



Hour of Code Activity: Can I Make the Sun Set?

Overview

Children will use the ScratchJr programming app to make a program in which the sun sets over a city landscape. With this activity, children will be introduced to a variety of ScratchJr features, including changing the background of their project, removing and adding characters, changing characters' start position, and utilizing **motion blocks** as well as the **hide block**. Furthermore, children will use the **number pad** feature to control how far the sun goes down, enhancing their math and reasoning skills.

Goal

“Can I Make the Sun Set?” is an introductory activity meant for children in kindergarten through second grade with little to no programming experience to learn the basic features of ScratchJr and the elementary concepts of coding. Through this activity and continued time with ScratchJr, students will have the opportunity to think creatively, become storytellers, and improve upon mathematical reasoning and sequencing skills. Later, children can use the skills they have learned to create their own unique projects.

Materials

- iPads Running iOS 7 or greater or Android tablets running Android 4.4 or greater
 - Enough for each student in class, or have students work in small groups
- The ScratchJr app
 - A free download from the Apple App Store (iPads) or Google Play (Android tablets)
- A large screen to project tablet projects onto for sharing, if available

Prep

- Download the free ScratchJr app onto each of your classroom iPads or Android tablets
- Become familiar with the ScratchJr app by exploring how-to videos and resources on www.ScratchJr.org
- Explore the sample projects embedded in the app to learn the basics of what each block can do

Intro (5 minutes)

With ScratchJr, your students can become storytellers, programmers, artists, and more. Spend some time introducing the class to the concepts they will be learning about with this preliminary ScratchJr activity. Here are a few introductory discussion questions to pose to the class before getting started with programming “Can I Make the Sun Set?”

- Does anyone use apps on an iPad or tablet?
- Has anyone ever heard of the ScratchJr app?
- What is code? What is programming?
- What do you think programmers do?
- What are some things you can think of that have a beginning, middle, and end?

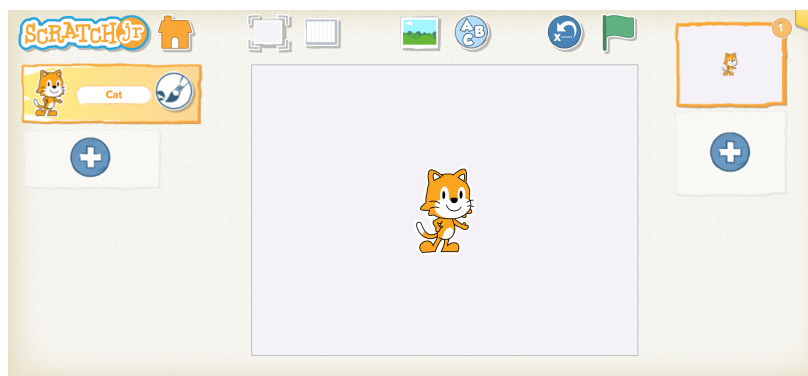
Getting Started (15 minutes)

Have your students take about 15 minutes exploring the basic features of the app.

- First, open up the ScratchJr app from the home screen on the tablets
- Tap the **home** button on the left to start



- To create a new project, tap the **plus** sign under “My Projects”
- Use the **ScratchJr Kitten** as an example character to explore what different blocks do



- Ask the class where they think the blocks should go? How do we use the blocks to make the kitten do what we tell it to?



- Make ScratchJr Kitten move by dragging down any **blue motion blocks** and tapping them:



- What happens when the **number** at the bottom of the block changes? How do we change it?



- Looking at the screen, what block do you think will be able to **start a program**?
- Use the **green flag** to begin snapping blocks together and make a sequence



- Introduce the concept of adding a new character



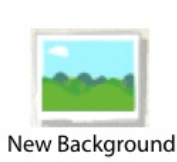
- Look through the different background options



Create (30 minutes)

Each student can now use his or her own iPad or Android tablet (or work together in groups) to create the activity “Can I Make the Sun Set?”

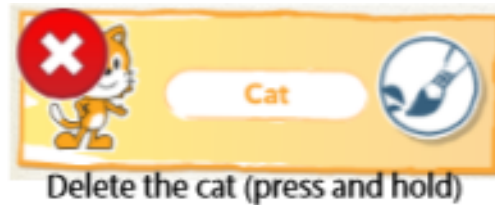
1. Choose the **Park background** to get started



2. Choose the **sun character**



- a. Delete the **ScratchJr Kitten** character



3. Move the sun to a start position up in the sky on the left side of the background

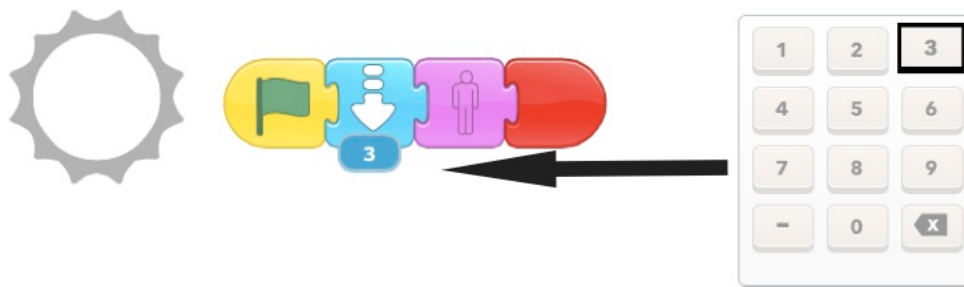


Position the sun by dragging it from the center of the screen.

4. Make a program with a beginning, middle, and end
 - a. Start with the **green flag block** to indicate the start of the program
 - b. Make the sun go down in the sky (“set”) with the **down motion block**
 - c. Change the number of times the sun completes the down motion by tapping the number on the block, then pressing “3” on the **number pad**
 - d. Use the **hide block** to make the sun disappear after it goes down in the sky, just like we see everyday in real life



- e. Don't forget to finish the program with the **red end block**



Share (10 minutes)

Have students go around and share the programs that they made. Ask if anyone had any difficulties with the instructions, or if any aspect of “Can I Make the Sun Set?” was particularly confusing for them. What did they learn about programming and coding? Talk about what they could do to add to their program to make it unique.

What's Next?

When this activity is completed, teachers are advised to encourage children build upon what they learned with “Can I Make the Sun Set?” and experiment with other ScratchJr features. Extending the activity allows children to think creatively and make the project unique to their own lives. Potential ideas for the children may include:

- Make the sun set on your own neighborhood
- Include your family and friends in the project
- Add animals that live in the park to the background of the project
- Create a game with the project
- Add a page to show the scene at night-time