Blended Learning Lesson Builder

Teacher:	Kathleen Mazurek
Date of Lesson:	February 6, 2023-February 10,2023
Grade Level:	Middle/High School
Time:	10:05am-10:55am, 10:55am-11:45am, 12:35 pm-1:25pm, 1:25pm-2:15pm
Subject Area:	Art and Computer Science
Lesson objective(s):	Students will use sequencing, color, shape, and patterns to solve the wolf and sheep river crossing challenge with Code and Go Mice–our gifts from Code in the Schools and MSDE Maryland Codes for the Elementary Experiences Program!
Content Standards:	**MSDE Fine Art Standards:** **Organize and develop:** **E:3-5:1:** Through guided practice, experiment and develop skills in multiple art-making methods to demonstrate quality craftsmanship. **A2E:3-5:2:** Identify, describe and visually represent places and/or objects that are personally meaningful. **A2E:3-5:3:** Manage projects through the use of sketchbooks/ journals. **I:P-2:1:** Think creatively about self, others, places, and events. **Creating I:6-8:2:** Create collaborative meaningful compositions **Creating I:9-12:2:** Utilize media at hand to experiment with process and skills exploring a broad range of ideas. **Computer Science Teachers of America Standards** **1A-CS-01 K-2** **Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.** **(MSDE standards are aligned with National Art Standards)**
Essential Questions:	- How do code patterns help us solve problems? - How does decomposition help us break down code patterns? - How does art tell stories in game design? - How does code tell a story like writing does? - How can abstract pictures and portraits both tell stories in different ways? - What do we want to remember the most about our family? - How can art help us celebrate what makes families different?
Description of Core Activity to Achieve Lesson Content	Exemplar Link
Vocabulary	decomposition-breaking things down sequencing-putting things in order

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	map-something that shows you where to go, following steps code patterns-sequence of commands that run a program program-code ran through a machine (video game or robotic path) features-different parts of our face 3D forms-shapes with shine and shadow to show weight 2D shapes-made from different connecting lines collage-making artwork with layers of photos, drawings, sounds that can be digital or with paper and glue color-a part of a rainbow spectrum symbol-a picture that means a word pattern-repeating shapes, colors, and lines
Materials	iPads craft paper with maze path drawn on in sharpie Code and Go Mice and their code cards artbooks
Text/Web/Museum References:	Linda Liukas "Hello Ruby: Adventures in Coding" The PRIMM Model of Computer Science Education
HOOK / ENGAGEMENT / INTRODUCTION ● Describe how you will initially engage students in the content	Students will take turns building an Opening Ritual song with different instruments in Garage Band on their tablets. Students also have the option to dance along if they prefer. During this time, we'll also do an emotional check in to see where students are so the choices can be calibrated to their energy level. **ELE/ELEM students will warm up their hands with either Sphero Indi, Magna blocks, or books after transitioning from lunch and at the end of the day.
EXPLORE / INVESTIGATE / CREATE ● Describe what hands-on/minds-on activities students will be doing. ● List "big idea" conceptual questions the teacher will use to encourage and/or focus students' on the content	Schedule: 1. Warm up (5 minutes) 2. Gameplan (whole group) (10 minutes) 3. Studio time (small group) (15 to work, 5 to clean up) 4. Gallery Walk (critique and assessment) (10 minutes) 5. Optimistic Closure: choice time (5 minutes) To get the party started, we'll need all of us to work together to make it happen! Let's assign student jobs. Who wants to pick first? ● Timekeeper (checks timer on board when we are working) ● TA (helps emphasize words for the day cards) ● Tech Support (helps friends get back to their tab in Safari) ● Supply Captain (helps hand out supplies) ● Clean Up Captain (helps wipe down tables with water) We received a donation from Code in the Schools and the Maryland Codes to teach Elementary Level Programming! We'll be reading sections from Ruby and exploring coding with Code and Go Mice! Last week, we programmed it to make it move through an obstacle course. First, we'll review how to use Code and Go Mouse again, then we'll break into small groups to guess the code pattern we'll cross a river to escape a wolf! This Wolf and Sheep challenge is an old story used to teach why patterns and sequencing help us solve problems. What patterns do we follow every day? Do we follow a meal pattern? Do we eat all day? (Y/N) Do we follow a lunch schedule? (Y/N) Do we follow a pattern when we go to the school store? Do we follow a pattern when we find videos on YouTube to dance? Just like drawing, you code by breaking things down into steps. We are going to plan an escape route from a Wolf to cross a river. We will break into two teams and see if we pick the same pattern or a different pattern.

Look at the two spots and we'll break the sequence down.
What direction will they need to go in to get their package–right or left?
Put on the arrow that matches on our code sentence strip.
Each student will put on an arrow and then pass it to a friend to finish the algorithm.
We'll work on this for 10 minutes and then do a code run test for our Show and Tell!
Each group will have a different path. If we finish early, we'll trade paths.

