

🎵 Tutorial: How to Make Music with Scratch Code



1. What is Scratch?

Scratch is a block-based programming language made for beginners. It's perfect for coding interactive stories, games, and even music.

You can access it free at 🖱️ scratch.mit.edu

2. Getting Started

Open Scratch and click Create to start a new project.

Delete the default cat sprite if you like (right-click → delete).

Add a new sprite to represent your instrument (e.g., a drum, piano, or guitar).

Click the Choose a Sprite button → search for "Music" sprites.

Add a backdrop (optional) to make it look like a concert stage.

3. Exploring Sound Blocks

Click the Sound category (pink blocks). Key blocks for music are:

scratch

🎵 play note (60) for (0.5) beats

🎵 set instrument to (piano)

🎵 play drum (1) for (0.25) beats

🎵 change tempo by (20)

🎵 set tempo to (60) bpm

👉 Notes are numbers (60 = middle C, 62 = D, 64 = E, etc.).

4. Playing Your First Note

Go to the Events blocks.

Drag when green flag clicked.

Go to Sound blocks and add:

set instrument to (Piano)

play note (60) for (0.5) beats

Click the green flag ☒ and Scratch plays Middle C.

5. Coding a Short Melody

Let's make a simple C-D-E-C melody:

when green flag clicked

set instrument to (Piano)

play note (60) for (0.5) beats

play note (62) for (0.5) beats

play note (64) for (0.5) beats

play note (60) for (1) beats

🎵 This will play C → D → E → C.

6. Adding Rhythm with Drums

Scratch has built-in drum sounds:

```
when green flag clicked
set tempo to (100) bpm
forever
  play drum (1) for (0.25) beats // Snare
  play drum (2) for (0.25) beats // Bass drum
end
```

👉 This creates a repeating beat.

7. Making a Song Loop

Use the repeat block to play a melody multiple times:

```
when green flag clicked
set instrument to (Piano)
repeat (2)
  play note (60) for (0.5) beats
  play note (62) for (0.5) beats
  play note (64) for (0.5) beats
  play note (67) for (1) beats
end
```

✅ Plays the melody twice in a loop.

8. Creating Multiple Instruments

Add another sprite (like a drum).

Drum sprite code: keeps a beat.

Piano sprite code: plays melody.

This way, your band of sprites plays together.

9. Adding Interaction

You can let users play music like an instrument!

Example: Play notes with keyboard keys:

```
when [space v] key pressed
play note (60) for (0.5) beats
```

when [up arrow v] key pressed
play note (62) for (0.5) beats
when [down arrow v] key pressed
play note (64) for (0.5) beats

Now pressing keys plays different notes. 

10. Tips for Advanced Music

Use broadcast messages so multiple sprites start playing together.

Experiment with different instruments (Piano, Guitar, Organ, Synth).

Record your own sounds in the Sounds tab.

Mix tempo changes to add drama.

Summary

Use Sound blocks to play notes, beats, and instruments.

Build melodies with play note blocks.

Add rhythm with play drum.

Use loops (repeat / forever) to structure your song.

Combine sprites for multiple instruments or interactive music.