GRADE 6/7 MATHEMATICS: Integers in the Real World

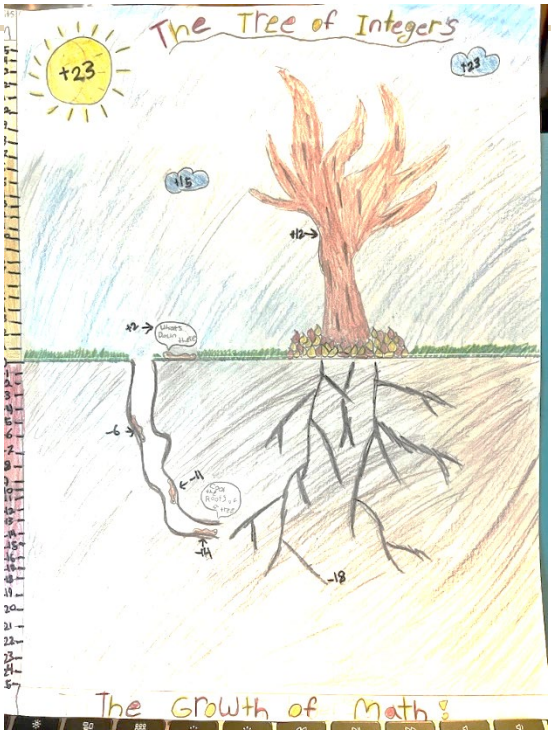
Summary of Learning Opportunity		
This learning opportunity connects integers to real-life scenarios by discussing and visualizing what positive and negative numbers look like in our lives. Our class completed previous lessons showing integers through tiles, number lines, and thermometers. In this task, students were asked to create their own 'story', drawing, or picture to demonstrate their learning and understanding of positive and negative integers. We began by brainstorming a list of criteria that the students and teacher should look for when reviewing their final products. Together we decided the scenario should be "realistic" in terms of math (integers), it needed to represent both positive and negative integers, and that it must have a number line showing 'opposite integers.' Students were given creative freedom as to represent their scenario in any format.		
Curricular Competencies and Content	**Math 6/7**	• Model mathematics in contextualized experiences • Visualize to explore mathematical concepts • Represent mathematical ideas in concrete, pictorial, and symbolic forms • Operations with integers (Mathematics 7)

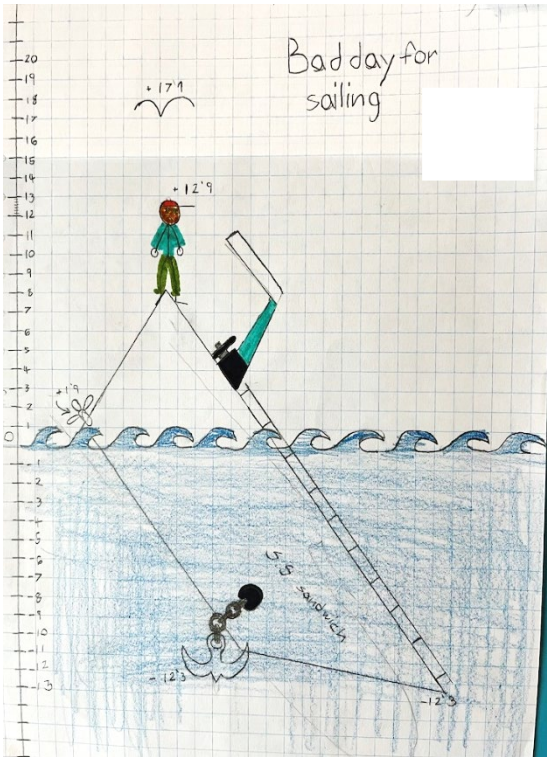
Literacy Connections	Instruction and Assessment	Competencies Developed, Practiced, and/or Assessed
LITERACY: Comprehends Texts – Makes connections	1. We reviewed past lessons on what integers are. I shared some real-world scenarios such as a parkade with above and below ground parking. The students discussed and visualized this and other scenarios.	Visualize to explore mathematical concepts
LITERACY: Develops Ideas – Generates Ideas	2. Pairs of students brainstormed possible scenarios based on their life experiences and shared these with the class. During the partner brainstorming I circulated to make observations and hold informal conversations to prompt students to explain their ideas. I then introduced the assessment task and the students and I co-created the success criteria.	Visualize to explore mathematical concepts Model mathematics in contextualized experiences
LITERACY: Communicates – Expresses ideas and information	3. Students created drafts of their communication about integers. I encouraged students to refer to the success criteria that we had created together. Students shared their final work via the document camera and via a gallery walk. Students discussed and gave each other suggestions to improve communication of their understanding.	Represent mathematical ideas in concrete, pictorial, and symbolic forms

Proficient Student Work, Teacher Assessment, and Reflection

Teacher's Observations and Assessment

This student demonstrated their proficiency to visualize and explore mathematical concepts by explaining their brainstorming and final product to me verbally. The student's poster, "The Tree of Integers" displays numbers in the correct order both below and above ground. They demonstrated their content understanding, as well as the literacy competencies of making connections, generating more ideas, and communicating their ideas clearly and accurately using pictorial and symbolic forms.





Teacher's Observations and Assessment

This student, who normally struggles with written output, was able to proficiently demonstrate their understanding of positive and negative integers. They were supported because of the multiple ways that understanding was developed and assessed, such as the partner discussion, idea sharing, visualization, and modeling.

During small group discussions, the student thought of several real-world scenarios and explained how each connected to what they knew about integers. They was able to create a unique 'integer story,' "Bad day for sailing", to represent positive and negative integers. The student was engaged in creating and communicating their understanding in a personalized way.

Teacher's Reflection

I certainly appreciated having this tool for planning, instruction, and assessment of learning. I think that students need to have a number of opportunities and learning experiences to help them progress. Making these connections helped students make meaning about integers and have experience in modelling and visualizing math concepts. Having informal conversations and observing students in their work helped me in my assessment and reporting because I could see where the student was proficient, especially in explaining their thinking, and could then prompt them further towards deeper understanding.