VOCABULARY
Scene: The stage at a particular time
Show: Makes a sprite appear or reappear on the stage
Hide: Makes a sprite disappear from the stage
Change Background: Change the background picture for the stage

ACTIVITY GOAL
In this project, you will make scene changes to show how a flower grows.

BACKGROUND
To make scene changes you must use a few different blocks that will program not only your sprite, but also the stage.

Scenes
Like a scene in a play, movie, or game. The scene may change when the character travels to a different location or moves to a higher level. Different scenes are distinguished by which sprites are visible and what the background looks like.

Every time a scene changes you should think about:
1. What’s going to happen?
2. What might the new background be?
3. What sprites will appear (show) that weren’t there before?
4. What sprites will disappear (hid) that were shown before?

The first step is to change the background.

Step 1: Change the background.

The backgrounds are controlled by the sprite called Stage found in the sprite list. By using the block below in the Stage’s script, you can change the way the background looks.
Step 2: Show and Hide sprites

The blocks to the right determine which sprites are showing on the stage at a particular time.

Step 3: Initialize sprites when you click the green flag

1) If you change the background, use

2) If you hide or show a sprite, use and

EXPLORE

Your teacher will play the completed Plant Growing project for you before you begin. This is the sequence of scenes you are going to copy.

1) Open the project PlantGrowing. Click on the Green Flag.

2) Click on the cloud that says “Click Me”.

A scene change is supposed to happen, but it doesn’t. What three changes should have happened? Write the three things below.

1. The cloud will rain.
2. There will be a small plant that grows.
3. A small white button that says “Next” will appear.

3) Click on the costumes tab for each sprite. Look at the costumes you can use.

4) Click on the stage in the sprites list. Click on the background tab.

5) Remember, you can use the broadcast & receive blocks to let the other sprites know about a scene change.

You will need to use all of these things to create the story with the scene changes you saw earlier.
PROGRAMMING CHALLENGE: Plant Growing

Your goal is to program the sprites, costumes, and backgrounds to make the flower grow like the example project.

PLAN

Step 1: Open the project PlantGrowingExample. Click the green flag. Write what happens below.

- When I click on the cloud these changes happen…
  The cloud rains, a small plant grows out of the ground, and a small white “Next” button appears near the plant’s roots.

- When I click on the “Next” button these changes happen…
  A sun appears that says, “click me” on it, a flower appears on the plant, and the roots expand and show a small amount of water in parts of them.

- When I click on the Sun these changes happen…
  The sun has rays come off of it shining down onto the flower.

CREATE

Now it is time to create your project! Decide which blocks you will need to make all of the changes you wrote above in the Plan section. Try to use some of the things you have learned in earlier projects.

Below are some examples of blocks you might use for this project.
**Step 1:** Match the order of the **scenes** with the example project. Make changes to the **stage**.

**Step 2:** Make the changes happen when the correct **sprites** are clicked. **Broadcast** and **Receive** messages between certain **sprites**.

**Double-Check: Did you remember everything?**

1. Does the **background** for each **scene** match the example project?
2. Do the correct **sprites** show up for each **scene**, and do the ones that shouldn’t be there disappear?
3. Do the **scene** changes happen when you **click** on the correct buttons on the **stage**?

**IMPROVE**

If you finish early, try improving your project by doing the following:

1. Make the cloud rain for a while, then stop raining and then move off screen. Which **blocks** would you use to make this happen? The **IMPROVE** sections are designed to be open-ended for students and there may be more than one possible correct response to these questions.

2. Make the sun switch between its two **costumes** a few times. Remember that you need to include a Wait **block** between each **costume** change.

3. Make the sun get bigger when it changes to the **costume** with the rays coming out.

4. Are there any other changes you could make to improve your project? **Describe** them below.

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