A Lesson Plan PJ Teacher: **Media Wilkinson**
Date: __**March 3, 2022**_____ Grade: **3**

Strand: _C. Coding_/ A. SEL_____

Expectations:

- **C3. Coding:** Solve problems and create computational representations of mathematical situations using coding concepts and skills

- **C3.1:** Solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves sequential, concurrent, and repeating event

- **A3. SEL Skills:** Maintain positive motivation and perseverance

- **Mathematical Processes:** *reflecting:* demonstrate that as they solve problems, they are pausing, looking back, and monitoring their thinking to help clarify their understanding (e.g., by comparing and adjusting strategies used, by explaining why they think their results are reasonable, by recording their thinking in a math journal)

Cross-Curriculum:

Visual Art:

- **D1.1:** create two- and three-dimensional works of art that express personal feelings and ideas inspired by the environment or that have the community as their subject

Learning Goals (*student-friendly language that can be shared with students):*

- I will make a two-dimensional pictorial story of my feelings or ideas on the environment around me or on issues I see in my community.
- I will create a story where the events follow in a clear order.
- I will use Scratch Jr. to write code to tell my story.
- I will move characters in my story on Scratch Jr. by repeating some of the movements over and over again.
- I will think positively while working and keep trying my best.
- I will pause, look back, and reflect on my thinking when working on different tasks.

Materials and/or Resources:

- Comic strip paper (2 per student)
- Pencils
- Colouring pencils
- iPads
- Scratch Jr.
- Smartboard

Note:

- In this lesson we are incorporating art with coding. There is not a specific mathematical concept to cover, it is a lesson to allow students to get more familiar with coding in Scratch Jr. while tapping into their artistic and creative side.
- As such the CRA model will be applied a little differently here. The application of it will be more related to the connection of visual art and coding.
- This is NOT an intro lesson. Students already have some background knowledge with comic strips and Scratch Jr. This lesson is a mere connection between the two.
- For this lesson you might want to consider having an art and math class be back to back so students can spend as much time as they need to complete the tasks. Or you might split the lesson into one art lesson, then two lessons for students to transfer their art into Scratch Jr./code.

Concrete:

Minds on:

- Discuss as a class, what are some issues we see in our community that we have strong feelings or ideas about? (eg. recycling, littering, pollution …)
- What feelings and ideas do you have about these issues?

- What are some things we see in nature (in the environment around us)? (eg. insects, plants, stars, animals…)
- How does seeing these things in the environment make you feel?

Working on it:

- Inform students that this lesson has multiple tasks and our end goal is to create an animated comic strip on Scratch Jr.

- Comic Strip:
  - Hand out the comic strip paper (contains 4 panels)
  - Ask students to pick a community issue or something they see in nature and to use the 4 panel to draw a story about the activity or thing in nature.
  - The story needs to express how this community issue or thing in nature makes them feel or what ideas they have about them.
- Story:
  - Needs to consists on 4 panels (comic strip)
  - At least 2 characters in the story {could be humans, animals, plants, recycling bins, etc.}
  - In some of the panels the characters should have speech bubbles or something to help the reader understand what is going on.

- Students can do the task sitting with a group or with one other student; however, students are working on their own story/comic strip.

❖ Provide students with time to complete this task. The *minds on* and *working on it* tasks above can take a full 60 minute period. This is covering the art component of the lesson.

Questions that you might ask as the students work:

- What are some issues you see in your community?
- What are some things you see outside when you are on recess, when you go to the park, or when you play outside?
- What is your pictorial story on?
- Who are the characters?
- What are they going to do in your story?
- Why are they doing this in your story?
- What will you have the characters say to explain what they are doing?
- Where are your characters in your story? Do they change settings in different panels?

Representation:

In this phase students will be asked to move the characters within each panel in the comic strip, by drawing arrows on the blank comic strip handout to represent the movement of the characters.

- Provide students with the second comic strip handout.
- Tell students "Imagine that your characters in each comic panel can move, how would you move them? What would you have them do?"
- Discuss the questions as a group.
- Tell students in the blank comic strip handout they need to draw arrows in each panel that shows how their characters will move in each individual panel. They can use different coloured pencils to identify which character they are moving and how they are moving them.

- The characters' movements don't have to be drastic, they can be simple moves.

- Demonstrate this by drawing a quick sketch of a panel with a character, ask students how should the character move and then draw a blank panel with arrows to demonstrate how the character will move in that panel.

- Ask students to pair up, but still work on their own comic strip. However, they have a partner for support if they need it.

- Ask students to look at the pictorial story they drew and use the new blank comic strip handout to outline how their characters are going to move in each panel using arrows.

Questions that you might ask as the students work:

- Which character are you planning to move?
- Where do you want your character to move to in this panel?
- Using arrows, how can you show me their path?
- Why do you want to move your character that way?
- Is moving your character changing your story?
- Is moving your character making your story more fun or more detailed?
- Ask questions specific to the pictures drawn by students. Eg. Can you make your character stand on the rock? How can you use arrows to show me their path onto the rock? Can you make your character stand under the tree? What would be the path that they would take?

