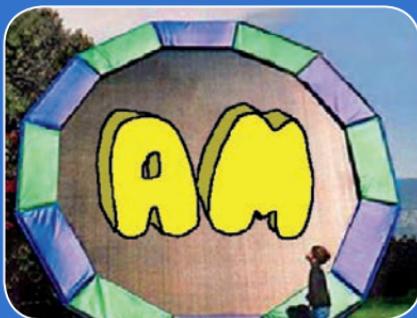


Animate a Name Cards



Animate the letters of your name,
initials, or favorite word.

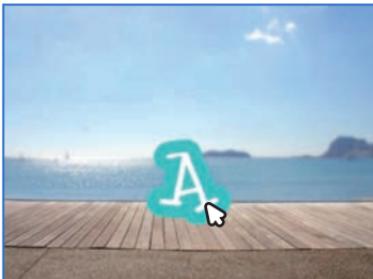
Animate a Name Cards

Try these cards in any order:

- **Color Clicker**
- **Spin**
- **Play a Sound**
- **Dancing Letter**
- **Change Size**
- **Press a Key**
- **Glide Around**

Color Clicker

Make a letter change color
when you click it.



Color Clicker

scratch.mit.edu



GET READY



Choose a letter from the Sprite Library.



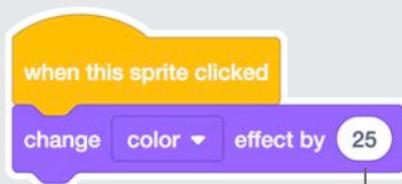
Choose a backdrop.



Food Fashion Letters 

To see just the letter sprites, click the Letters category at the top of the Sprite Library.

ADD THIS CODE



Try different numbers.

TRY IT

Click your letter.



Spin



Make a letter turn when you click it.





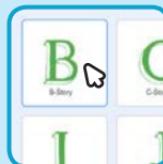
GET READY



Go to the
Sprite Library.

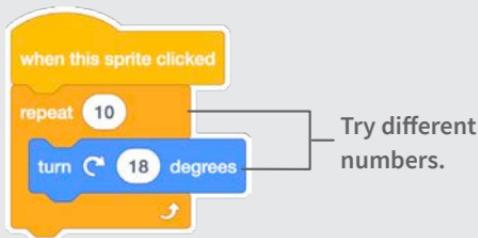


Click the Letters category



Choose a letter sprite.

ADD THIS CODE



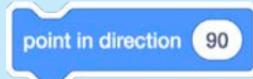
TRY IT

Click your letter.



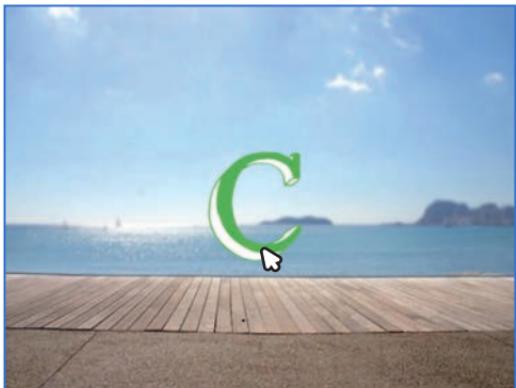
TIP

Click this block to reset the sprite's direction.



Play a Sound

Click a letter to play a sound.



Play a Sound

scratch.mit.edu



GET READY



Choose a backdrop.



Boardwalk



Click the Sounds tab.



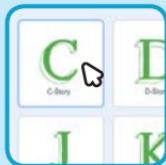
Choose a sound.



Go to the
Sprite Library.



Click the Letters category



Choose a letter sprite.

ADD THIS CODE



Click the Code tab.



Choose a sound
from the menu.

TRY IT

Click your letter.



Dancing Letter

Make a letter move to the beat.



Dancing Letter

scratch.mit.edu



GET READY



Choose a backdrop.



Stage



Choose a letter from
the Sprite Library.



Click the Extensions button
(at the bottom left).



Then click Music to
add the music blocks.

ADD THIS CODE



Type a minus sign to —
move backwards.

