OBJECTIVES
By completing this activity, students will:
+ gain more fluency with computational concepts (events, parallelism, data) and practices (experimenting and iterating, testing and debugging, reusing and remixing, abstracting and modularizing) by creating a project exploring video sensing or cloning

RESOURCES
- Advanced Concepts studio
  http://scratch.mit.edu/studios/221311
- Video Sensing handout
- Video Sensing examples studio
  http://scratch.mit.edu/studios/201435
- Cloning handout
- Cloning examples studio
  http://scratch.mit.edu/studios/201437

REFLECTION PROMPTS
+ Which advanced concept(s) did you choose to explore?
+ What was your strategy for learning more about the concept(s) you selected?

REVIEWING STUDENT WORK
+ Do projects explore one or more of the advanced concept(s)?

NOTES TO SELF

- Students who want to explore the video sensing feature will require a computer with a webcam.
- Remind students that the backpack tool can be used to borrow and remix code from example projects.
VIDEO SENSING

HOW CAN YOU USE VIDEO SENSING IN YOUR SCRATCH PROJECTS?

Did you know that you can make your Scratch projects interactive through a webcam? Explore this advanced Scratch concept by creating a project that incorporates the video sensing feature.

START HERE

- Open an existing Scratch project or start a new project to add video sensing.
- Click on Extensions.
- Click on Video Sensing.
- Check out blocks for video sensing in the Sensing category.
- Experiment with video on, turn video, and set video transparency to blocks to program your project to sense video motion.

THINGS TO TRY

- Make sure your webcam is connected! Test it out using the turn video on block.
- If you’re feeling a little stuck, that’s okay! Explore some of the other projects in the Video Sensing studio to see how they use the video blocks or use the Tips Window to learn more about video sensing.

FINISHED?

- Add your project to the Advanced Concepts studio: http://scratch.mit.edu/studios/221311
- Add video sensing to one of your past projects!
- Help a neighbor!
- Remix a project in the Video Sensing studio.
Cloning is an easy way to create multiples of the same sprite. You can use cloning to make many objects and create cool effects in a project.

Explore this advanced Scratch concept by creating a project that incorporates the cloning feature.

**START HERE**

- Open an existing Scratch project or start a new project to experiment with cloning.
- Check out blocks for cloning in the Control category.
- Experiment with the blocks to create clones of your sprite. Define behaviors for what your cloned sprites will do.

If you can’t see your clone initially, check if the original sprite is in the same location – it might be covering the clone! Program your original sprite or the clone to move or go to different locations so you can see them.

Stuck? That’s okay! Explore some of the other projects in the Cloning Studio to see how they use cloning or search in the Tips Window to learn more about the Create Clone and When I start as a Clone blocks.

**THINGS TO TRY**

- If you can’t see your clone initially, check if the original sprite is in the same location – it might be covering the clone! Program your original sprite or the clone to move or go to different locations so you can see them.
- Stuck? That’s okay! Explore some of the other projects in the Cloning Studio to see how they use cloning or search in the Tips Window to learn more about the Create Clone and When I start as a Clone blocks.

**FINISHED?**

- Add your project to the Cloning studio: [http://scratch.mit.edu/studios/201437](http://scratch.mit.edu/studios/201437)
- Add cloning to one of your past projects!
- Help a neighbor!
- Remix a project in the Cloning studio.
ADVANCED CONCEPTS REFLECTIONS

+ Which advanced concept(s) did you choose to explore?

+ What was your strategy for learning more about the concept(s) you selected?