Sunshine and Time
EDCP 331 Project Plan

Sunshine and Time

Overview: Series of 3 lessons for Grade 2 – The Passage of Time (Sundials)

Class Description:

This series of three lessons was designed for a Grade 2 classroom, located in a prosperous residential community. The class is a diverse group of 22 students with a variety of abilities, interests and considerations. Specifically, the class has six students with designated learning challenges such as low reading and writing abilities, behaviour challenges and other learning difficulties. There are four English language learners who are all at different stages of language learning and one student with autism. Many students in the class are new immigrants or first-generation Canadians; which highlights the importance of clear communication by the teacher and sensitivity to cultural content.

Based on our short observation period it appears the group has great energy and confidence; and the students are very inclusive and supportive of one another. The overall attitude towards learning and classroom activities is positive and met with enthusiasm. The students have two regular classroom teachers, and therefore they embraced our presence with welcoming warmth. It was immediately evident that there is clear structure in the classroom and students are aware of teacher expectations. The majority of students spoke and acted respectfully to their peers and readily participated in classroom activities; including self-directed reading and calendar time. There are a few individual students with challenging behaviours who displayed some resistance to following directions and completing tasks, and one particular student who appeared to struggle with their ability to regulate emotions. While the abilities and interests of the students do vary, there was a common interest in the outdoors, physical activity and nature. Based on our observations we believe this group benefits from hands on, experiential activities that allow them to move and be active.

Rationale:

This series of three lessons focuses on using the sun to indicate the passing of time. These lessons will ask students to consider how the sun moves throughout the day, indicate the movement of the sun using cardinal directions, and use the sun as a tool to tell time with the support of a sundial. To support the ELL learners and struggling readers/writers, the

informational portion of these lessons have been minimized and streamlined to focus on relevant information only. Furthermore, the content is delivered using a variety of modes to benefit a greater number of learners, including visual, kinetic, oral and experiential methods. This is further supported by group discussion and open dialogue.

The first lesson introduces the sun and its importance to humanity both now and in the past. This particular story was chosen in order to introduce the students to a first nations perspective and establish the importance of the sun throughout the following lessons. The picture book has many vibrant images that support comprehension and decoding for ELL and developing readers, and is short enough to be used as a read a loud. A picture book was chosen, as opposed to a scientific text, to support the age group and streamline the lesson. Assessment in this lesson focused on formative assessment that targeted the student's ability to listen to the story and answer questions, participate in discussion and recall information for peers. It was also used as assessment *for* learning to gauge their level of knowledge about sun movement, passage of time and sundials, in order to frame the following lessons. After completing lesson 1, we learned that the students thoroughly enjoyed the outdoor component but were easily distracted by the environment; therefore it was imperative to keep them engaged with artifacts, movement and hands-on activities. With this in mind, I made the read-aloud much more animated and interactive for the second group in order to maintain their focus; and the discussion portion of the lesson involved a lot of movement. The "talking ball" proved to be very useful during this time.

The activities in lessons 2 and 3 have been specifically designed to allow students an opportunity to be outdoors and use nature to further their learning. The idea of using an artifact exists in the form of a sundial which students have the opportunity to individually construct and test for deeper learning. Assessment in the second lesson focused on the student's ability to use scissors safely and effectively to construct the sundial, while also following folding and gluing instructions. Formative assessment was also happening during this period to reinforce what students know about sundials based on previous knowledge and the video.

The final lesson was very fluid and allowed the student an opportunity to take charge of their learning by selecting places to test their sundial and explore various uses for them. As a teacher, it was wonderful to see students getting excited about the topic and coming to new conclusions or realizations without direct teaching. The biggest highlight of the day happened when the lesson was unexpectedly interrupted by an earthquake drill and students had to line up

in a designated area. While we were waiting for the drill proceedings to finish, a few students found some small sticks and stuck them in the gravel ground like a gnomon; they then drew a circle around their stick and excitedly exclaimed, "look it's a sundial!" Before I knew it there were about 5 sundials all around us and students excitedly marked and watched the little shadow, predicting where it would be after school. This was a beautiful moment for me because I saw learning happening outside of the structured classroom and being lead by the students themselves.