Choose a different
drum from the menu.

TRY IT

Click your letter.



Change Size



Make a letter get bigger and then smaller.



Change Size

scratch.mit.edu



GET READY



Go to the
Sprite Library.

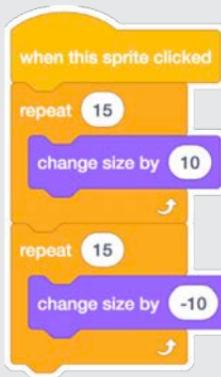


Click the Letters category



Choose a letter sprite.

ADD THIS CODE



Type a minus sign
to get smaller.

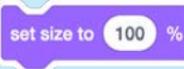
TRY IT

Click your letter.



TIP

Click this block to reset the size.



Press a Key

Press a key to make your letter change.



Press a Key

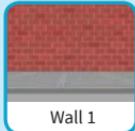
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GET READY



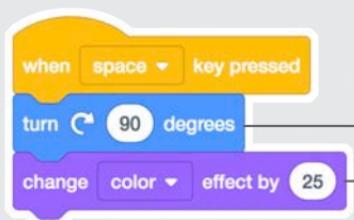
Choose a backdrop.



Choose a letter from
the Sprite Library.



ADD THIS CODE



Try different numbers.

TRY IT



Press the **space** key.

TIP



You can choose a different key from the menu.
Then press that key!

Glide Around

Make a letter glide smoothly
from place to place.



Glide Around

scratch.mit.edu



GET READY



Choose a backdrop.



Choose a letter from
the Sprite Library.



ADD THIS CODE



TRY IT

Click your letter to start.



TIP



When you move a sprite, you can see the numbers for x and y update.

x is the position from left to right.
y is the position up and down.

Animate a Character Cards



Bring characters to life
with animation.



Animate a Character Cards

Try these cards in any order:

- Move with Arrow Keys
- Make a Character Jump
- Switch Poses
- Glide from Point to Point
- Walking Animation
- Flying Animation
- Talking Animation
- Draw an Animation

Move with Arrow Keys

Use the arrow keys to move your character around.



Move with Arrow Keys

scratch.mit.edu

GET READY



Choose a backdrop.



Soccer 2



Choose a character.

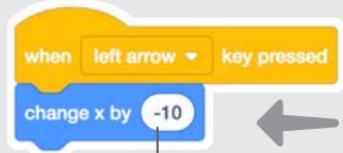
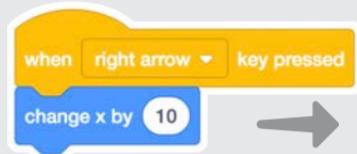


Pico Walking

ADD THIS CODE

Change x

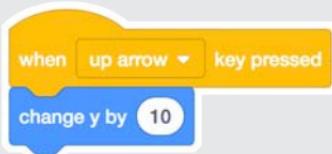
Move your character *side to side*.



Type a minus sign to move *left*.

Change y

Move your character *up and down*.



Type a minus sign to move *down*.

TRY IT



Press the arrow keys on your keyboard to move your character around.

Make a Character Jump

Press a key to jump up and down.



Make a Character Jump

scratch.mit.edu

GET READY



Choose a backdrop.



Choose a character.



Giga Walking

ADD THIS CODE



Giga Walking



Type how high to jump.

Type a minus sign to go back down.

TRY IT



Press the space key on your keyboard.

Switch Poses

Animate a character
when you press a key.



Switch Poses

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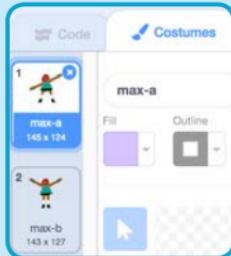
GET READY

Choose a character with multiple costumes, like Max.



Scroll over sprites in the Sprite Library to see their different costumes.

Costumes

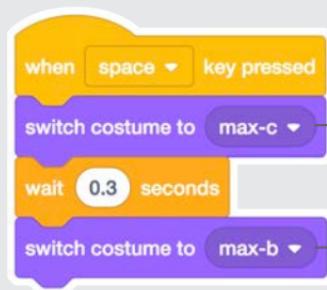


Click the Costumes tab to view your sprite's other costumes.

