Music Blocks Lesson Plan
Make a Piano

Age:

7-12 years.

Lesson duration:

60 minutes
- Introduction: "What is a piano?" (15m)
- Part 1: Click (15m)
- Break (5m)
- Part 2: Variations (15m)
- Performance/Critique (10m)

Number of students:

Up to 10.

Rationale:

Students will learn about the "click" event in order to build an interactive program.

Objectives:

Students will explore the Click event handler and different ways to explore that mechanism in building interactivity into Music Blocks applications.

LESSON

Introduction: What is a piano?

Begin by asking students to sit in a circle and explain that in today's lesson they are going to make a piano in Music Blocks.

Start off by having each student describe how they think a piano works. (If available, show them the actual mechanics of a piano -- the linkage between the keys and the hammers that strike the strings.)
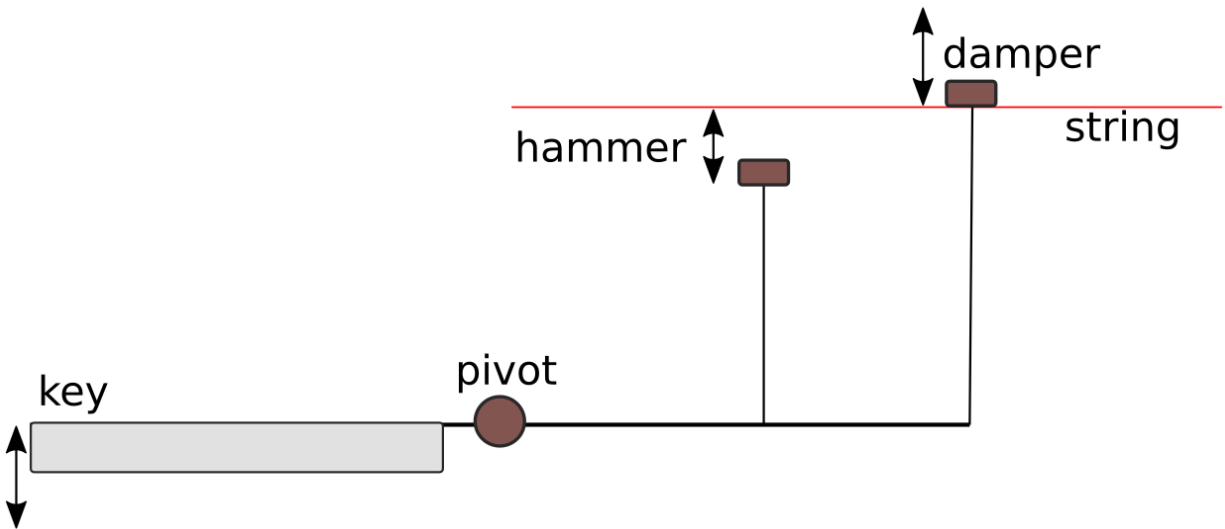
1. When the key is pushed down, the hammer goes up and strikes the string, creating a sound. (At the same time, the damper is released.)
2. When the key is released, the damper drops back down, stopping the string from vibrating.

In Music Blocks, we'll use a "button" for each key. When we click on the button, a note will play.

Part 1: "Click"

