



Music Blocks Lesson Plan

Sensors

Age:

7-12 years

Lesson duration:

90 minutes

- Introduction: Senses (10m)
- Part 1: Loudness, Cursor X and Y (20m)
- Break (5m)
- Part 2: The Tone Palette (20m)
- Break (5m)
- Part 3: Explorations (20m)
- Performance/Critique (10m)

Number of students:

Up to 10.

Rationale:

Students will learn about the sensors and how they can be used in computation; they will then explore the use of sensors in the creation of interactive musical compositions.

Objectives:

Students will learn about a fundamental tool in modern computing, the sensor. Students will be able to utilize sensors in the creation of interactive compositions.

LESSON

Introduction:

Begin by asking students to sit in a circle and explain that in today's lesson they are going to learn about the sensors.

Start by discussing how people sense the world. What if the computer could detect loudness?.

Part 1:

A. Set XY and Cursor X and Y

1. Ask the students to drag the Set XY block from the Graphics Palette.
2. Have them guess what it might do.
3. Have them show the Cartesian grid and explore plugging different numbers into the Set XY block.
4. Have them drag the Cursor X and Cursor Y blocks from the Sensor Palette.
5. Have them guess what they might do.
6. Have them put plug the Cursor X and Cursor Y blocks into the Set XY block.
7. Place the Set XY block inside of a Forever Block.
8. Explore and make observations.

B. Loudness

1. Ask the students to drag the Loudness block from the Sensor Palette.
2. Have them guess what it might do.
3. Have them drag the Set Pen Size block from the Pen Palette.
4. What happens when you plug the Loudness block into the Set Pen Size block?
5. Place the Set Pen Size block above the Set XY block.
6. What happens?

Break

Part 2

A. Four Phrases

1. Using either the Rhythm Maker, the Phrase Maker, or the Music Keyboard, create four different short phrases, each in its own Action Block.
2. Using if/then/else blocks and Less than and Greater than blocks, assign a phrase to each of four conditions: cursor x < 0 and cursor y < 0; cursor x < 0 and cursor y > 0; cursor x > 0 and cursor y < 0; and cursor x > 0 and cursor y > 0.
3. Play the piece, moving the cursor to select between the phrases.

Break

Part 3:

Exploration

1. Add other blocks to the conditional and see what happens. Try changing volume, tempo, etc.

Performance/Critique:

1. Have each student perform their composition.
 2. Engage in a discussion about conditionals. How else can you use them?
- What are some other conditions than Mouse Button that might be fun to incorporate?

Key events:

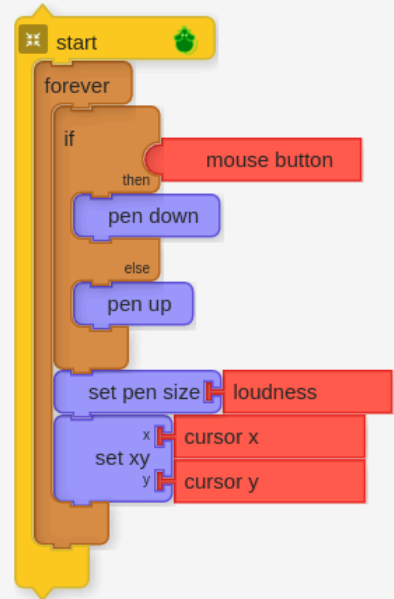
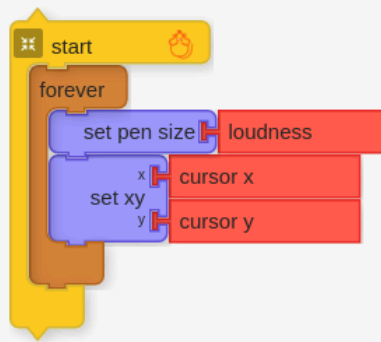
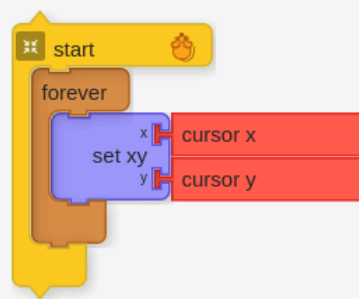
- Introduction of key concepts- sensors and reactions
- The use of action blocks to share code (melody)
- The use of conditional for the purposes of interaction

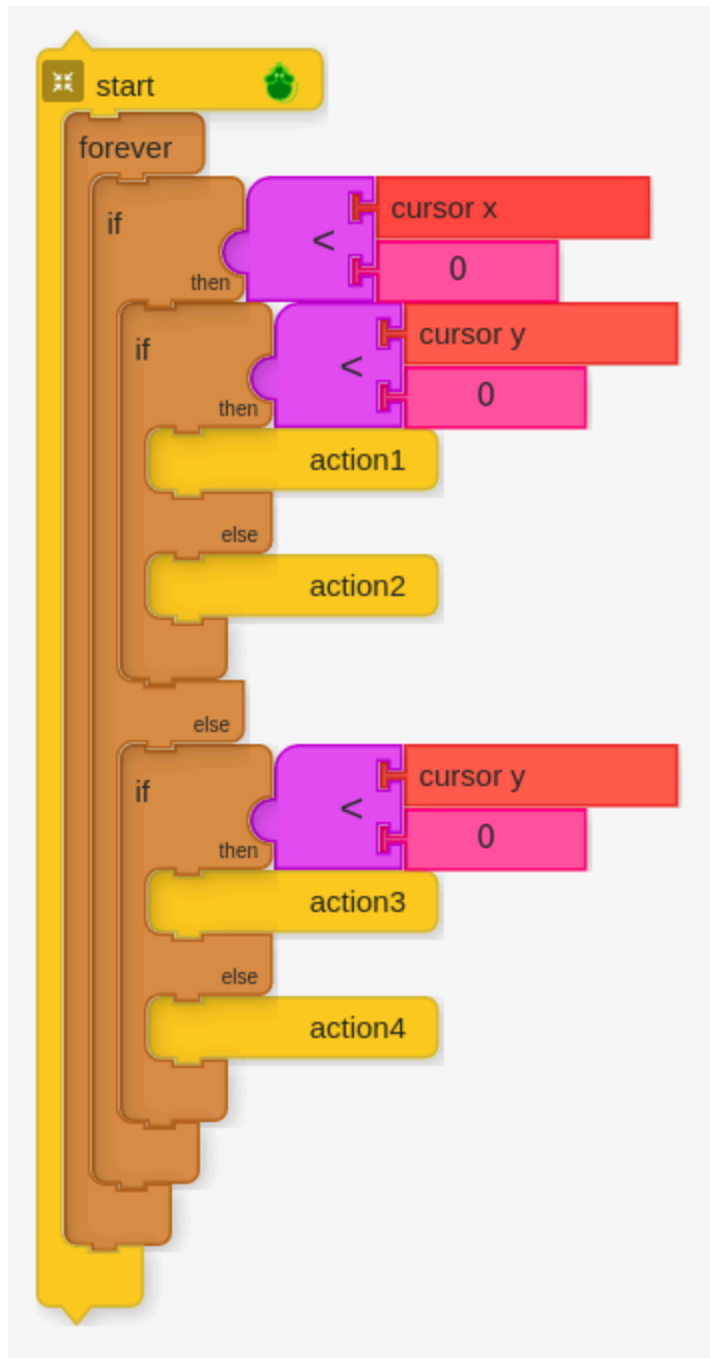
Materials:

- Music Blocks software

Assessment:

- Observe participation.
- Examine the code.
- Do the students use sensor blocks? conditionals? actions?





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