ADD THIS CODE

Code

Click the Code tab.



Choose a costume.

Choose a different costume.

TRY IT



Press the space key on your keyboard.

Glide from Point to Point

Make a sprite glide from point to point.



Glide from Point to Point

scratch.mit.edu

GET READY



Choose a backdrop.

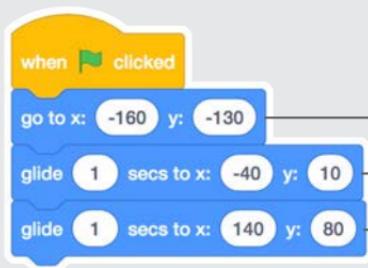


Choose a character.



Rocketship

ADD THIS CODE



Set the starting point.

Set another point to glide to.

Set the end point.

TRY IT

Click the green flag to start.



TIP



When you drag a sprite, its x and y position will update in the blocks palette.

Walking Animation

Animate a character walking or running.



Walking Animation

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GET READY



Choose a backdrop.



Jungle

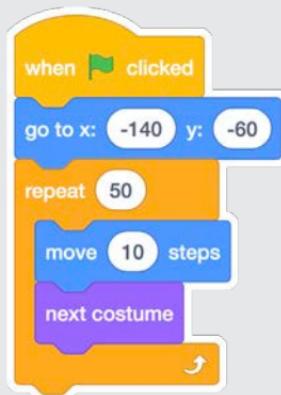


Choose a walking or running sprite.



Unicorn Running

ADD THIS CODE



TRY IT



Click the green flag to start.

TIP



If you want to slow down the animation, try adding a wait block inside the repeat block.

Flying Animation

Have a character flap its wings as it moves across the stage.



Flying Animation

scratch.mit.edu



GET READY



Choose a
backdrop.



Canyon



Choose Parrot, or
another flying sprite.



Parrot

ADD THIS CODE

Glide across the screen

```
when green flag clicked
  go to x: -170 y: 120
  glide 1 secs to x: 150 y: 50
```

Set the starting point.

Set the end point.

Flap the wings

```
when green flag clicked
  repeat (5)
    switch costume to [parrot-a v]
    wait (0.1) seconds
    switch costume to [parrot-b v]
    wait (0.1) seconds
```

Choose one costume.

Choose another.

TRY IT

Click the green flag to start.



Talking Animation

Make a character talk.



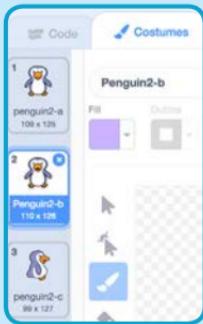
Talking Animation

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GET READY



Choose Penguin 2

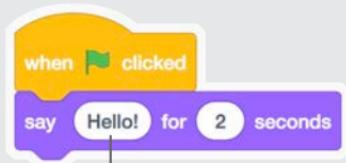


Click the Costumes tab to view the penguin's other costumes.

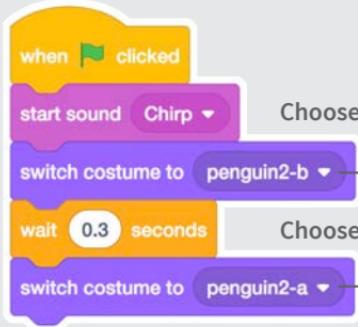
ADD THIS CODE



Click the Code tab.



Type what you want your character to say.



Choose one costume.

Choose another.

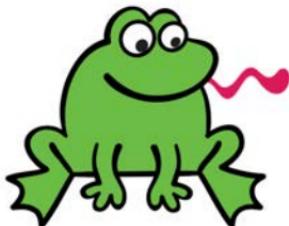
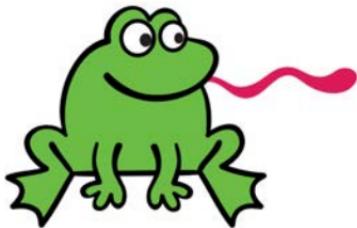
TRY IT

Click the green flag to start.



