Teacher's Name: Ticey Little

Domain: Exploring Computer Science

Date Range: March 10, 2025 – March 14, 2025

ACOS Standard:

4 - Use and adapt classic algorithms to solve computational problems.
5 - Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using current events.

Student Friendly Outcome:

Unit 3: Programming

I CAN name the basic terms used in Scratch.
I CAN create the beginning of a simple program in Scratch.
I CAN build upon previous units to explore the concept of identity through personalized projects.
I CAN demonstrate how programming can be used to express and explore cultural and personal identity.
I CAN revise name projects responding to comments & feedback (Iterative process of programming.
I CAN learn different blocks to move characters in Scratch.
I CAN write a program that responds to user-created events from the mouse and keyboard.

Monday	Tuesday	Wednesday	Thursday	Friday
Journal entry. (5 min) Participate in discussion of journal entry.(10 min) Participate in role play. (20 min) Revisit storyboard for Create Your Celebration Animation (10 min) Rewrite the storyboard with broadcast (10 min)	Review of proposed revisions (5 min) Modify the Create Your Celebration Animation (35 min) Discuss / reflect on the programs (15 min)	Prep for the project:(15 min) Discussion bias and stereotypes related to clothing choices and how students are influenced by it. (20 min) Journal entry (10 min) Discussion of project (10 min)	Introduce the blocks needed to complete the project (10 min) Worktime on the project (30 min) Reflect on the project (15 min)	Journal entry. (15 min) Participate in discussion of conditions. (15 min) Review Age sample solution & plan your program (25 min)

Instructional Lesson # 5. Days 12-13

Topic Description: Students will incorporate Broadcast events, listen to and respond to events and change backgrounds of the stage to reflect new scenes in their Create Your Celebration Animation program from the previous lesson**.**

Objectives:

The student will be able to:

- Continue to explore identity & community issues and reflect them in programs they create.
- Understand the concept of broadcast events, listen to and respond to events they create and change the background of the stage to reflect new scenes.
- Incorporate broadcasting in their Create Your Celebration Animation program from the previous lesson (Reinforce the software iterative cycle).

Outline of the Lesson:

Segment	Reason/Purpose
Day 1 Journal entry. (5 min) Participate in discussion of journal entry.(10 min) Participate in role play. (20) Revisit storyboard for Create Your Celebration Animation (10) Rewrite the storyboard with broadcast (10 min)	Journal entry allows the students to explore the meaning of broadcasting in the context of media: radio & TV Students understand that even though a lot of things are being broadcast, not everyone is listening to everything that is being broadcast. Playing out the roles deepens students' understanding on the use of broadcasting in controlling the flow of a complicated play that has multiple roles and guarantees the smooth progression of the play.
Day 2 Review of proposed revisions (5) Modify the Create Your Celebration Animation (35 min) Discuss / reflect on the programs (15 min)	Students apply their new understanding of the role of broadcast blocks to previously created Create Your Celebration Animation

Student Activities

- Complete journal entry.
- Participate in discussion of journal entry.
- Participate in role play.
- Revisit your storyboard for Create Your Celebration Animation.
- Rewrite the storyboard with broadcast

Day 2

- Review proposed revisions.
- Modify the Create Your Celebration Animation
- Discuss/reflect on the program

Teaching/Learning Strategies:

Day 1

- Journal Entry**:** *What does it mean to broadcast something (for example, the radio station is broadcasting music right now)? If a radio or television station is broadcasting something, does that mean that everyone is listening to it?*
- Participate in discussion of journal entry.
    - Have a few students share their responses. Ask students for examples of current broadcasting, do they use a different word (streaming, for example), and how broadcasting is used in their community to announce events and celebrations.
- Participate in role play**. (**Script for role play is at the end of the lesson in the resources section)
    - Solicit Volunteers to be the various characters.
    - Give the performers a paper with ONLY their part. See Scratch Broadcast Role Play.
    - Scratch Broadcast Role Play Interwoven.
    - The students can think of it as a three act play where the scenes change. The difference: There are no curtains so they will see everything change.
    - The teacher will be the director and will make sure everything and everyone is in place during each scene. The teacher can call out “action” before the scene starts to signify that everything checks out.
    - Each performer’s paper is broken into scripts for the various scenes.
    - One performer will be in charge of setting the stage. They can do this by erasing and drawing pictures on the whiteboard behind the stage.
    - Emma ends scene 1 with a broadcast, telling the teacher/director it is time to change to scene 2 & start the script for scene 2. Sarah ends scene 2 with a broadcast, telling the teacher/director it is time to change to scene 3 and start the script of scene 3.
    - You might want to have different students perform the role play a second time. This time the teacher will only yell out when the green flag is clicked. The students can check themselves to make sure that everything is okay.
        - Instead of using broadcast, do you think you could just use “wait _ secs” blocks? Why / why not? (Encourage students to realize that broadcast allows for later changes in the script without having to change the wait times.)
        - What might be an advantage to using broadcast instead? (Encourage students to realize that broadcast is used to synchronize multiple events: change of scenes, start of dialogue in the next scene.)
- Revisit storyboard
    - Show students examples of broadcast & when I receive blocks

