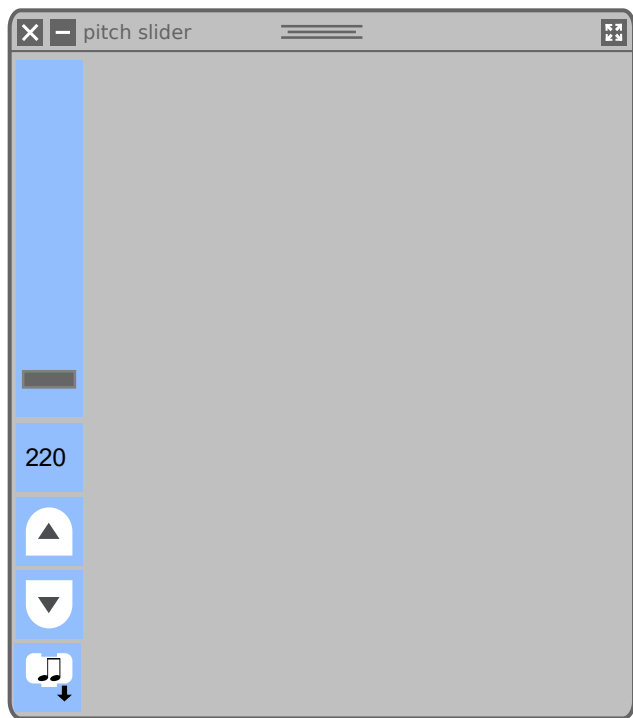
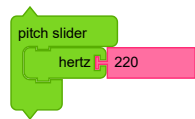


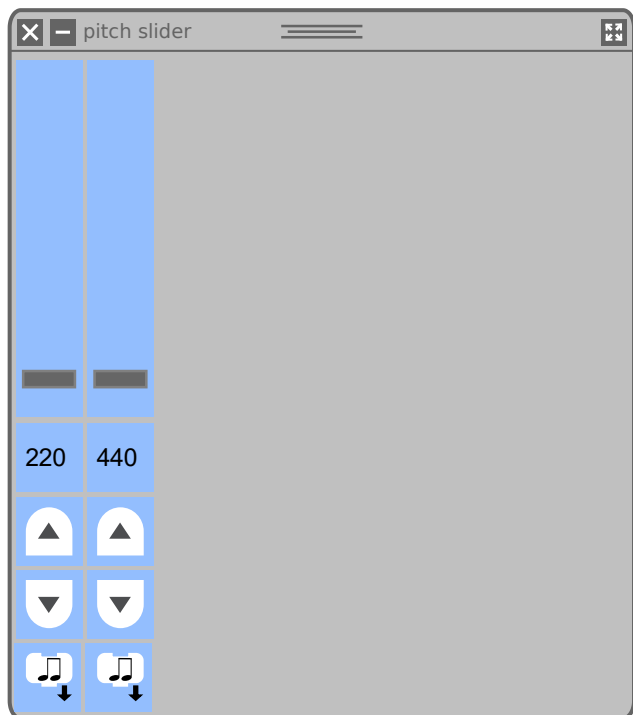
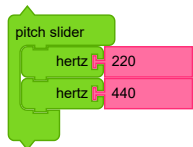
4.8 Generating Arbitrary Pitches

The *Pitch Slider* block is used to launch a widget that is used to generate arbitrary pitches. It differs from the *Pitch Staircase* widget in that it is used to create frequencies that vary continuously within the range of a specified octave.

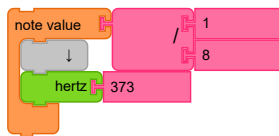
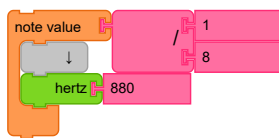
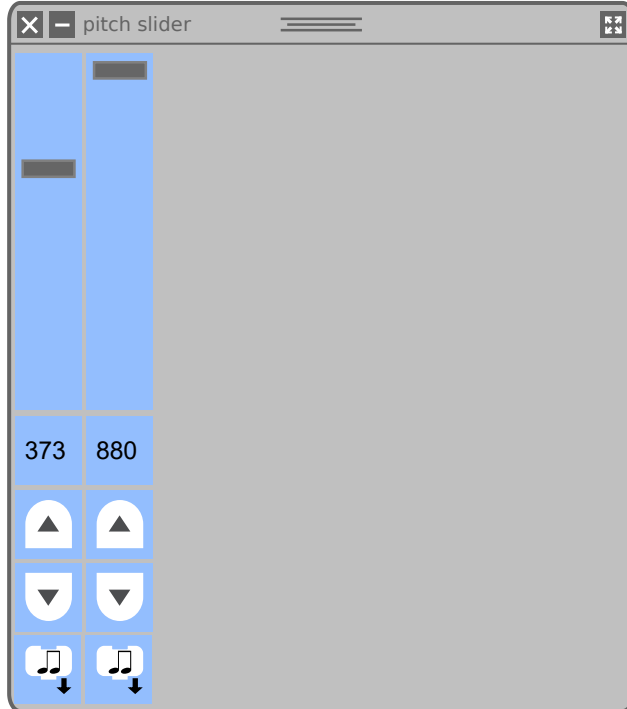
Each *Sine* block contained within the clamp of the *Pitch Slider* block defines the initial pitch for an octave.



When the *Pitch Slider* block is clicked, the *Pitch Slider* widget is initialized. The widget will have one column for each *Sine* block in the clamp. Every column has a slider that can be used to move up or down in frequency, continuously or in intervals of 1/12th of the starting frequency. The mouse is used to move the frequency up and down continuously. Buttons are used for intervals. Arrow keys can also be used to move up and down, or between columns.



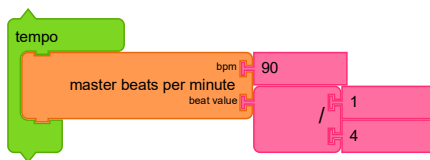
Clicking in a column will extract the corresponding *Note* blocks, for example:



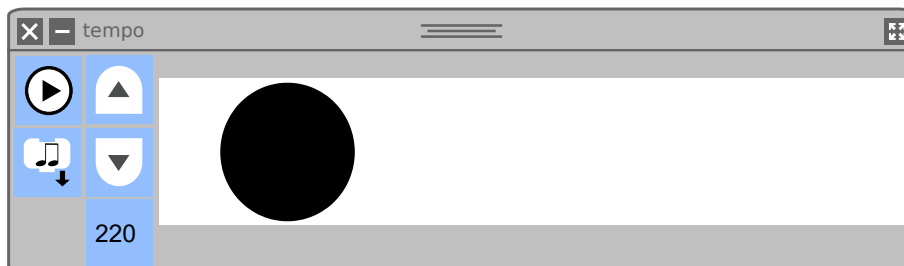
4.9 Changing Tempo

The *Tempo* block is used to launch a widget that enables the user to visualize Tempo, defined in beats per minute (BPM). When the *Tempo* block is clicked, the *Tempo* widget is initialized.

The *Master Beats per Minute* block contained in the clamp of the *Tempo* block sets the initial tempo used by the widget. This determines the speed at which the ball in the widget moves back and forth. If BPM is 60, then it will take one second for the ball to move across the widget. A round-trip would take two seconds.



The top row of the widget holds the *Play/pause* button, the *Speed up* and *Slow down* buttons, and an input field for updating the Tempo.



You can also update the tempo by clicking twice in spaced succession in the widget: the new beats per minute (BPM) is determined as the time between the two clicks. For example, if there is 1/2 second between clicks, the new BPM will be set as 120.