Draw an Animation

Edit a sprite's costumes to
create your own animation.



Draw an Animation

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GET READY



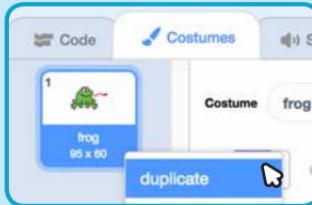
Choose a character.



Frog

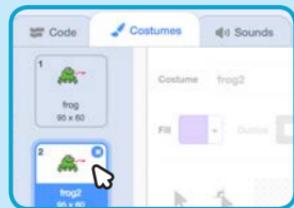
Costumes

Go to the Costumes tab.



Right-click on a costume to duplicate it.
(On Mac control + click)

Now you should have two identical costumes.

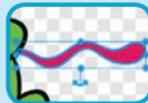


Click a costume to select and edit it.

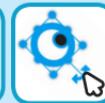
Click the Select tool.



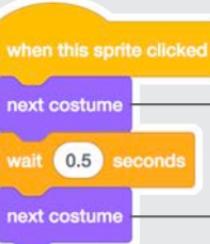
Select a part of the costume to squeeze or stretch it.



Drag the anchor to rotate an object you've selected.



ADD THIS CODE



Use the **next costume** block to animate your character.

TRY IT



Click the green flag to start.

Make Music Cards



Choose instruments, add sounds,
and press keys to play music.

Make Music Cards

Try these cards in any order:

- Play a Drum
- Make a Rhythm
- Animate a Drum
- Make a Melody
- Play a Chord
- Surprise Song
- Beatbox Sounds
- Record Sounds
- Play a Song

Play a Drum

Press a key to make a drum sound.



Play a Drum

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GET READY



Choose a backdrop.



Choose a drum.



ADD THIS CODE



Select the sound you want from the menu.

TRY IT



Press the **space** key on your keyboard.

Make a Rhythm

Play a loop of repeating drum sounds.



Make a Rhythm

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GET READY



Choose a backdrop.



Choose a drum from the Music category.



Drum Tabla

Dance

Music 

Sport

To see just the music sprites, click the Music category at the top of the Sprite Library.

ADD THIS CODE



Type how many times you want to repeat.

Try different numbers to change the rhythm.

TRY IT



Press the space key on your keyboard.

Animate a Drum

Switch between costumes to animate.



♪)

Animate a Drum

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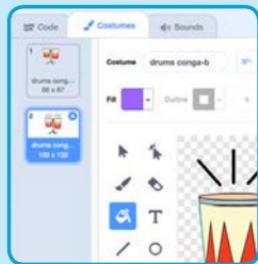
GET READY



Choose a drum.

Costumes

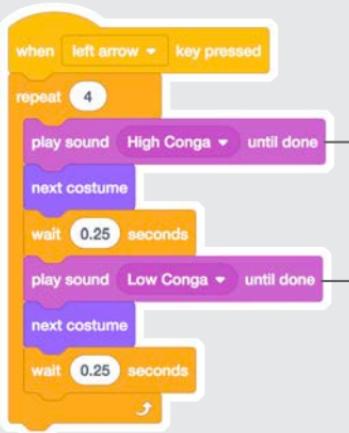
Click the Costumes tab to see the costumes.



ADD THIS CODE

Code

Click the Code tab.



Choose a sound from the menu.

TRY IT



Press the **left arrow** key.

Make a Melody

Play a series of notes.



Make a Melody

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GET READY



Choose a backdrop.



Theater 2



Choose the saxophone or another instrument.



Saxophone

ADD THIS CODE



Choose **up arrow** (or another key).

Choose different sounds.

TRY IT



Press the **up arrow** key.

Play a Chord

Play more than one sound at a time to make a chord.



Play a Chord

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GET READY



Choose a backdrop.



