



Scratch Music Machine

Computer Science Concepts

- Using a mouse click & keyboard input to control aspects of the game
- Simple Sequence of code
- Repeat x times loops

Maths Concepts

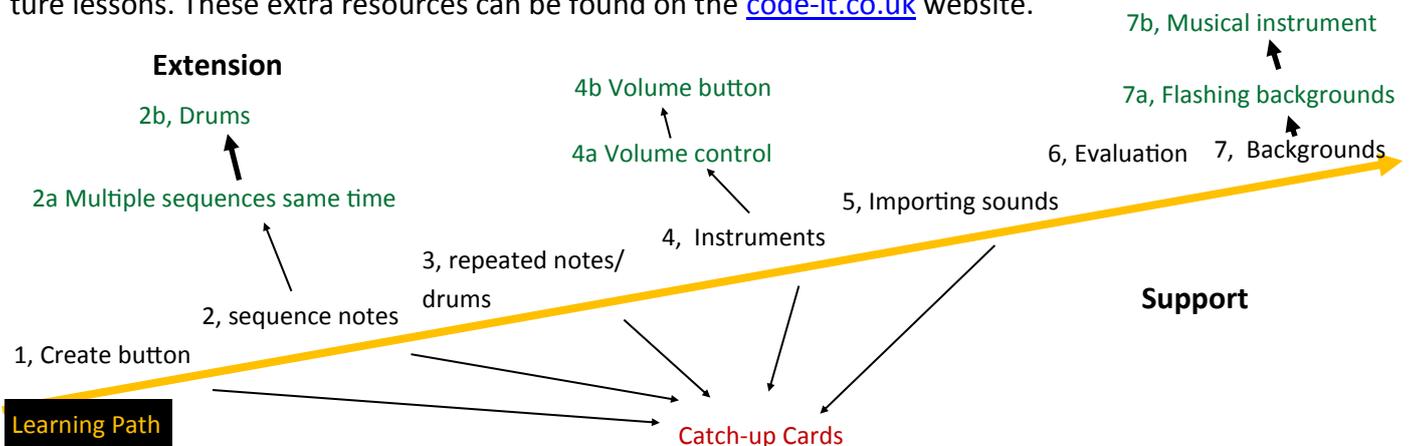
- Decimal fractions
- percentages (extension activity)

Program Aim Designed as a simple introductory program for 7-8 year olds. Pupils create simple buttons which play different sounds when they are clicked with the left mouse button. This follows nicely after the smoking car game.

Computational Thinking

Evaluation– Informally evaluation their code asking if it is fit for purpose

Differentiation and Assessment for Learning This planning should be used alongside the *catch-up cards* supporting SEN pupils and the *extension cards* supporting the more able. At the beginning of each session the *learning intention sheet* is shared and the learning journey expanded through success criteria. Pupils feed their progress back to the teacher through annotating this sheet with smiley faces at the end of each lesson. Teachers can also annotate the sheet to indicate those who need more or less help in future lessons. These extra resources can be found on the code-it.co.uk website.

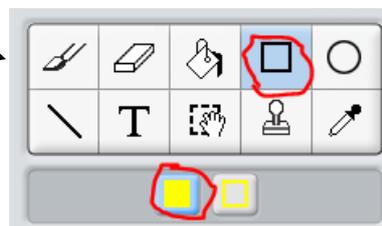


1, Paint a Sound Button

- Right click and delete the cat sprite
- Left click on the Paint new sprite button
- Using the solid rectangle tool or ellipse tool and a bright colour paint a single square
- Click ok to close the paint editor
- Rename your sprite button1 (above costume tab)



Alternate Method You could create a button then duplicate until you have four buttons



Pupils can create as many buttons as they can in a limited time. Once everyone has created at least three move on.



Junior

omputer



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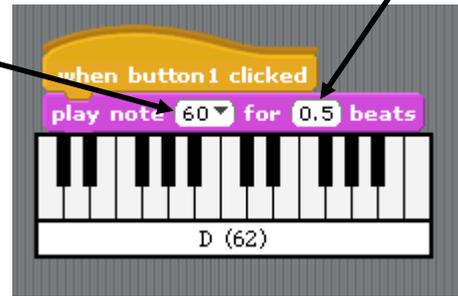
Scratch Music Machine P2

2, Sequence of notes

Show pupils how they can play a sequence of notes. Demonstrate changing the note and how long it plays for. It is a good idea to have a decimal number line in the class.

Give pupils time to experiment with these notes. It is worth restricting younger pupils to any number between 1 and 0.1.

Length of time a note plays for



2a, Multiple sequences at same time

Show pupils how they can have multiple blocks playing at same time.

