Lesson 5: Your First Program

Powerful Ideas of Computer Science	Representation
Powerful Ideas of Literacy	Alphabet and Letter-Sound Correspondence, Tools of Communication
PTD	Content Creation, Communication, Choices of Conduct, Creativity, Collaboration
Palette of Virtues	Curiosity, Open Mindedness, Fairness, Perseverance, Patience
Children will be able to…	• Define symbols as images that represent or mean something. • Use a touchscreen device to tap, drag, and release blocks effectively. • Identify the Start, End, and Motion Blocks in ScratchJr. • Order the Start, End, and Motion Blocks to create programs in ScratchJr
Vocabulary	• Symbols: items or pictures that have a meaning
Teacher Preparation	• Read lesson plan. • Either print or have this Pictures of Signs document ready to project. • Either print or have this Scavenger Hunt document ready to project.

Warm Up

- **Stop and Go** *(Suggested Time: 5 minutes)*
  - Show Pictures of Signs
    - Ask children if they know what each sign means.
    - First sign means STOP.
    - Second sign means GO.
  - Show a picture or two of a street and go on a Scavenger Hunt for other **symbols**
    - Ask children to look around the picture and locate other signs on the street.

Opening Tech Circle

- **ScratchJr Symbols** *(Suggested Time: 10 minutes)*
  - Start the conversation by discussing how we know what street signs mean. Ask children, "How did you know it meant STOP?" Prompt them to notice the color and shape of the street signs.
  - Then ask children, "How do you know what ScratchJr blocks mean? What clues can you find about what they do?"

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        - Shapes: *Pull up a Start Block, an Action Block, and an End Block.* Discuss the shapes of blocks and ask if the shapes mean anything?
        - Colors: Discuss the significance of the block colors. Explain that each color represents a certain block type (e.g., blue = motion, green = sound, pink = appearance).
        - Pictures: What do the pictures tell us?
    - Discuss the importance of the Start on Green Flag Block and the End Block. These blocks have specific purposes within the programming language. They are like the front and back covers of a book! All the motion, appearance, and sound are in the middle of the sandwich; they need two pieces of bread to keep it together: a start and an end!

ScratchJr Time

Structure Challenge:

- **ScratchJr Program Introduction** *(Suggested Time: 10 minutes)*
    - Show simple motion blocks to the class and introduce how to make a program on ScratchJr using the steps below:
        1. Drag blocks into the programming area and tap on them to show how Cat moves. Some important motion blocks are left, right, up, down, turn left/right, and jump.



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2. Show how to snap Programming Blocks together to make a sequence of movements.

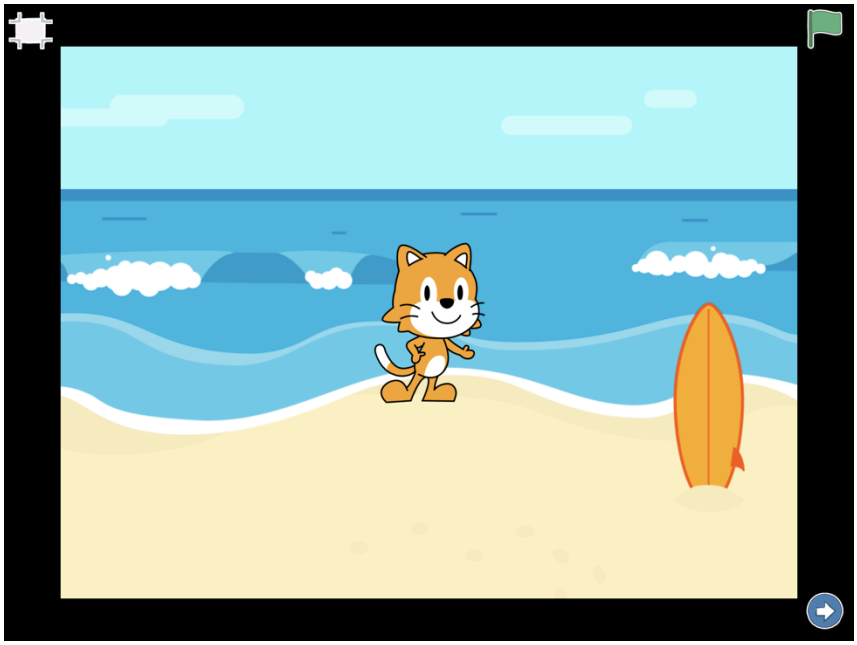


3. Demonstrate how to create a program using Start and End Blocks that runs by taping the green flag. All programs need a Start and End block. The Start block is like a capital letter at the beginning of a sentence, and the End block is like the period at the end of the sentence.

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1. Demonstrate how to present a program in Presentation mode, which makes their ScratchJr project fill the screen. To run your program in presentation mode, children will need to press the green flag in the top right corner. See the example below of a project in presentation mode (note the green flag in the top right corner).



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2. Please also note how the Programming Blocks are not visible in Presentation mode. For project shares, encourage children to share their ScratchJr projects and show the class their code.

Expressive Exploration: **(***Suggested Time: 10 minutes)*

- **Free Play**
  - Challenge children to use the new blocks they just learned to make Cat do different things using motion blocks!
- **Learning from Free Play (together)**
  - Allow children to explore the motion blocks freely for a couple of minutes.
  - Discuss sharing procedures - (e.g., explaining their ideas while showing their project, listening while others present, and putting down their devices). Remind the children of the class value "Respect" discussed on the second day! Also, encourage children to show their peers their code, compliment each other's projects, and ask each other questions.
  - Divide the class into two groups, create two stations around the classroom, and allow children to take turns sharing their creations. Guide them using these questions: What do you notice? What do you wonder? What did you learn?

Closing Tech Circle

- **Project Reflection** *(Suggested Time: 10 minutes)*
  - Ask children to reflect on their project: why they like it and give a compliment to the programmer. Encourage them to answer: What do you notice? What do you wonder? What did you learn?
  - Use this time to talk about why sharing projects is important: How does it help us improve our own work and others' work? How does it make us feel to share or have others share with us? Let children answer these questions.
  - Encourage reflection asking them to think about
    - What happened when they created a program?
    - Did it work immediately?
    - Did Cat do what they wanted it to do? If not, how did you fix that problem?

Opportunities for Differentiation

- **Extra Challenge**
  - For children that need more scaffolding for free play, give them examples of different motions to try:
    - Make Cat move all the way across the screen.
    - Make Cat move to the four corners of the screen.

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- Make Cat spin around.
- Make Cat jump 3 times.

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