Theater

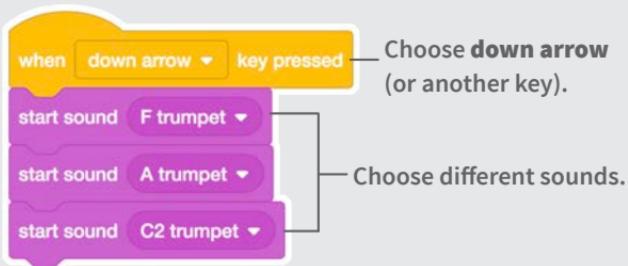


Choose an instrument,
like Trumpet.



Trumpet

ADD THIS CODE



TIP

Use the block to make sounds play at the same time.

Use to play sounds one after another.

TRY IT



Press the **down arrow**

Surprise Song

Play a random sound from a list of sounds.



Surprise Song

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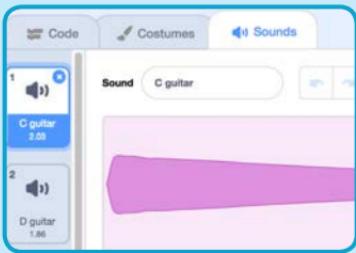
GET READY

Choose an instrument,
like guitar.



Sounds

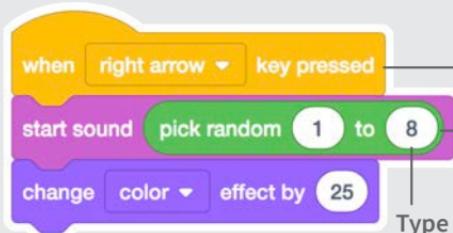
Click the Sounds tab to see all
the sounds for your instrument.



ADD THIS CODE

Code

Click the tab.



Choose **right arrow**.

Insert a **pick random** block.

Type the number of sounds
in your instrument.

TRY IT



Press the **right arrow** key.

Beatbox Sounds

Play a series of vocal sounds.



Beatbox Sounds

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GET READY



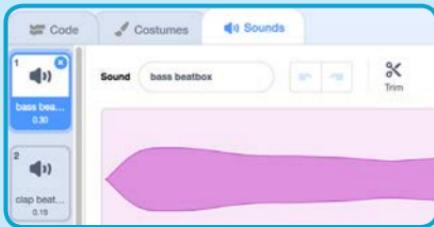
Choose the Microphone sprite.



Microphone

Sounds

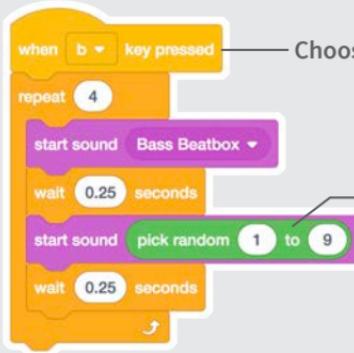
Click the Sounds tab to see all the beatbox sounds.



ADD THIS CODE

Code

Click the Code tab.



Choose **b** (or another key).

Insert a **pick random** block.

TRY IT



Press the **B** key to start.

Record Sounds

Make your own sounds to play.



Record Sounds

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GET READY



Choose a backdrop.



Beach Malibu



Choose any sprite.

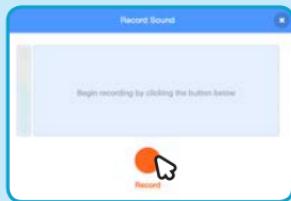


Beachball



Click the Sounds tab.

Then choose Record from the pop-up menu.

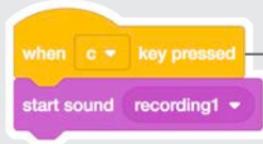


Click the Record button to record a short sound.

ADD THIS CODE



Click the Code tab.



Choose c (or another key).

TRY IT



Press the C key to start.

Play a Song

Add a music loop as background music.



Play a Song

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GET READY



Choose a sprite,
like Speaker.



Click the Sounds tab.



Choose a sound from
the Loops category,
like Drum Jam.