- Show students examples of broadcast & when I receive blocks
- Students experiment with these 2 blocks. Emphasize that they can create & name as many messages as they need. Message names should describe what happens next and facilitate the transition between scenes.
- Instruct the students to revisit their storyboard for Create Your Celebration Animation and update it to use the 2 new blocks you learned. Encourage students to create an organized version of the storyboard that includes the names of the messages triggering the broadcast & receive events.

Day 2

- Review of proposed revisions
  - Ask pairs of students who completed the storyboard to exchange journals and review each other's work for the correct flow and transitions of the story of their Create Your Celebration Animation.
- Modify the Create Your Celebration Animation
  - Students implement their new storyboard in scratch.
- Discuss / reflect: on the programs and how do they authentically represent their celebrations traditions or not.
  - How authentically does your animation story reflect your celebration traditions? What are the limitations of the representations through sprites, scripted dialogue & still backgrounds? Example answers: Sprites might not accurately reflect characters, the story represents the creators version of the celebration.
  - Pick a few students to share journal responses.

Resources:

- Scratch Broadcast Role Play

Teacher Reflection Notes

Scratch Broadcast Role Play
This is meant to be performed in front of a whiteboard: the stage. Select students for the 4 characters and give them their parts of the scripts. Whiteboard/ Stage: Depict change of scenes by drawing the background of the scene on the board.

Play with 4 characters: 3 friends Sarah, Mike & Emma planning a beach themed birthday party for their friend Lisa.

Title: Birthday Preparations

Scene 1: The Planning Stage (Sarah's House)

[The stage is divided into three sections, each representing a different location. Sarah, Mike, and Emma are gathered around a table at Sarah's house, surrounded by party supplies and decorations.]

Sarah: We need to make sure Lisa's birthday party is unforgettable!

Mike: Definitely! What's the plan?

Emma: How about a beach-themed party? We can bring the beach to Lisa's backyard!

Sarah: I love it! We'll need sand, beach balls, maybe even a kiddie pool.

Mike: And don't forget the drinks & snacks.

Emma: Sounds perfect! Let's make a list of everything we need.

Scene 2: Gathering Supplies (Hardware Store)

[The stage now represents the hardware store aisle. Sarah, Mike, and Emma are pushing a cart filled with various supplies.]

Sarah: Okay, let's see. We need sand, beach balls, pool noodles...

Mike: And how about some palm tree decorations?

Emma: Good idea!

Sarah: Perfect! Let's grab everything on our list and head to the checkout.

[They gather the supplies they need, head to Lisa’s backyard]

Scene 3: Setting Up (Lisa's Backyard)

[The stage transforms into Lisa's backyard, with a makeshift beach setup. Sarah, Mike, and Emma are busy arranging decorations and setting up the party area.]

Sarah: This looks amazing, guys! Lisa's going to be thrilled.

Mike: [hanging up a string of lights] Just wait until we turn these on when it gets dark. It'll feel like a real beach party!

Emma: [placing beach towels on chairs] And don't forget the sandcastle contest we planned!

Sarah: [spreading out a beach blanket] I can't believe we pulled this off. Lisa is going to love it.

[As they put the finishing touches on the setup, the door opens and Lisa enters.]

Lisa: [gasping in delight] Oh! This is incredible!

Sarah: Happy birthday, Lisa!

Mike: We wanted to make sure you had the best beach party ever!

Emma: Dive in and enjoy!

[They share hugs and laughter as the scene fades out.]

[End of play.]

