
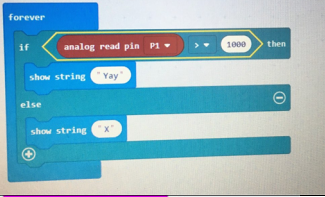

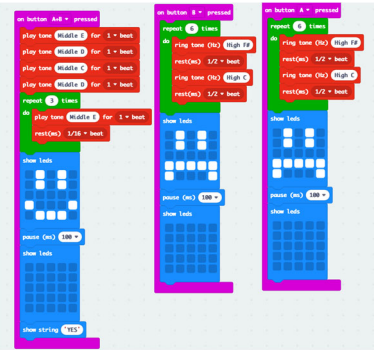
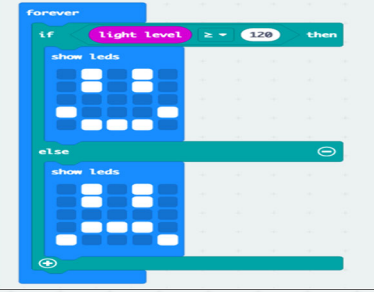
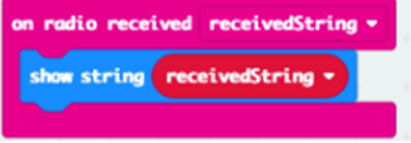


Appendix

Summary Table of Computing Tasks Observed Within Student Projects

Computational Thinking Skill Observed	Photograph of Exemplar Code	Physics Content Engaged
<p>Sequences: Most projects demonstrated sequenced sections of code that sought to engage a series of events.</p>		<ol style="list-style-type: none"> 1. Acceleration/Freefall 2. Circuits 3. Kinematics Newton's Laws
<p>Loops: All puzzles also included code that used loops to ensure that data input was constantly engaged and monitored. The most commonly used loop was forever.</p>		<ol style="list-style-type: none"> 1. Acceleration/Freefall 2. Circuits 3. Kinematics Newton's Laws
<p>Events: Because of the nature of the design task given to students, all coded puzzles engaged events where something would happen.</p>		<ol style="list-style-type: none"> 1. Acceleration/Freefall 2. Circuits 3. Kinematics 4. Newton's Laws
<p>Parallelism: Many projects demonstrated parallelism as students coded various</p>		<ol style="list-style-type: none"> 1. Circuits 2. Kinematics
<p>Conditionals: All puzzles' code included if/then statements as part of their coding. Most if/then statements were linked to sensor readings for input and outputs. If/then statements were most often used to engage sensor input and events desired from those inputs.</p>		<ol style="list-style-type: none"> 1. Acceleration/Freefall 2. Circuits 3. Kinematics 4. Newton's Laws
<p>Operators: Across all groups and projects very little coding or blocks were used to engage operators. Only strings were present in student code files.</p>		<ol style="list-style-type: none"> 1. Acceleration/Freefall 2. Newton's Laws

Data: Across projects, student code was observed to most often engage input data from Micro:bits sensors.

```
forever
  if analog read pin P2 > 500 then
    repeat 4 times
      do
        show string 'Y'
        radio send string 'Y'
```

1. Acceleration/Freefall
2. Circuits
3. Kinematics
4. Newton's Laws