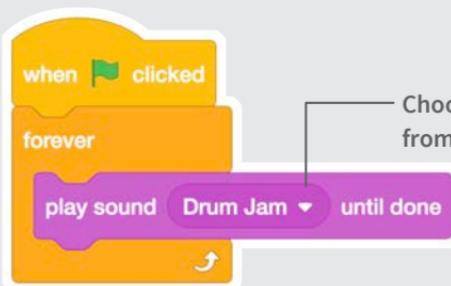


To see just the music loops, click the **Loops** category at the top of the Sounds Library.

ADD THIS CODE



Click the Code tab.



Choose your sound
from the menu.

TRY IT

Click the green flag to start.



Create a Story Cards



Choose characters, add conversation,
and bring your story to life.

Create a Story Cards

Start with the first card, then try the other cards in any order:

- **Start a Story**
- **Start a Conversation**
- **Switch Backdrops**
- **Click a Character**
- **Add Your Voice**
- **Glide to a Spot**
- **Walk onto the Stage**
- **Respond to a Character**
- **Add a Scene**

Start a Story

Set the scene and have a character say something.



Start a Story

GET READY



Choose a backdrop.



Witch House

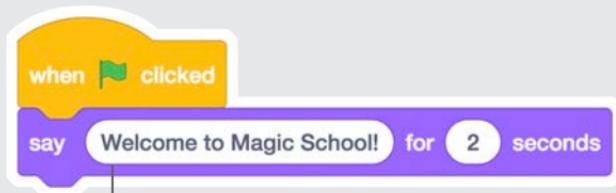


Choose a character.



Wizard

ADD THIS CODE



Type what you want your character to say.

TRY IT

Click the green flag to start.



Start a Conversation

Make two characters talk to each other.



Start a Conversation

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GET READY



Choose two characters,
like Witch and Elf.



Witch



Elf

ADD THIS CODE

Click the thumbnail for each character, then add its code.



Type what you want
each character to say.



TIP



To change the direction a character is facing, click the Costumes tab, then click Flip Horizontal.



Switch Backdrops

Change from one backdrop to another.



Switch Backdrops

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GET READY



Choose a character.



Elf



Choose two backdrops.



Witch House

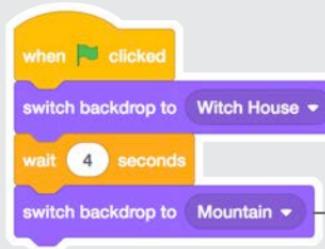


Mountain

ADD THIS CODE



Elf



Choose the backdrop you want to start with.

Choose the second backdrop.

TRY IT

Click the green flag to start.



Click a Character

Make your story interactive.



Click a Character

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GET READY



Choose a backdrop.



Mountain

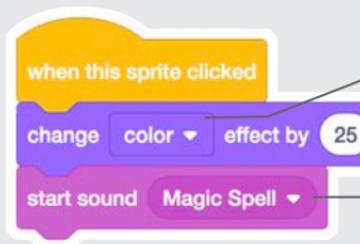


Choose a character.



Unicorn

ADD THIS CODE

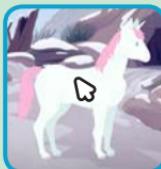


You can choose different effects.

Select a sound from the menu.

TRY IT

Click your character.



Add Your Voice

Record your voice to make a character talk.



Add Your Voice

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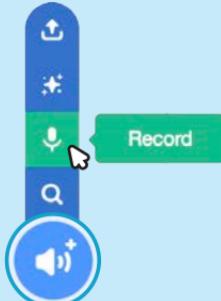
GET READY



Choose a sprite.

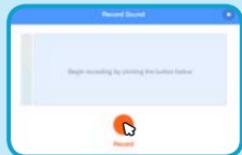


Click the Sounds tab.



Choose Record from the pop-up menu.

Click Record.

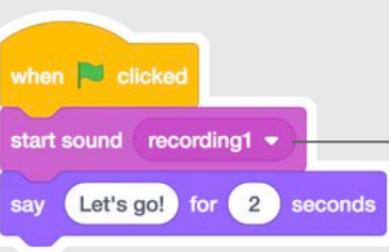


When you're done,
click Save.

ADD THIS CODE



Princess



Select your recording
from the menu.

TRY IT

Click the green flag to start.