Instructional Lesson # 6. Days 14-15

Topic Description: This lesson provides an introduction to the concept of variables, through students' choice of different items of clothing to make an outfit

Objectives:

The student will be able to:

- Explain the concept of variables.
- Create examples of variables.
- Discuss & explain the influence of clothing choices in creating biases & misconceptions

Outline of the Lesson:

Segment	Reason/Purpose
Day 1 Prep for the project:(15 min) Discussion bias and stereotypes related to clothing choices and how students are influenced by it. (20) Journal entry (10) Discussion of project (10)	Pictures will be used in this activity. Students examine the influence of clothes and the biases and misconceptions they might create. Familiarize students with variables Introduce students to the concept of variables in clothing choices.
Day 2 Introduce the blocks needed to complete the project (10 min) Worktime on the project (30 min) Reflect on the project (15 min)	

Student Activities:

Day 1

- Prep for the project
- students take pictures of their clothes or find images of clothes online.
- Discussion bias and stereotypes related to clothing choices
- Journal Entry
- Discussion of project

Day 2

- Introduce the blocks needed to complete the project
- Complete the project
- Reflect on the project

Teaching/Learning Strategies:

Day 1

- Prep for the project
    - You will create a program that helps you and your friends choose an outfit to attend the celebration for your community. Your outfit will include items of clothing, footwear, accessories and hairstyle/head dress suggestions. Each of the items will be represented by a picture of the item. Your first task is to collect as many pictures as you want to represent different alternatives for each part of the outfit (at least 2-3). You can use the internet to find pictures, or you can upload pictures of items you or your friends are wearing. Traditional, cultural or cross-cultural items of clothing and hairstyles are encouraged.
- Discussion bias and stereotypes related to clothing choices and how students are influenced by it.
    - What pictures of clothing did you choose? why?
        - Discuss how clothes make you feel. Discuss the role of clothes on how people perceive others. Discuss the data or story an outfit might tell.
        - Discuss biases & misconceptions associated with some items of clothing/hair styles (long/short hair styles, hijabs, natural hair styles, uniforms & dress codes).
- Journal Entry: *Describe in your own words what the word variable means.*
    - Ask students to share their writing with an elbow partner.
    - Connect the root word: vary (change) to the mathematical use of variables and explain that variables allow programmers to implement programs allowing multiple values for the same variable.

- Introduce the project
    - Students will create a program that displays pictures of items of clothes. Each item is given a point value chosen by the student: positive or negative, depending on what students think about the item. Students accumulate points by selecting multiple items to complete an outfit. The total score for the chosen outfit will be displayed after each choice. The program starts "when the green flag is clicked" and ends when the stop button is selected. (15 min)

Day 2

- **Introduce the blocks & program outline** needed to complete the project
    - Explain, create & name a variable, set & change my variable.
    - Discuss the importance of choosing variable names that reflect their function/use in the program.
    - Discuss that each variable needs to have an initial value that can be set using the "set my variable block".
    - Discuss that the value of the variable can be increased/decreased by using the "change my variable block" throughout the execution of the program.
- Explain the program outline
    - When the green flag is clicked, the variable: outfit_score is set to zero
    - When a picture of a clothing item is clicked the outfit_score will increase/decrease by an amount of points chosen by each student to reflect their opinion about this item.
    - When the picture of a stop-button is clicked, the program stops.
- Complete the project
    - Circulate, answer questions, encourage students to test the program multiple times as they add

point values for each picture representing items of clothing. Halfway through the work time, ask students to test one project that is not theirs and give quick feedback to project owners.

- Reflect on the project
    - Why did the students appoint positive / negative values to certain items of clothing?
    - What biases do these values reflect?
    - How these biases are reflected in everyday life & interactions with others.

Resources:

- No additional resources needed.

Teacher Reflection Notes

Instructional Lesson # 7. Days 16-18

Topic Description: Conditional statements are introduced through using a person's age to decide cultural milestones, responsibilities & privileges across cultures. Students build a point-value system and explore the inherent built-in inequities in these systems.

Objectives:

The student will be able to:

- Explain the concept of conditionals, use it to build a program that responds differently depending on conditions evaluating to true or false
- Understand the built-in inequities in systems that depend on point values to make decisions

Outline of the Lesson:

Segment	Reason/Purpose
Day 1 Journal entry. (15 min) Participate in discussion of conditions. (15 min) Review Age sample solution & plan your program (25 min)	Explore age related rituals, responsibilities & privileges across cultures. Understand how conditionals work in Scratch Plan to apply conditionals in a program that ties jobs & responsibilities during their celebration event (from lessons 5) to the age of a participant
Day 2: Create your own program (35 min) Participate in discussion about their decisions of choosing age related jobs and whether the choices are equitable in terms of difficulty & complexity (20 min)	Complete the program Connect the idea that their coded choices of age dependent jobs become permanent in the program and affect everyone using the program
Day 3 Enhance the Jobs program using point system tied to each job (35 min) Discuss the impacts of coded point systems on lives. (20 min)	Enhance the program from day 1 by adding a point system to each job and keeping a tally of the total points depending on jobs chosen. Discuss the built-in inequities in point systems used to determine college applications, loan applications,...decisions.