1. We'll need these blocks: Start, Set Mouse Name (from the Ensemble palette), On-Event Do (from the Action palette), Click (from the Sensor palette), and an Action block containing a Note block.
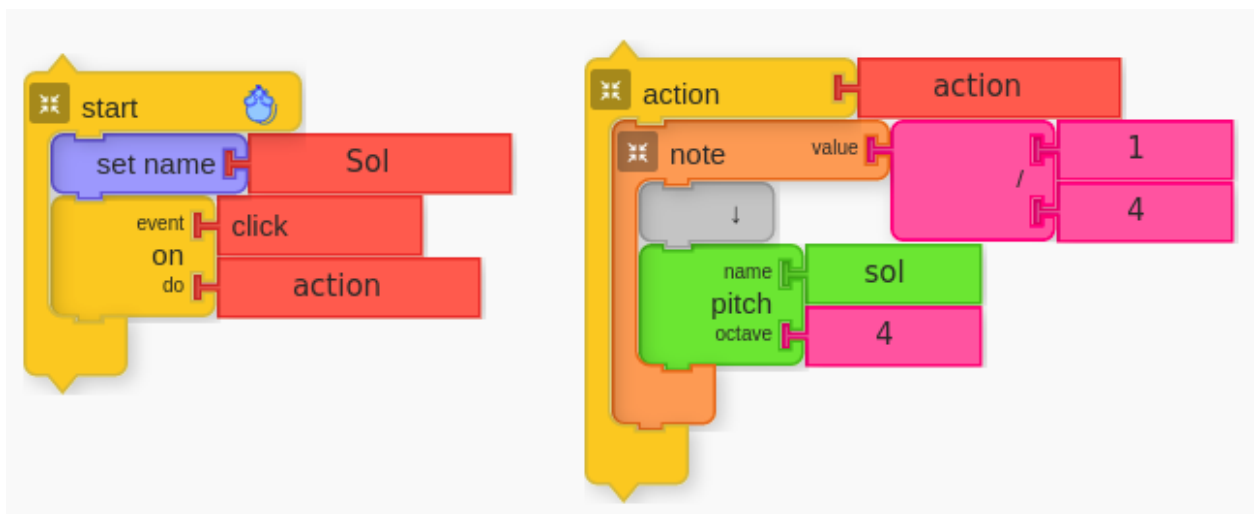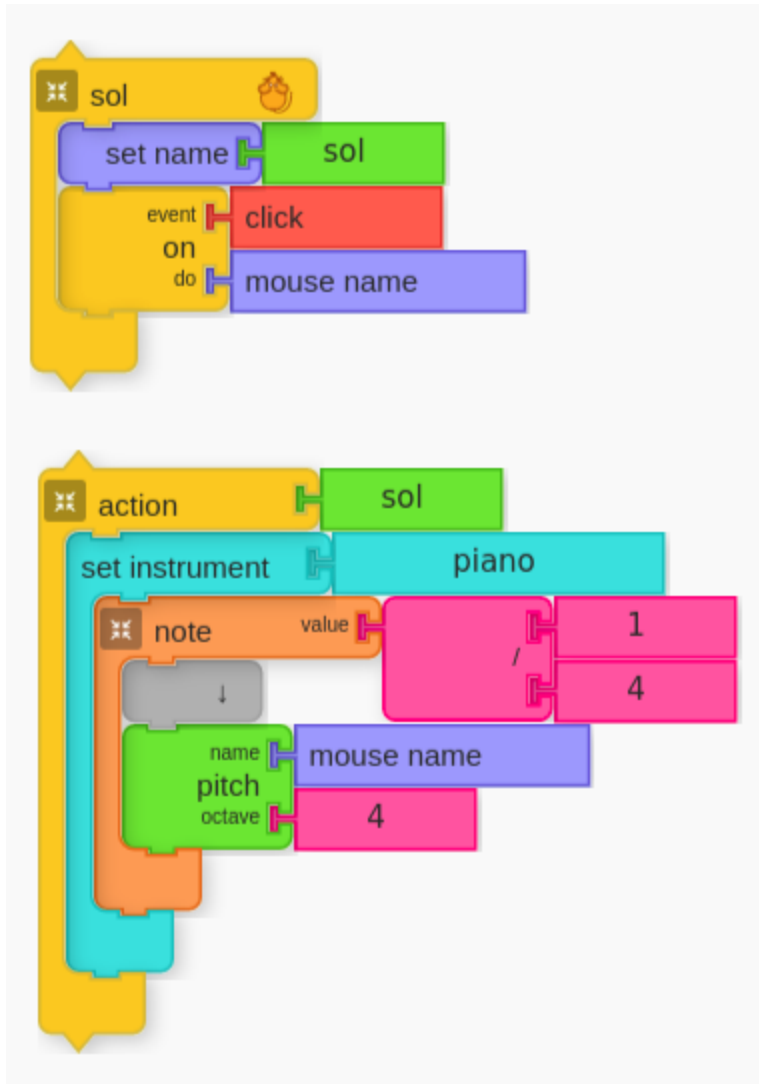

When you run the program, you are telling the mouse (called "Sol" in the above example) to do "action" when the mouse is clicked.

Action "action" plays a ¼ note, "Sol".

Each time the mouse is clicked, a Sol is played. We've made a piano key!!!

2. We can enhance things a bit as illustrated.

By using a Pitch Name block for both the name of the mouse and the action, we can simplify the process of creating multiple notes. (Note that we use a Mouse Name block for the name of the action to take on the "click" event. And the note we play inside the action is also the mouse name.)

