a piece of treasure into the boat sitting in water based on names pulled from the popsicle stick cup. Ask the class to count all together (choral counting). Go until the boat capsizes or falls apart making sure to record how much treasure it took.	Students stay at their desks but can stand or sit to see the experiment taking place and wait their turn to get called up	5-10 mins
Closure: Ask students to reflect on the activity by either writing a short story expressing how the boat stayed afloat or sank based on their production or by drawing a picture to represent this	Students work at desks in pairs or independently	5 mins

Organizational Strategies:

To catch attention I will use 1,2,3 eyes on me. I will make sure not to say "you guys" as a collective term and use other group terms. I will be sure to keep the activity moving along as to not go over time.

Proactive, Positive Classroom Learning Environment Strategies:

Applaud students ability to make estimates and prompt their thinking as to why Encourage abstract drawings on the boats including words (s.s. boat) Create a fun and interactive environment for learning

Extensions:

This lesson could extend to science, math, and art due to all the cross-curricular thinking that takes place
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Reflections (if necessary, continue on separate sheet):

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