Student Activities:

Day 1

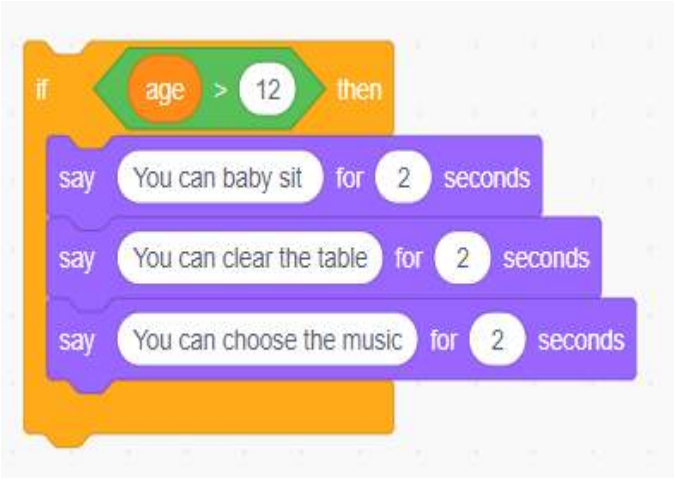
- Complete journal entry.
- Participate in discussion of conditions.
- Review Age sample solution & create your own program

Day 2

- Enhance the variable example.
- Discuss the impacts of coded point systems on lives.

Teaching & learning strategies:

- Journal Entry: *From your personal experience, what rituals, responsibilities & privileges are tied to your age?*
  - Sample answers: Can get driver permit at 15, have bar mitzvah at 12, can vote at 18.
  - Students share with elbow partner
- Participate in discussion of conditions.
  - Ask students: How can you express your privilege, ritual or responsibility using an if statement? example answers: if I am 15 or older, I can get a driving permit.
  - Choose some students to write their if statements on the board to compile a list of at least 8-10 if statements representing different situations/identities and discuss why/how age is used in different cultures to determine milestones.
- Develop a Jobs program.
  - Ask students to think back on your celebration/event from previous lessons (celebration animation). Identify a list of jobs/responsibilities that can be done and categorize them by age. Example: if age > 6, you can set the table. If age > 12, you are responsible for drinks,....
  - Show the if..then block and discuss that the condition is hexagonal shape that fits between if & then. Explain that the action will be executed if-and-only-if the condition evaluates to true.
- Review Jobs sample solution & plan your program
  - Students think about the celebration logistics and choose 3-4 age values, develop 2-3 job responsibilities to be assigned during the celebration.
    Example:



Day 2

- Create your own program. Students use their plan from day 1 to finish the program.
  Students use the pair-programming model to finish the program. they should check their plans from day 1 to match the appropriate jobs to ages.
- Participate in discussion about their decisions of choosing age related jobs and whether the choices are

equitable in terms of difficulty & complexity.

- Discuss**:** Do all job responsibilities in the same age category have the same level of difficulty? How can the responsibilities be assigned to guarantee fairness?
  What consequences would unfair distribution of jobs coded in the program have on someone using it?

Day 3

- Enhance the Jobs program using point system tied to each job:
  - Explain that they will enhance their program by adding points to each job chosen. They will add a point value for each job on the list of jobs. The program will ask about the job a person has chosen to do and display the points earned.
- Discussion
  - How did you choose the point value for each job responsibility?
  - Are the points of each job reflective of its importance, value, complexity?
  - College admission decisions, loan application approval, and other situations depend on an automated point system similar to the one you created in your program. Who makes the decisions about the point values? How do these decisions positively or adversely impact lives?

Resources

- Enhance the Jobs Program Project

Teacher Reflection Notes

Enhance the Jobs Program Project

- Add a variable points and set it to 0
- Ask about which job they chose
- Use if–then blocks to assign point values to each job in your program from day 2.
- Your program will ask about the job a person has chosen to do and display the points earned.