

## Make a Card



1. Fold the card in half



2. Glue the backs together



3. Cut along the dashed line

### Music Cards



### Music Cards

Use these cards in this order:

1. Play a Note
2. Play a Chord
3. Sound Effects
4. Make an Instrument
5. Wire the Instrument
6. Program the Pins
7. Attach the micro:bit
8. Set the Stage

[microbit.org/scratch](https://microbit.org/scratch)

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# Make a Card



1. Fold the card in half



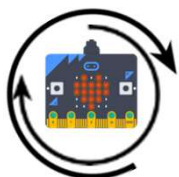
2. Glue the backs together



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## Play a Note

Make your sprite play a sound.



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## Play a Note

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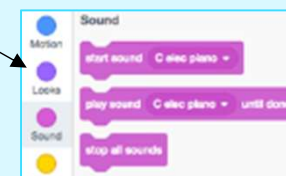
### GET READY



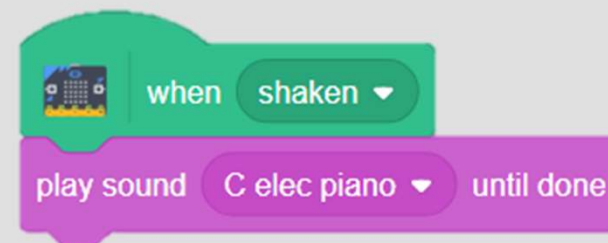
Add a sprite.



Corresponding notes appear in the Sound blocks.



### ADD THIS CODE



### TRY IT

Shake your micro:bit. Does the note play?

**CHALLENGE:** What happens when you add multiple notes?

- ✓ C elec piano
- D elec piano
- E elec piano
- F elec piano
- G elec piano
- A elec piano
- B elec piano
- C2 elec piano

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## Play a Chord

Make your sprite play multiple notes at once.



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## Play a Chord

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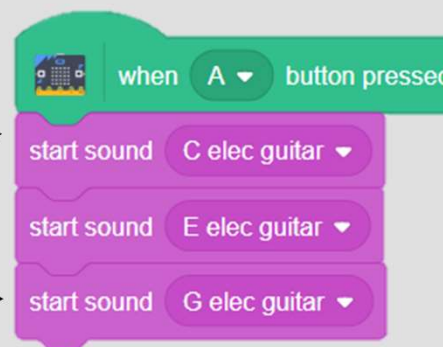
### GET READY

start sound C elec guitar ▾

play sound C elec guitar ▾ until done

Look closely at these two blocks. What is the difference between them?

### ADD THIS CODE

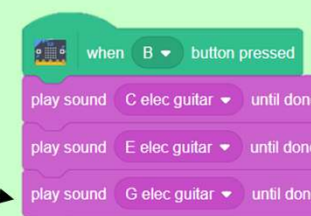


All three notes will play at the same time.

### TRY IT

**CHALLENGE:** Can you make any other chords?

What happens when you use these blocks instead?



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## Sound Effects

Change the pitch and volume of your notes.



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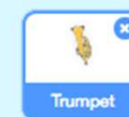
## Sound Effects

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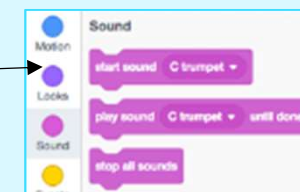
### GET READY



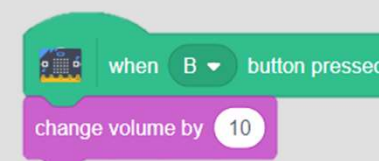
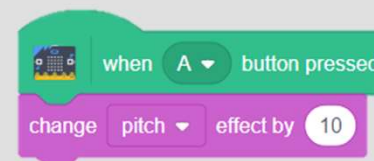
Add a sprite.



Corresponding notes appear in the Sound blocks.



### ADD THIS CODE



### TRY IT

Press the A and B buttons to change the sound.

What other sound effects can you add?

