HARDWARE & EXTENSIONS

SUGGESTED TIME
45–60 MINUTES

OBJECTIVES

By completing this activity, students will:

+ be introduced to various hardware extensions that connect the digital world of Scratch with the physical world

ACTIVITY DESCRIPTION

- ❏ (IMPORTANT: This activity requires access to one or more of these hardware products.) Introduce students to ways Scratch can connect to other technologies and hardware extensions including the LEGO WeDo, MaKey MaKey, and PicoBoard. Optionally, show examples from the How can I connect Scratch with other technologies? video playlist.

- ❏ Divide students into small groups of 2-4 people. Give the groups time to explore creating a Scratch project that incorporates a physical world component using one or more available hardware extensions.

- ❏ Allow each group to share their creations with others. We suggest facilitating a gallery walk or feedback fair.

- ❏ Ask students to think back on the design process by responding to the reflection prompts in their design journals or in a group discussion.

RESOURCES

- ❏ LEGO WeDo construction set
  http://bit.ly/LEGOWeDo
- ❏ MaKey MaKey
  http://makeymakey.com
- ❏ PicoBoard
  https://www.sparkfun.com/products/10311
- ❏ How can I connect Scratch with other technologies? videos: http://bit.ly/hardwareandextensions

REFLECTION PROMPTS

+ Which hardware or extension did you explore?
+ How did you incorporate the digital and the physical?
+ What was difficult?
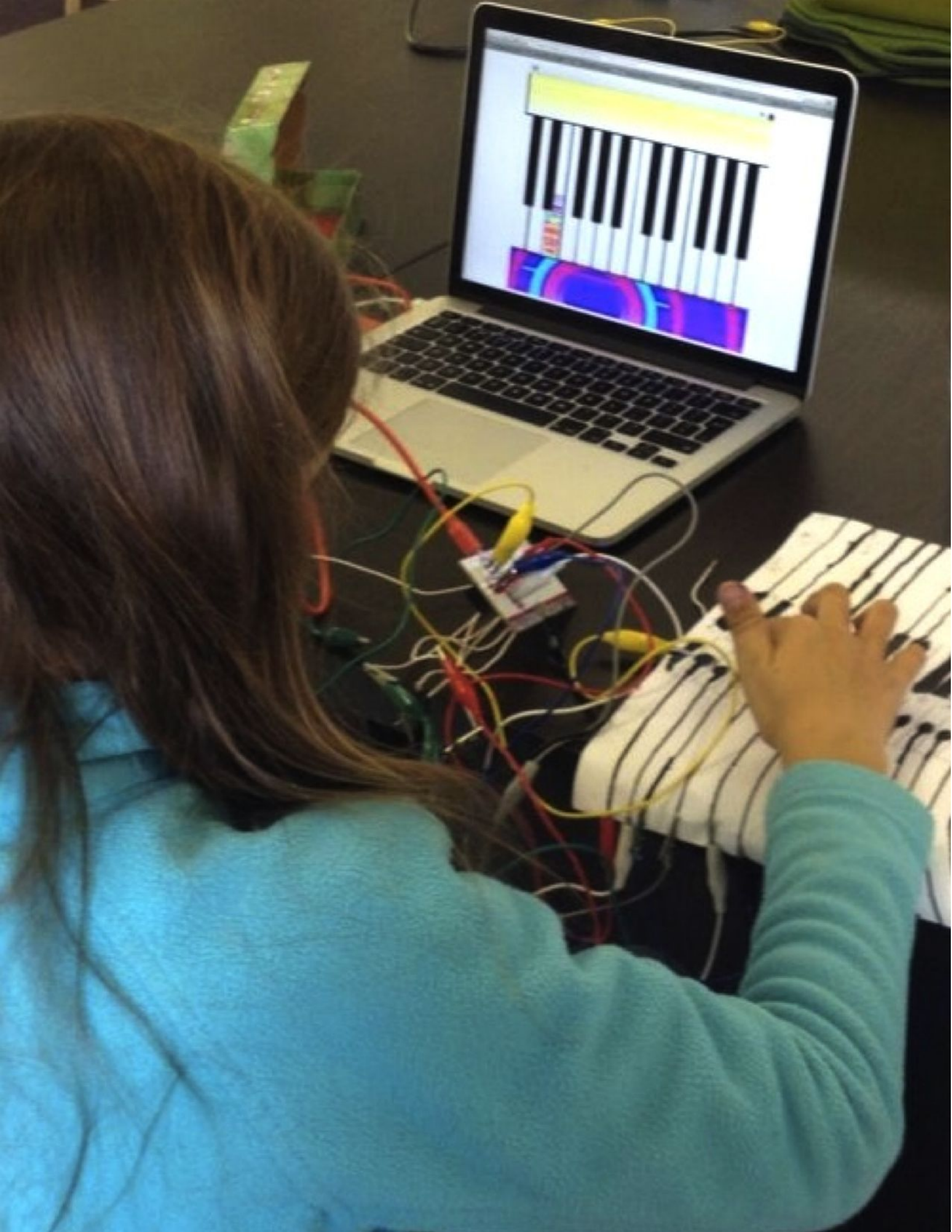+ What was surprising?

REVIEWING STUDENT WORK

+ Does the work have a digital and a physical component?

NOTES

+ Make this a group-wide activity! Using the LEGO WeDo and Scratch, challenge students to connect their projects to create a chain of reactions in the style of a Rube Goldberg machine. See this video for an example: http://bit.ly/ScratchChainReaction
+ Activate the Scratch blocks that control hardware extensions by clicking on the Add an Extension button located under the More Blocks category in the Scratch project editor.

NOTES TO SELF

- ❏ _____
- ❏ _____
- ❏ _____
- ❏ _____

HARDWARE & EXTENSIONS REFLECTIONS

NAME:

RESPOND TO THE FOLLOWING REFLECTION PROMPTS USING THE SPACE PROVIDED BELOW OR IN YOUR DESIGN JOURNAL.

+ Which hardware or extension did you explore?

+ How did you incorporate the digital and the physical?

+ What was difficult?

+ What was surprising?