Abstract:

In this phase students will get the iPads to transfer their comic strip and the movements of the characters into an animated story on Scratch Jr.

Activity:

- Students need to transfer their pictorial story and the character movements onto Scratch Jr.
- Provide students with iPads
- Inform students that now that they have a pictorial story and have an idea of how they want their characters to move in each comic panel they can transfer their ideas onto Scratch Jr. using the block codes
- Have Scratch Jr. displayed on the Smartboard so all the students can see and ask students:
    - "How can we create different panels on Scratch to create a comic strip?" (The plus on the right allows us to create a new panel)
    - "Which code block helps us move between panels?" (Under the red block codes there is a block code that allows us to move between panels)

- Ask students to pair up if they want to. As a pair students can either work on their own pictorial story or they can pick one of the pictorial stories between the pair and work on it together on Scratch Jr.

- This provides students with the option to work by themselves on their story; to work on their own story and have a partner working beside them on their individual story; or students can work with a partner to create one of the stories on Scratch Jr.

- In this phase the focus is on the code. By transferring the information that the students already have planned out, by drawing their story and outlining their characters' paths, they can now focus on exploring Scratch Jr. further and on transferring what they want their end goal to be by using block code.

Questions that you might ask as the students work:

- Which background are you going to pick to reflect what you drew for your story?
- Which block codes are you going to use to move your characters?
- How are you going to insert the speech bubbles for your characters?
- What do you need to include at the beginning to help your code run?
- Which block code do you think you need to move to the next panel?
- What can you do to add more detail to your story?

❖ Provide students with enough time to complete the representation task and the abstract task. This could be one 90 minute lesson or two 60 minute lessons. Depending on the students' needs.

DI AND ACCOMMODATIONS:

- During the drawing task of the comic strip, you can have students work in pairs. Great conversations come up when students sit together as they work on their art tasks.

- Students in the Scratch Jr. phase can be paired up by the teacher if the teacher wants to pair up different but complementary skill sets together, i.e. students who are more art-focused, students that are more code-focused.

- If any of the students are newcomers to Canada then they can write their story on a community issue or things they see in nature of the country they are more familiar with. This would be a great opportunity for the class to learn about other cultures/communities/countries.

- If any of the students are ELL learners then they can use Google Translate to assist in writing a sentence for the speech bubbles. As well, on Scratch Jr. students can record their voice instead of writing a speech bubble if they feel more comfortable doing that.

- Having students complete this activity in different tasks provides students with the ability to focus on each task individually then connect everything at the end. In the first task students are focusing on the drawing, creating, and storytelling aspect; in the second task students are focused on how they can move a character within a panel using arrows, they are focused on the motion; in the third task students are focused on the coding aspects, now that they have everything planned out they can focus on exploring Scratch Jr. further and making their comic strip animated.

CONSOLIDATION/REFLECT AND CONNECT:

FORMAT FOR SHARING:

- Whole group sharing and discussion
- Open the floor for anyone that would like to share their animated comic strip. However, have a few animated comic strips in mind in case no one volunteers to share.
- Ask students to show what they started with {comic strip drawing}, the representations of characters moving, then the animated comic strip on Scratch Jr.
- As students are sharing their work, ask the class the following questions:
    - From looking at the first panel, does anyone have any predictions as to what the story is about? {Ask this before running the code}
    - Did the events in the story follow in a clear order? What happened first? What happened next? What happened last?
    - Did any of the characters move in the same direction repeatedly?
        - How did we make the characters move in the same direction over and over again?
        - Is there a more efficient way to make our code do these repeated events?
    - What was a glow in the story? What did you really like in this story?

INDEPENDENT PRACTICE:

Journal:
Students will be asked to answer the following question in their reflection journal

1. How are all the tasks we did connected?
    - drawing the comic strip
    - modelling paths of how the characters are going to move
    - making an animated comic strip on Scratch Jr.

2. Looking back on all the steps or tasks we did before starting to work in Scratch Jr., how did you feel about working on your animated comic strip in steps/different tasks?
    a. Was it helpful? Explain your thinking.
    b. OR would you have preferred to just work on Scratch Jr. right from the beginning? Explain your thinking.

Teacher can explain the questions before asking the students to reflect. For this lesson we worked on our story first by drawing it by hand on our comic strip handout, we then used another comic strip handout to represent or outline the movements of our characters, and then finally we went on Scratch Jr., put everything together, and created animated comic strips.

- How are all these steps connected?
- Was it helpful to work through all the steps? Or would you have preferred to work on Scratch Jr. right from the get go? Explain why or why not.

Single Point Rubric:

Below Target (Areas for improvement)	**Target (L3)**	**Above Target** (Evidence of exceeding criteria)
	I can create a pictorial story of my feelings or ideas on the environment around me or on issues I see in my community.	
	I can create a story where the events follow in a clear order.	
	I can create a comic strip for my story with 4 panels, 2 characters, and some speech bubbles.	
	I can represent how my characters will move in a panel using arrows.	
	I can use block code on Scratch Jr. to create an animated comic of my story.	
	I can think positively while working and keep trying my best.	
	I can pause, look back, and reflect on my thinking when working on a task.	