3. Make as many "keys" as you want for your piano by copying the Start and Action blocks.
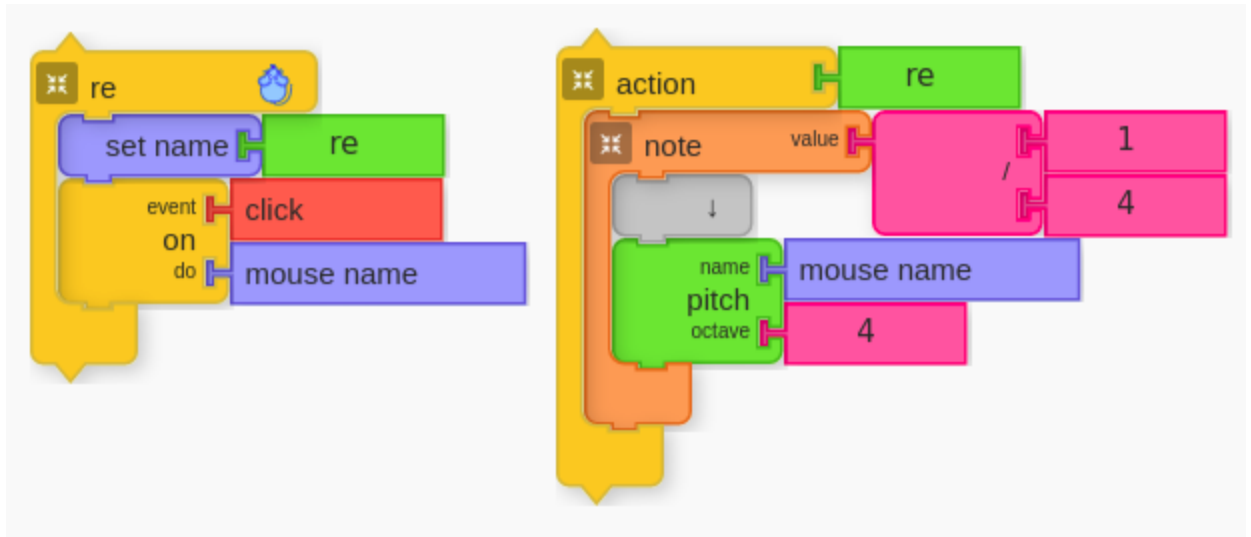
4. You may want to space out your notes by adding a SetXY block.
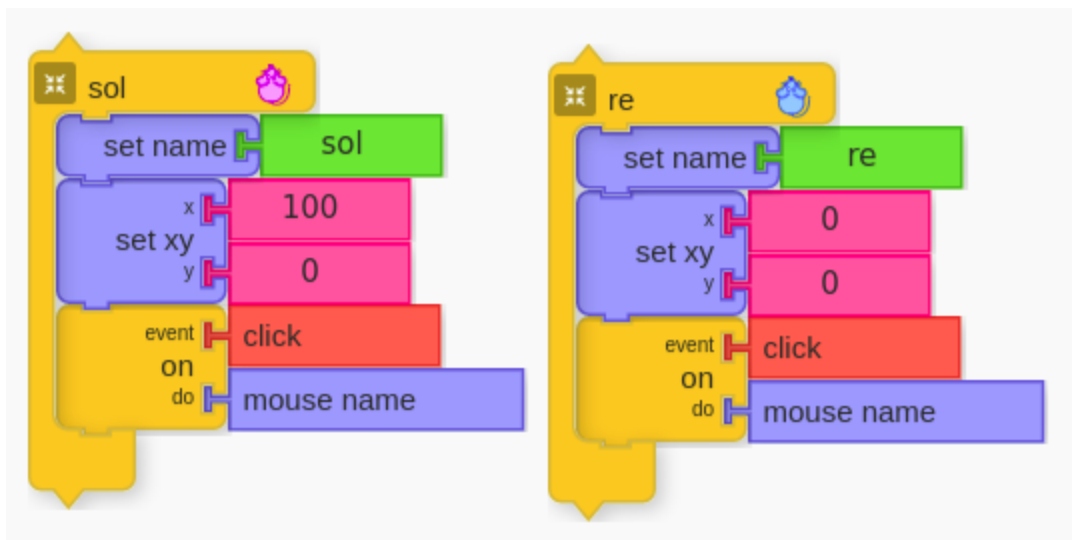
Break

Part 2 Variations

There are many variations you can add to your piano.