**CHALLENGE:** Can you add a RESET block to make your sounds go back to their original notes?

clear sound effects

## Make a Card



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in half



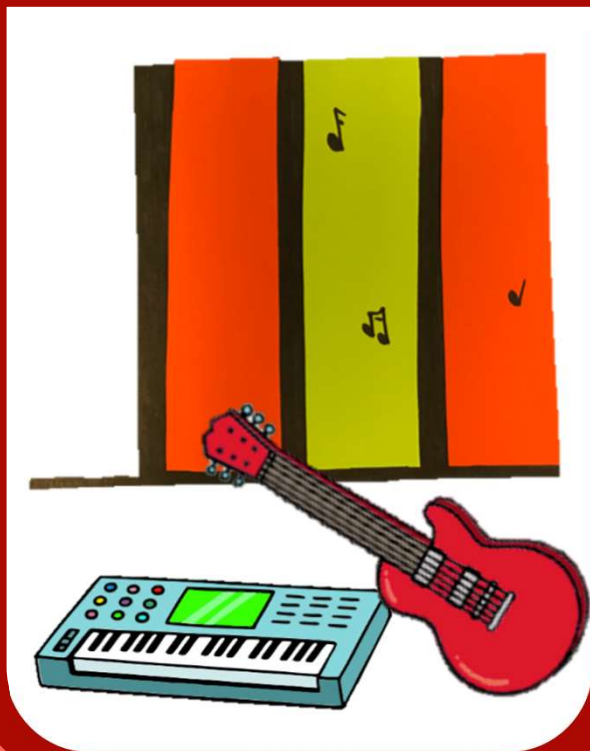
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## Make an Instrument

Create your own instrument using  
cardboard and craft materials and  
play music via your micro:bit.



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## Make an Instrument

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### MATERIALS



Cardboard or  
heavy paper.



Scissors



Markers or  
crayons



Glue stick



Craft  
materials

### PROCEDURE



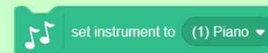
Using cardboard or heavy paper,  
draw your favorite instrument.

Decorate with craft supplies.

**Leave room to add conductive materials.**

The micro:bit will work by creating  
circuits that close and open as you touch  
the keys on your instrument!

### TRY IT



What instruments can you make?

Scratch offers sounds for the following instruments:



- ✓ (1) Piano
- (2) Electric Piano
- (3) Organ
- (4) Guitar
- (5) Electric Guitar
- (6) Bass
- (7) Pizzicato
- (8) Cello
- (9) Trombone
- (10) Clarinet
- (11) Saxophone
- (12) Flute
- 24/33 Warden Chime



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### Wire the Instrument

Use your instrument to create a  
circuit using conductive materials.



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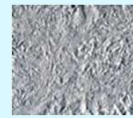
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### Wire the Instrument

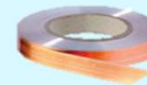
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#### MATERIALS



Tinfoil

or



Copper  
Tape



Scissors



Glue stick



Craft  
materials

#### PROCEDURE



Cut strips of tinfoil, or add copper  
tape to each key or string.

Make sure the metal touches an  
edge on your instrument so that it  
can be connected to the micro:bit.

#### TRY IT

**Decorate.** Make sure to leave your metal areas open!

*Tinfoil and copper tape are both metal, which means they will conduct electricity.  
When your micro:bit is attached and you touch a conductive area, the computer  
will play the note!*

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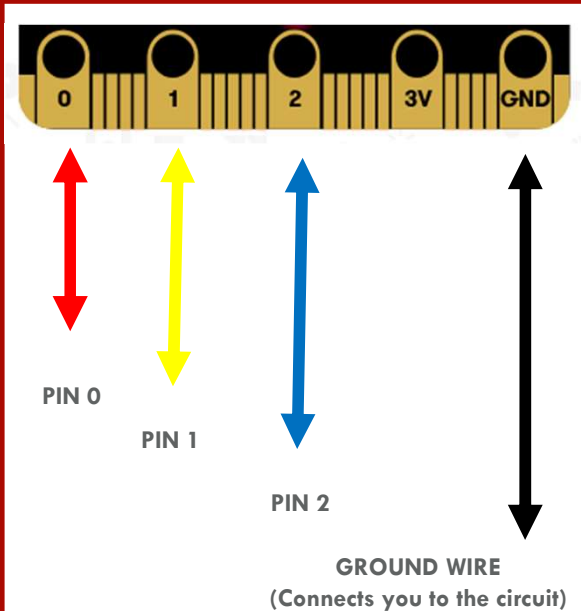
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### Program the Pins

Create codes that will correspond to  
the keys or strings on your  
instrument.



