

# GRADE 2: ICEBERG MODEL IN A PYP CLASSROOM

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## LEARNING PLAN OVERVIEW

<b>Subject(s)</b>	<ul style="list-style-type: none"><li>• Social Sciences</li><li>• Humanities</li><li>• Design Thinking</li></ul>
<b>Grade Level (s)</b>	<ul style="list-style-type: none"><li>• Lower Primary (ages 6-7)</li><li>• Upper Primary (ages 8-11)</li></ul>
<b>Systems Tool(s)</b>	Systems Iceberg
<b>Purpose of Using Tool</b>	<ul style="list-style-type: none"><li>• Critical Thinking</li><li>• Action Planning</li><li>• Cause and Effect Relationship</li></ul>
<b>Summary</b>	Students became systems expert who want to improve how their school works. Students use the Iceberg model to design an action that makes other people's lives better at school.

## Learning Objectives

Student learning goals for this project using the Systems Iceberg model. Students will be able to use the Iceberg model to identify an undesirable event at school (problem) and create or modify a system that could help make a positive impact on the community and change people's values and beliefs surrounding the identified problem.

Other student learning goals and success criteria for the unit:

- Recognise and describe systems at home and at school.
- Identify a problem at school and develop a system that would help solve the identified problem.
- Identify the purpose of a system and how it impacts a community.
- Write the steps of a system starting from the beginning and using explicit instructions for success to the end.
- Write a 'How to Book' explaining a system

## Materials and Settings

- Poster board paper
- Art supplies
- A copy of the [Iceberg Model Worksheet](#) as an anchor chart as well as student copies
- We used this example ([Traffic Jam activity](#)) as a class to go over the Iceberg model again with students

- You may choose to show the [Slide Show: Tuning into Systems](#) slides 11-30 to access their prior knowledge about the Iceberg model
- Find the specific [Final Project Task Description and One-Point Rubric](#) that can be edited to meet the needs of each individual classroom

## Learning Context

In our previous unit, Grade 2 students had discussed how we can collaboratively contribute to our community. This line of inquiry was the thread between our last unit and our current one. The project described here was the culminating project for students related to systems thinking in our HWOO unit. They were exposed to the Iceberg model all throughout the unit and used it once again to synthesize their thinking and demonstrate their ability to change something at their school.

## Purpose of Using the Systems Thinking Tools

The Iceberg model effectively helps students identify a problem they can see and witness at school and understand how to go about redesigning a system that will change the desired outcome. It helps students dig deeper to not only focus on the obvious (what we see) rather target the values and beliefs at the root of the cause. It also allows for a lot of student agency.

## Learning Plan Step-by-step Description

### Activation Prior Knowledge

Students were familiar with the Iceberg model as we had introduced the various elements strategically, unpacking the different levels of this system's thinking tool. We had used several real-life examples to look at different desirable and undesirable events and patterns around us, such as trash in Phnom Penh, noise pollution, the food in our supermarkets, visiting the doctor, etc. Therefore, when we introduced the final project, students had multiple experiences using the Iceberg model to unpack a system.

### Class Discussion and Guided Example

Together as a class, to launch this project, we ran through a guided example using the problem of trash on campus. We revisited the [slideshow \(slides 11-30\)](#) that looked at littering in a park from the start of the unit that unpacked the identified problem using the Iceberg model. This helped guide students through the various planning stages of the project in order to come up with a thoughtful and effective solution to transform people's beliefs about littering. Together we brainstormed several ways to modify and/or redesign our trash system on campus.

### Independent Work

Afterwards, students collectively brainstormed various problems they see on campus and the undesirable patterns of behaviour they want to change. The list included respecting nature on campus, organizing our classroom library, designing alternative learning spaces for children, and using our hallways responsibly to name a few. Students were tasked with making a poster, video, song, or letter in order to show their thinking of how they were going to transform people's beliefs regarding their identified problem. They went ahead and used the [Iceberg Model Planning Worksheet](#) to think through their ideas. The format of their final project was open to accommodate multiple learning styles and approaches but needed to demonstrate their ability to use the Iceberg model in order to solve the identified "problem" and desired outcome.

### Opportunities to Differentiate Learning Experiences

- EAL had access to a lot of visual resources to reinforce the ideas we were discussing including the slideshows we used and the Iceberg model poster.
- Stronger students were paired with students who usually need more support to help engage them in the activity.
- During independent work, students had the freedom to choose the format which they felt most comfortable using in order to express their ideas.

### **Formative Assessment**

Throughout the unit, students were exposed to a variety of systems at school and looked at concrete examples of events on campus that become patterns of behaviour that represent a system that does or doesn't work properly. Class discussions focused on the "mental model" and the values and beliefs behind these systems. We used the Iceberg model collaboratively throughout the unit to guide our discussions and unpack the events that students brought to our attention. Events included: running in the hallways, shouting and playing in the bathrooms, turning off the lights when we leave the classroom, littering on campus, our classroom library system, and fire alarms. In the larger community, we looked at traffic in the city and running red lights and littering.

Students also identified the various systems at school and in their local community and sorted and organized them to determine the overall purpose of the system and how they impact our lives.

### **Summative Assessment**

Students will identify a problem at the school and find a way to improve the existing system or make a new system that would help solve the problem. They need to identify the undesirable event (problem), why this is a pattern of behaviors and the system in place that is flawed and needs modifying. They will then determine a solution to help fix the problem in order to arrive at a more desirable state (mental model). could be taken and how they will carry out their action. Students will put their problem, the "Event" through the Iceberg model to understand the desirable behaviour and the "Mental Model" being addressed.

**Student Task Description:** You are a systems expert who wants to improve how our school works. It's time to come up with an action that makes other people's lives better at school.

Students participated in creating the criteria for a [one-point rubric](#) It was then completed by each student on the front and the teacher on the back to reflect upon their earnings.

## **REFLECTION**

### **Plusses**

Overall students did a great job of understanding a system by identifying the different elements in the Iceberg model. This systems thinking framework helped students scaffold the idea of a system and break it into more tangible parts. Identifying an event and pattern came quickly to them by the end of the unit. At times it was still difficult for them to understand the overall system and all the working parts. In terms of the mental model, in Grade 2 we focused on the words beliefs and thoughts and linked them with the Learner Profile and Attitudes. For instance, we talked a lot about being principled and respectful when it came to following rules. We also talked a lot about safety and having fun as well when looking at the rules and systems in place at our school. We tried to use examples of systems that were most present in the lives of our students such as school rules, schedules, trash and recycling, traffic and transportation and goods/merchandise and the systems needed to provide them.

We did a school tour which helped students understand the various systems that we do not always see around us and we also took a field trip to a local restaurant Farm to Table to see their glass recycling system and some of the other systems at restaurants.

## Areas for Improvement

For this particular project in the future, between the class and guided activity and the independent work, I might have a small group session where they work in groups of 3 to 4 taking an event and putting through the Iceberg model together, before going off and doing it independently. I think centers with a different identified event would be helpful to incorporate into the unit before working independently. It would add one more element of a scaffolded activity boosting their knowledge and confidence and ability to use the Iceberg model. I noticed they needed a bit too much guidance when working independently, and a small group activity with images would help create more autonomy and familiarity before working solo.

I had my doubts that Grade 2 students would be able to understand this system thinking model, but I was amazed at how it helped them scaffold a more complex system into understandable parts.

## EVIDENCE

### Grade 2 Iceberg Model