Objectives:

Students will be able to:

- Listen to a read aloud of *How Raven Stole the Sun* by Maria Williams and display comprehension by making predictions, answering teacher questions and recalling information with peers [A8].
- Explain that the sun and moon are indicators of day and night [B1].
- Effectively use scissors, glue and folding skills to create a sundial [B4]
- Determine the time of day using a working sundial [B1]

B.C Grade 2 Curriculum Package (2010)
Language Arts (Oral Language)
[A8] engage in speaking and listening activities to develop a deeper understanding of texts (e.g. listening to the telling of a story from an oral tradition, listening to information text from science or social studies).

Social Studies – Identity, Society and Culture
[B1] identify changes that occur in the school and community throughout the year.

Visual Art – Skills and Strategies
[B4] demonstrate safe and environmentally responsible use of materials, technologies, and processes.

Strategies:

The strategies used to achieve learning in these three lessons were; group activities and exploration, group discussion with guiding questions, use of artifacts in the form of a sundial and enacted learning by going outdoors and using the sundial for a specific purpose. The overall strategy was changed after the first lesson when we realized this particular group worked best when engaged in hands on activities and were allowed to move freely. Learning in the final

lesson was consolidated in the form of a game where students where able to run to a designated area as they imitated the movement of the sun.

Assessment Criteria:

Throughout the three lessons the teacher will conduct a series of formative assessments *for* and *of* learning. The students will demonstrate their learning through group discussion, questioning periods and movement games. Specific criteria for assessment are specified within each lesson plan.

References and Resource Critique:

Curriculum Documents: Ministry of Education. *B.C Grade 2 Curriculum Package*. 2010
https://www.bced.gov.bc.ca/irp/curric_grade_packages/gr2curric_req.pdf

This Ministry of Education document outlines the curriculum expectations and prescribed learning outcomes for Grade 2. It is available online. Caution – PLOs can be very specific but teacher must be flexible during enactivism. Strength – the document provides clear goals for teachers.

Picture Book: Williams, Maria and Felix Vigil. *How Raven Stole the Sun*, New York: Abbeville, 2001. Print.

This is a children's picture book sharing a Tlingit creation story about the sun, moon and stars. Cautions – students may have questions about the story in relation to their personal beliefs or scientific understandings. This book is available in many libraries. Strengths - this is a great and engaging story with beautiful visuals. The story follows a pattern and offers opportunities for prediction and discussion. The author is a Tlingit woman, and the book allows an opportunity to introduce Aboriginal content.

Video: "Young Explorers: A brief history of telling time" by The British Museum
https://www.youtube.com/watch?v=ggvRga_JqXw

This short video from The British Museum and explores a brief history time telling devices. For the purposes of these lessons the focus is on sundials during the first 1 minute 50 seconds. This video is available online via Youtube. Caution –it is a Youtube video so it must be

previewed and attention must be paid to unwanted ads or comments on the main webpage. The speaker also has an accent which may prove challenging for some ELL learners. Strengths –it is the best age appropriate video found on Youtube thus far and highlights the key points without being to long or confusing.

Website: Sky & Telescope – How to make a Sundial
http://www.skyandtelescope.com/observing/how-to-make-a-sundial/

This website provides an easy to use template for creating a sundial at home and how to use it. This resource is available for free online. Caution – the correct hemisphere template must be used and attention must be paid to the latitude folds. The folding also requires more developed motor skills so students will need a demonstration and teacher must be available for physical support. Strengths – the template requires little cutting and folding and the finished sundial is quite accurate even with some minor construction flaws.

Lessons:

Lesson #1 - How Raven Stole the Sun
Grade Level: 2 **Activity Theme:** Passage of Time **Time:** 45 minutes
Curriculum Expectation(s) & Resources: Grade 2 – B.C Curriculum Package (2010) http://www.bced.gov.bc.ca/irp/curric_grade_packages/gr2curric_req.pdf PLO – Language Arts (Oral Language) [A8] engage in speaking and listening activities to develop a deeper understanding of texts (e.g. listening to the telling of a story from an oral tradition, listening to information text from science or social studies) PLO Social Studies – Identity, Society and Culture [B1] identify changes that occur in the school and community throughout the year
Lesson Objectives: SWBAT listen to a read aloud of *How Raven Stole the Sun* by Maria Williams and display comprehension by making predictions, answering teacher questions and recalling information with peers [A8]. SWBAT explain that the sun and moon are indicators of day and night [B1]. **Essential Questions:** What can nature teach us about the passing of time?

