



**GRADES:** 2–5

**DIFFICULTY:** ●○○○

**TIME NEEDED:** 45–90 mins

### PROJECT OVERVIEW

Create an interactive fabric square that tells others about your family when each component is touched.

### PROJECT SEQUENCE

#### DREAM

1. Have students determine their family's unique traits.

#### DESIGN

2. Ask students to think about how they can express their family's traits using fabric, craft supplies, and a Makey Makey to trigger sounds or audio.
3. Have students sketch a drawing of their family tree idea. Encourage them to think outside the box. Remind them that the final object will need to make sounds or trigger audio recordings when each component is tapped.

#### MAKE

4. Have students collect the materials they will use and assemble their family trees.

- Once they have the basic form, remind them to add their interactive components with Makey Makey and Scratch.
  - Students may need to make the physical part first and then add the interactive components such as Makey Makey.
5. As students build, have them test out the various components and make adjustments as needed. Remind them to update their sketches as they make modifications.

#### SHARE

6. Allow students to share and document their family trees with one another as time allows.

#### REFLECT

7. Have students reflect on what they learned by answering the reflection questions in a group.

### SUGGESTED MATERIALS

- Felt or other fabric
- Needle and thread or fabric glue
- Scissors
- Sewing adornments (e.g., buttons, patches, quilt squares, etc.)
- Makey Makey, copper tape, brass fasteners
- Access to a computer with Scratch 3.0
- Copies of the student guide (one per student)

### EXTENSION ACTIVITIES

1. **This activity works well with the entire class. Have each student make one quilt square, and then sew them all together to create a large family tree classroom quilt.**

- If you do this, you may want to consider:

- ◆ Giving younger students yarn, large plastic needles, and pre-holed felt squares.
- ◆ Taking some extra time to teach students how to hand stitch or even machine-sew.

2. **Connect to history:**

- Have students research and re-create the family tree of a historical figure.

3. **Connect to music:**

- Ask students to compose a song or rap that describes their family tree.
- If they play an instrument, students can perform a song from their family's ancestry.

### TEACHER TIPS

1. To save time, you can pre-cut felt into various shapes, and have students glue or staple them together.
2. If your students have not worked with Makey Makey and Scratch before, have them explore these tools before starting the activity: [labz.makeymakey.com/cwists/preview/1173x](http://labz.makeymakey.com/cwists/preview/1173x)
3. Consider how students will reflect and communicate.
  - How will you facilitate communication between students?
    - ◆ Will they share daily reflections?
    - ◆ Will they give one another feedback?
    - ◆ Will they have time to reflect on what they've shared with other students or teams?
    - ◆ Can students comment on their classmates' projects or provide constructive feedback?