

### Materials for each group or student

- KORG littleBits Synth Kit
- 3.5mm earbuds or headphones
- Paper
- Pencils, crayons, and/or markers
- Small screwdriver to operate flat dials on modules o24 and i31 (optional)
- 3.5mm aux cable and speaker with aux jack (optional)

### TEKS (Standards)

- Technology K-2: 1a, 1d, 4a, 6a, 6b, and 6d
- Technology 3-5: 1a, 4a, 5f, and 6d

### Lesson Objective

The student will demonstrate the safe connection, use, and storage of the synth kit's essential modules, including: p1 power module (cable, 9V battery, power switch), o24 output module (speaker, volume control, audio jack), and i31 input module (oscillator).

### Differentiation Strategies

Special Needs: Intentional grouping to provide scaffolding via peers, aides, or teacher

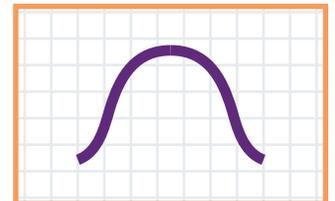
Enrichment: How a loudspeaker works <http://education.korg.com>

### Engagement

1. Students will view Crazy Frog-Axel F <http://education.korg.com>
2. Teacher will facilitate a class conversation around the question, "What instruments were used to create the music you heard in the video?" (Electronic instruments/synthesizers/computers)
3. Teacher will take note of students' prior knowledge of electronic instruments, digital sounds, synthesizers, and related concepts/vocabulary, such as speaker, MIDI, controller, etc.
4. Students will view the KORG littleBits Synth Kit intro <http://education.korg.com>

### Exploration

1. Before touching any of the items, create a group circle map of ways to destroy or damage the equipment or harm ourselves. Facilitate the discussion to ensure that all of the following are included:
  - a. Putting any of the items in our mouths, noses, or ears
  - b. Pulling on the black and red wires of o24
  - c. Pulling the flat dials on o24 or i31 up away from the board
  - d. Touching jacks or battery terminals with the screwdriver
2. Questions are written on index cards and placed on the table
  - a. What sounds can you make with the modules you've been given?
  - b. How can you change the sounds?
  - c. Can you draw pictures of the sounds you made? (see example)
3. Students experiment with different configurations and log the sounds they make with drawings.



### Explanation

1. Teacher facilitates a discussion of exploratory missteps, successes, and concepts:
  - a. "Let's talk about the failures that were a part of our success today."
  - b. "What didn't work, and what did you learn?"
2. Teacher corrects any misconceptions, and ensures mastery of the learning objective.

### Elaboration

1. Students return to their stations and carefully disconnect all components, leaving them on their table along with the drawings they made of their sound explorations.
2. Groups rotate to a new table. One member of the group assembles the three modules, and other members of the group take turns “playing” the drawings that are on the table.
3. The student who assembled the synth kit carefully disconnect all components
4. On each rotation a new student assumes the job of connecting and disconnecting the synth kit until all have had a turn.
5. After the final rotation, the teacher demonstrates correctly returning the components to the box, and students complete the task for the remaining sets.

### Evaluation

- The teacher observes student conversations, work, and products to assess mastery of the learning objectives.
- The teacher may assign a summative task, such as creating written instructions or a “how to” video demonstrating the learning objectives for other students. The video could be uploaded to YouTube and linked on the teacher’s web site for new students and students who need a refresher on the procedures.