<table>
<tr><td colspan="3">Why are the sun, moon and stars important to the people in this story?</td></tr>
<tr><td colspan="2">How I Will Teach This</td><td>Assessment</td></tr>
<tr><td>Materials:
• Picture book: How Raven Stole the Sun by Maria Williams
• Sun (talking ball) + box
• Exit slips, clip boards and pencils
• Tarp</td><td>Transition (5 minutes)
-Teacher will transition group outside to the paved area (if it is raining students can remain indoors)
- Teacher will ensure students have appropriate outdoor wear and will bring a tarp to sit on

Hook: (3 minutes)
Ask students what the date is. How do you know?
Ask students; do you know when a day begins and ends? How?</td><td rowspan="2">Formative Assessment

During the read aloud the teacher will ask a series of questions. Students who meet the learning objectives will:
- identify the sun and moon as indicators for telling if it is day or night
- identify the importance of Raven giving the sun and moon to the people
-Be able to re-tell the story in their own words.

During the discussion students who meet the learning objectives will:
-identify the sun as a moving object
-be able to explain that the sun sits low at sunrise/sunset and high in the sky in the afternoon
-explain that there is no sun at night
(student may do some or all of these)

Exit Slip – The exit slip will be used as assessment for learning to indicate whether or not the</td></tr>
<tr><td colspan="2">Lesson Overview: (30 minutes)

How Raven Stole the Sun read-aloud
- Teacher and students will find a comfortable place to sit in a circle
- Before the lesson begins the teacher will lead a sharing circle activity where students state their name and something they like to do on a sunny day
Pre-Reading:
- Before reading the teacher will explain to students that we are about to read a creation story. Explain that this particular story is a first nations story and is being shared with us from Maria Williams a Tlingit (KLINK-it) author.
-Teacher will begin by showing students the book, How Raven Stole the Sun by Maria Williams.
-Ask students what do you think this book is about?
-Before the story starts ask students to close their eyes and take a moment to imagine there is no sun in the sky and no moon at night…this is where our story begins.
-Teacher will read the story, stopping throughout to ask questions about what is happening to check for understanding and comprehension, and to ask for predictions.

After-reading
-After the story is over the teacher will produce a box. Ask students what they think might be inside? (students can infer based on their understanding of the story)
-Open the box (inside is yellow talking ball which represents the sun; the students have been using a talking ball throughout the year so they</td></tr>
</table>

will be familiar with how it works) To avoid distractions during discussion give the students a few seconds to pass the ball around and inspect it. -Open a discussion about the sun, using the talking ball to maintain a respectful sharing space 1. Start by turning to a partner and re-tell the story in your own words. Can your partner add any details? 2. Why do you think Raven stole the Sun, Moon and Stars? 3. Ask students why they think it is important to have a sun, moon and stars? (Target: it gives us light, days and night) 4. How can the sun help us tell time? (Target: it moves, rises and sets) How do you know? (Formative assessment to see what students know about the movement of the sun) 5. What does the sun look like in the morning, afternoon and evening? Where does it sit in the sky? -Teacher will use this opportunity to explain that the sun rises in the east and sets in the west (students have been studying cardinal directions and should be able to indicate where east and west are) -Teacher will have students stand up and stretch their arms out to the east and west or act like the sun and travel across the sky. -End the lesson by asking students to tell the teacher what they learned today. **Exit Slip (5 minutes if time allows)** Why is it important to have the sun and moon? *Written response*	students understand that the sun can be used to tell the passing of time. For next lesson: Assessment for Learning -Throughout the lesson teacher will be listening to responses to see how much students know about how the sun and moon help us tell time, or other ways we tell time in nature. This will help inform the next lesson on sundials.