- Use the Avatar block to make your mice into pictures, for example, a different character from your favorite movie for each note.
- Add a drum sound along with the pitch inside your notes.
- Add graphics to your piano.
- Add keys for other instruments.

You undoubtedly have your own ideas as well.
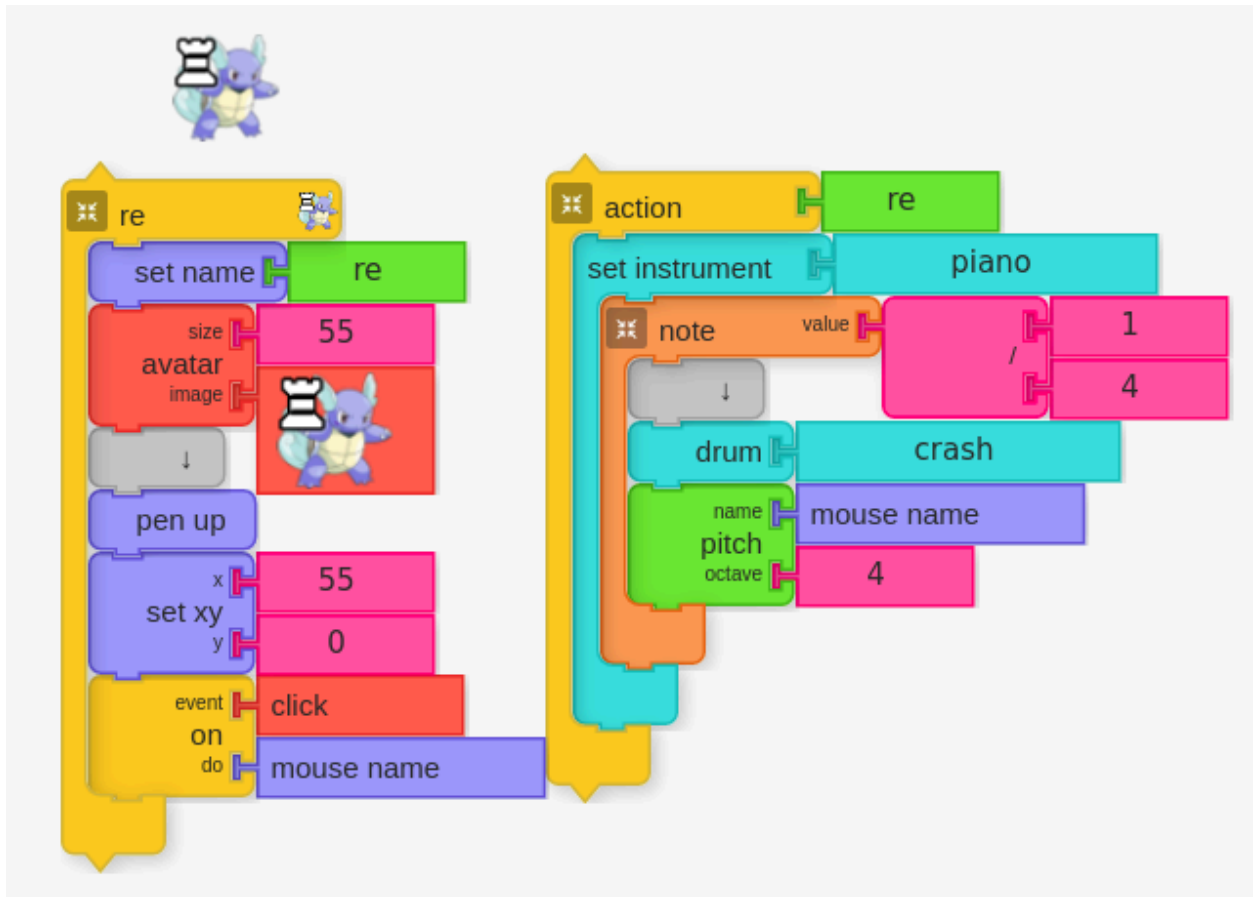
Performance/Critique:

1. Have each student play their piano and then talk about what each key does.
2. Engage in a discussion about how a Music Blocks "piano" is different than a piano.

Key events:

- Introduction of key concept: Click
- The students create their own variations on what it means to hit a key on a piano.

Materials:

- Music Blocks software
- Piano (optional)

Assessment:

- Observe participation.
- Do the programs make use of the concept of on-click events?
- Is there a creative use of the action associated with clicking on a key?