2b, Drums

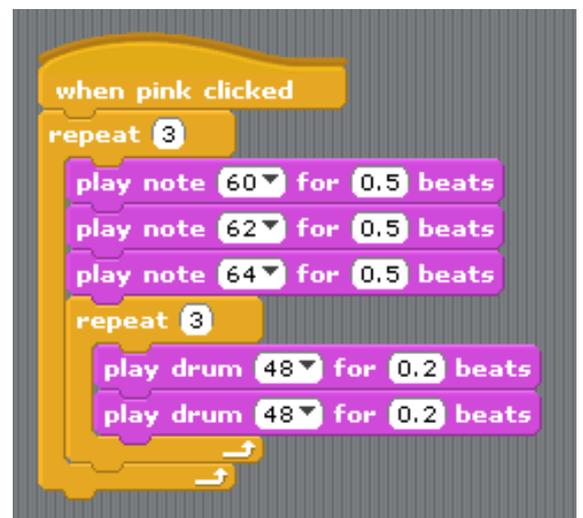
Some pupils may already have found these but it is worth pointing them out if not



3, Repeated notes/drums

Introduce the idea of things being repeated you could use this resource <http://code-it.co.uk/resources/loops.pdf> You could also use dance to help you. Get pupils to show you a few dance moves to a popular song. Create a symbol to represent each one of these. Pupils then create dances for each other using your notation x number of times to repeat. Pupils then dance each others dances following the notation.

Now show pupils how a repeat x loop works Place some notes in a repeat 3 loop and run the code.



Now place some drums inside another repeat loop and place it inside the first loop. Ask pupils to explain to each other how the notes and drums will play. They can make up their own challenges that need the order explaining.



Scratch Music Machine P3

set instrument to 1

- (1) Acoustic Grand
- (2) Bright Acoustic
- (3) Electric Grand
- (4) Honky-Tonk

4, Instruments

Demonstrate how to change the instrument type for the note blocks by clicking on the menu triangle and selecting another instrument.

4a, Volume control

You can only control the volume on a single sprite and the volume will return to a previous volume when you program in the new sprite

4b, Volume button

Can pupils change volume using keys?

```

when Sprite 1 clicked
  set volume to 80 %
  repeat 3
    play note 60 for 0.5 beats
    play note 62 for 0.5 beats
  
```

5, Importing sounds from Music Loops folder

Sounds tab
import



Note you can only select a sound to play once it has been imported and then only for that sprite

Once the sound has been imported it can be used in the play sound code blocks. The play sound **until done** block will play the whole sound through before moving on to the next block. The play sound block will start the sound and then continue with other coding blocks underneath.

```

when button2 clicked
  play sound HumanBeatbox1 until done
  play sound HumanBeatbox2 until done
  
```



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Scratch Music Machine P4

6, Evaluation

In this type of module, where the musical outcome is so subjective, it is not worth feeding back evaluation unless pupils spot errors in each others code. However it is good to see what each other are doing at some point in the module. Setting projects to presentation mode and listening to each others unfinished projects with post it notes on the desk to record any parts that don't work.

7, Background Design

Left click on the stage

Left click on backgrounds

Left click on edit

Choose the rectangle tool

Choose the solid colour

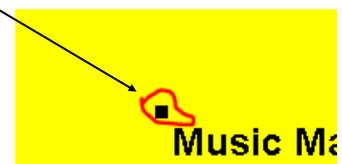
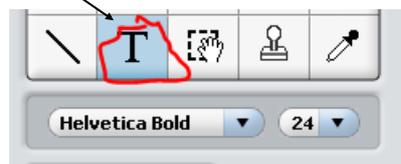
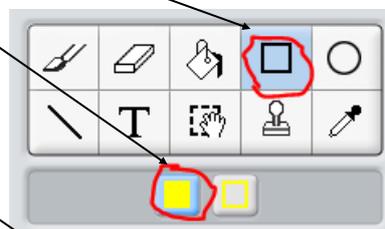
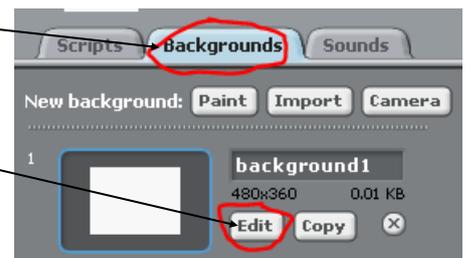
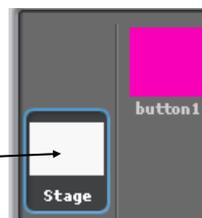
Draw a large rectangle that almost fills the whole screen

Select the Text button

Use the small black square to move the text

Write Music Machine or pupils own equivalent

If you have time they could create a more colourful machine background



5a, Looped Backgrounds

6a, Musical Instrument

Can they create a musical instrument using their own buttons