Lesson #2 - Making a Sundial
Grade Level: 2 **Activity Theme:** Passage of Time **Time:** 45 minutes
Curriculum Expectation(s) & Resources: Grade 2 – B.C Curriculum Package (2010) http://www.bced.gov.bc.ca/irp/curric_grade_packages/gr2curric_req.pdf Visual Art – Skills and Strategies [B4] demonstrate safe and environmentally responsible use of materials, technologies, and processes Video: "Young Explorers: A brief history of time telling" https://www.youtube.com/watch?v=ggvRga_JqXw Sundial template:

http://www.skyandtelescope.com/observing/how-to-make-a-sundial/

Lesson Objectives:
SWBAT effectively use scissors, glue and folding skills to create a working sundial [B4]

Essential Questions:
Why do you think people of history used the sun and sundials to tell time?
How could you make a sundial with natural materials?

How I Will Teach This		Assessment
Materials: • Cardboard base (pre-cut) • Sundial templates • Scissors • Markers • Stickers (optional) • Straws or pencils	**Introduction/Hook:** **(3 minutes)** Show students a short video about sundials. "Young Explorers: Brief history of time telling" (stop after 1:50 sec)	Formative Assessment Teacher will observe students during the creation process and check for safe use of materials such as scissors. Successful completion of the task will result in a working sundial (resembling the teacher example) that is folded along the 50 latitude line, has a straw or pencil gnomon and is securely fastened to the base. Teacher will observe the students ability to follow directions and use materials effectively.

Lesson Overview:
What is a Sundial? (5 minutes)
-After showing students a short video on sundials teacher will reintroduce the sun talking ball from the previous class
-Using the talking ball the teacher will ask questions about the video
How does the sundial work? How do you read it?
When would a sundial not work?
Where should the sundial be pointing?
Who can remind me which direction the sun rises from?
Students will check their thinking in the next lesson

Making a Sundial (35 minutes)
-Teacher will tell students we are going to make our own sundials
-Teacher will show demo of a finished sundial. Using a flashlight demonstrate how it works.
-Teacher will give each student a cardboard base and a template
-Teacher will direct students to cut out, fold and glue their template to the base providing assistance where necessary
-Students can insert a straw or pencil for the gnomon
- Allow the students time to personalize their sundials using stickers, markers and crayons. Ensure each student put their name in big letters.
-Clean up and store sundials

Lesson #3 – Using a Sundial

Grade Level: 2
Activity Theme: Telling time using nature
Time: 45 minutes

Curriculum Expectation(s) & Resources:
Grade 2 – B.C Curriculum Package (2010)
http://www.bced.gov.bc.ca/irp/curric_grade_packages/gr2curric_req.pdf
PLO – Identity, Society and Culture
[B1] identify changes that occur in the school and community throughout the year

How to use the sundial template:
http://www.skyandtelescope.com/observing/how-to-make-a-sundial/

Lesson Objectives:
SWBAT determine the time of day using the sundial [B1].

How I Will Teach This		Assessment
Materials: • Sundials • Sunny outdoor space	**Introduction/Hook:** (5 minutes) Tell students we are going to test the sundials! (transition outside)	Formative Assessment Teacher will watch students interact with their sundial. A student will display understanding if they point the gnomon North and if they can accurately read the sundial. Students will also display understanding by answering teacher questions about what they are doing and why, or why the sundial does not work in a shady area etc. If students can confidently play the movement of the sun game understanding will be demonstrated.
Lesson Overview: -Gather students together. Briefly ask them to look around the yard and decide what the best place would be to test the sundials. Why do they think this is the best place? (target: the sunniest place) -Transition to the desired area. Ask students if they can remember from the video which direction the sundial should be pointing? (target: North) *Students should be able to accurately point to north based on their previous lessons with cardinal direction.* -Arrange the sundials and see if they work. Ask students to check and see where the shadow is pointing, confirm time with a watch -Tell students we are going to be scientists and do an experiment. Let's test our sundials in different places and see if it still works. (target: look for shady areas) -Teacher will have a flashlight available for students to experiment by mimicking the suns movement **Movement of the Sun Game:** -Assign two points in the yard (two walls or trees etc.) to be east and west -Students are the sun, teacher will call out a time of day eg: morning, noon, evening (Take turns letting students call out directions) -Students must run to the appropriate area based on where the sun would be at that time of day (eg: morning = east, evening = west, noon is in the middle)		