We'll both try to solve the same one and see if we use the same code pattern.
Why are we learning robotics this when we are the video game club?
Screenless coding toys teach us to look for the same thing on the computer.
We use block based programs like Scratch, Tynker, and Code.org to make quick animated cards, games, and music videos in the past. Let's look at a Scratch's text editor and Code and Go Mouse side by side. Do they use the same colors? Do they use the same shapes? (arrows) They use the same colors in shapes so you can translate one skill to another skill. We will do the same thing with Sphero Indi after you finish making Code and Go Mouse go through your arcade.

Work together with your team to break down the maze into steps with decomposition.
How will we do that? Each team member will guess two code blocks at a time until they finis the puzzle.

Review:
Code and Go mice follow the same core board words to make code patterns:
go, up, down, turn left, turn right

1. Turn on mouse.
2. Pick the code cards first to plan your code pattern.
3. Press the buttons that match (one at a time).
4. Put the mouse down, point it in the direction you want it to go and press the green button to run your code. Many students have been using their thumb to navigate the keys.
5. Press the yellow button to clear your code and write something new!

<u>Small Group Exploring</u>

 We'll break into small groups to see who can find out how to turn on our mouse and how to use the cards to make it go, stop, and turn. Use your core boards as a reference to find the same symbols. We'll all take turns putting on code cards to make our group code pattern. Put on a code card, press a button, then pass it to a friend in your group so we all have a turn.

Once you learn how to make it get to the other side of the river to escape the wolf, raise your hand!

Once your team finishes level one, you can go get moustraps and tubes to practice aiming your mouse. From here, we will start building a live action video game next week with interactive levels in the classroom.

REFLECT / EVALUATE	Time for our Gallery Walk!
● How will students demonstrate that they have achieved the lesson objective? ● This should be embedded throughout the lesson as well as at the end of the lesson.	**Let's read our Gallery Story!** **Clean up captains, make sure your tables are ready.** **Pick a friend to celebrate! Show us your code! Run your code and then we'll watch our friends in team B run their code to see if you used the same code pattern or something different.** **What directions make our code different. Look and see.** **Did you like this? Which robot do you like more?**

	How do they both run the same program different ways? Point to their buttons. After we screen the video, teacher will pull up a quiz slide on Google Slides and Pear Deck. Students will be able to follow along with the slides on the projector on their tablets using Peardeck and Nearpod. What did you make? (code pattern or painting) Why did we code today? (make food, plan an escape) What medium did you use? (code, 3D forms) What skill did you use to code today? (decomposition, painting) For our Optimistic Closure, we'll read our break story "Take Five" and pick which break station works best for us to help us relax since we finished our work! It's a book adapted from curriculum found by our OT Cierra Thames that we collaborated on last year.
Accomodations and Modifications: **Differentiation strategies to meet diverse learner needs:** ●	Student Response Options: -verbal -pointing to Core board or AAC device -pointing -eye gaze -vocalization -clapping -nodding -facial expressions -draw/point -thumbs up/thumbs down Artmaking Modality Options: Students will have both digital and hands on collage making materials at all times. Students who communicate with eye gaze can make choices from choice slides, chunked to a field of two options. Students will have options to take sensory breaks either in the break area or from the break bin in their desk area. A timer will be set. "Finished" bins will be placed on each table so students can track their work and clean up. Additional Accomodation and Modifications: redirect student, small group, reduced distractions and visual field, annotation of choices, extended time, human reader, human scribe, allow use for manipulatives (Jamboard and hands on), check for understanding, picture schedule, provide alternative ways for student to demonstrate learning, low tech communication supports, timing and schedule, visual cues, human reader and scribe, reduce distractions to self, partner assisted scanning, unique presentation accommodations (audio choices and high contrast content), extended time, unique scheduling accommodations, picture schedule, repetition of directions, high contrast materials, items presented in close proximity, verbal prompts, materials with audio components, materials with sensory components, repetition of instruction, sensory guided questions, extended time, directions read aloud and clarified as needed, human reader and signer, unique presentation accommodations, human scribe, extended time, unique scheduling accommodations, repetition of instructions, extended response time, fading prompts, sensory activities, use of low communication support, use of paraphrase or simple instructions, verbal prompts, adapted equipment, modified content, reduce number of answer choices, encourage student to ask for help when needed, strategies to initiate and sustain attention, reinforce positive behavior through verbal/non-verbal communication, multiple and frequent timed breaks

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Blended Learning Model ●	Station Rotation (example from blendedlearning.org)
Technology Resources ●	**Incredibox** **Canva** **Tinkercad** **Figma** **Google Site for Art Class** **Garage Band**