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### Program the Pins

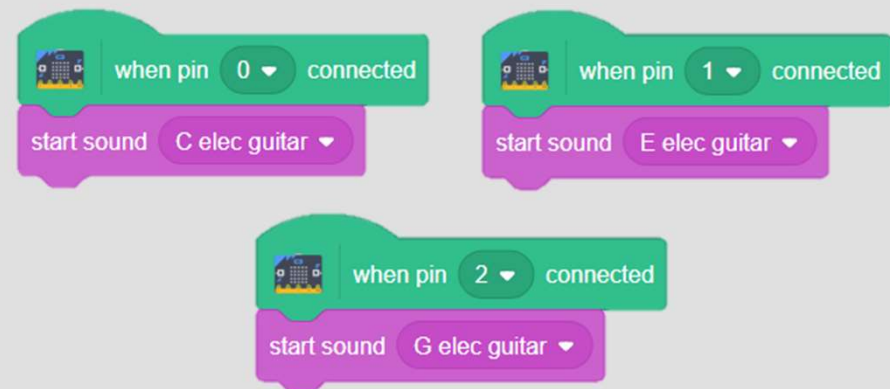
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#### MATERIALS



Alligator Clips

#### ADD THIS CODE



#### TRY IT

Clip your wires onto the pins as shown. Hold the ground wire in one hand and touch the metal end of one of the other wires. Does a note play?

**CHALLENGE:** Can you play multiple notes at once?

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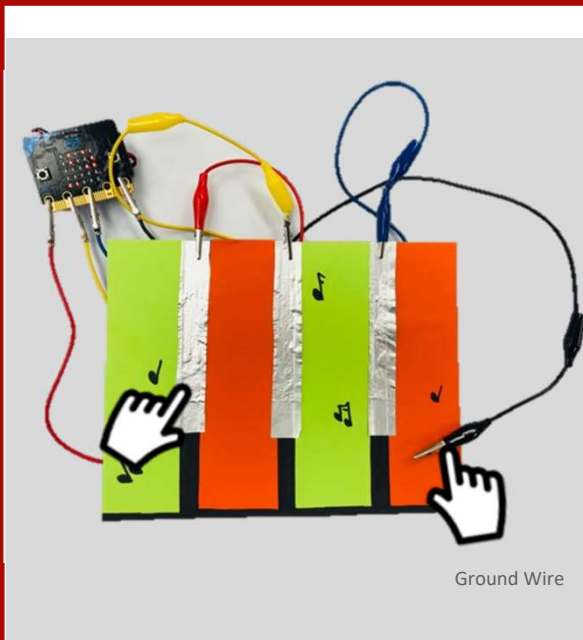
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### Attach the micro:bit

Use wires to connect the micro:bit to  
your instrument.



Ground Wire

### Attach the micro:bit

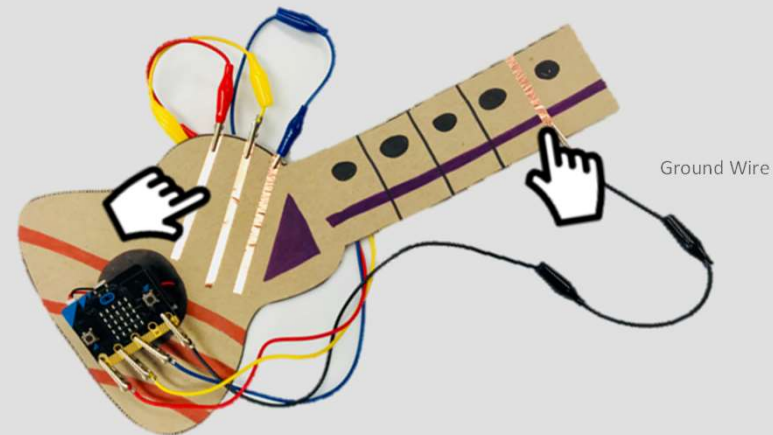
[microbit.org/scratch](https://microbit.org/scratch)

#### GET READY

Attach the end of each alligator clip to the conductive areas of your instrument.

#### PROCEDURE

Either hold the ground wire in your hand, or attach it to a conductive spot on the instrument that you know you will touch.



Ground Wire

#### TRY IT

Rock on! Practice playing music on your instrument!

*When you hold the ground wire and touch a key, you create a completed circuit between you and your computer, causing Scratch to play,*

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## Set the Stage

Make the sprites move on the screen as you play your instrument.



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## Set the Stage

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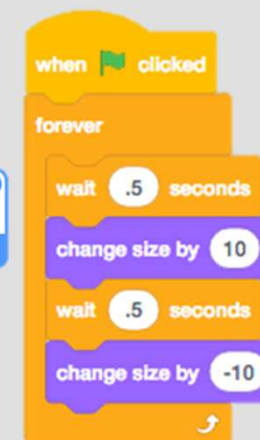
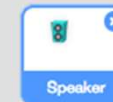
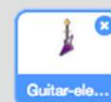
### GET READY



Add sprites and a background.



### ADD THIS CODE



### TRY IT



Put it all together!

Can you play your instrument while the animation plays on the screen?