Glide to a Spot

Make a character move across the Stage.



Glide to a Spot

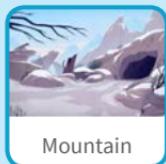
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GET READY



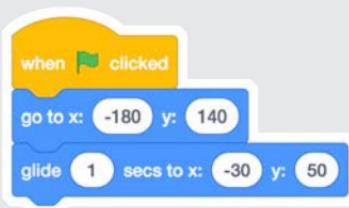
Choose a backdrop.



Choose a character.



ADD THIS CODE



TRY IT

Click the green flag to start.



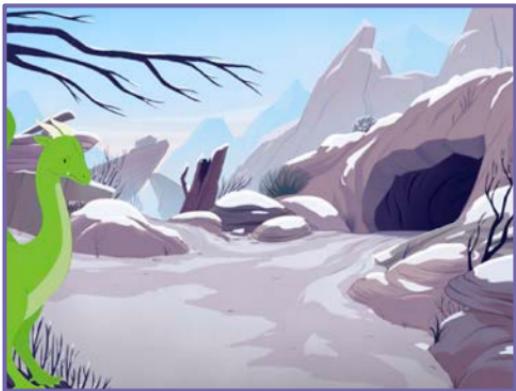
TIP



When you drag a sprite, its **x** and **y** position will update in the blocks palette.

Walk onto the Stage

Have a character enter the scene.



Walk onto the Stage

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GET READY



Choose a backdrop.



Mountain

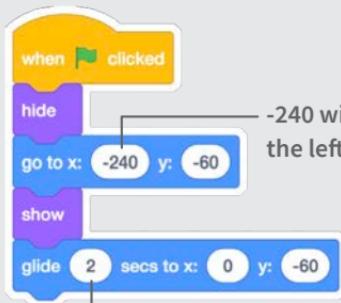


Choose a character.



Dragon

ADD THIS CODE

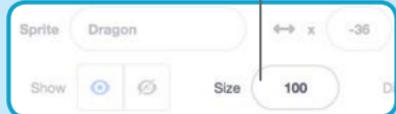


-240 will place your sprite at the left edge of the Stage.

Change this number to glide faster or slower.

TIP

Change the size of a sprite by typing a smaller or larger number.



Respond to a Character

Coordinate a conversation so that one character talks after another.



Respond to a Character

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GET READY



Choose a backdrop.



Mountain



Choose two characters.



Goblin



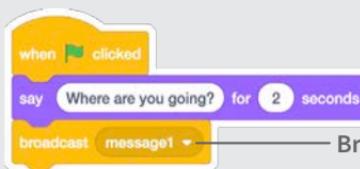
Princess

ADD THIS CODE

Click the thumbnail for each character, then add its code.



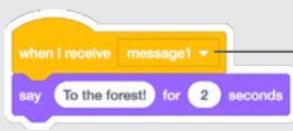
Goblin



Broadcast a message.

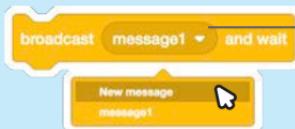


Princess



Tell this character what to do when it receives the broadcast.

TIP



You can click the drop-down menu to add a new message.

Add a Scene

Create multiple scenes with different backdrops and characters.



Add a Scene

scratch.mit.edu

GET READY



Choose a two backdrops.



Witch House



Mountain

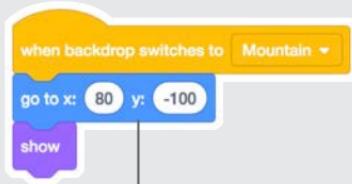
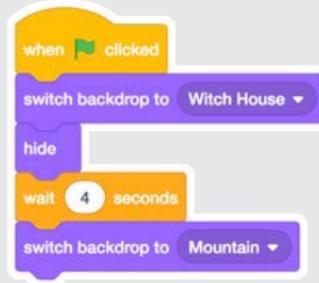


Choose a character.



Fox

ADD THIS CODE



Add a go to block to place your character where you want it.

TRY IT

Click the green flag to start.



Chase Game Cards



Make a game where you chase a character to score points.

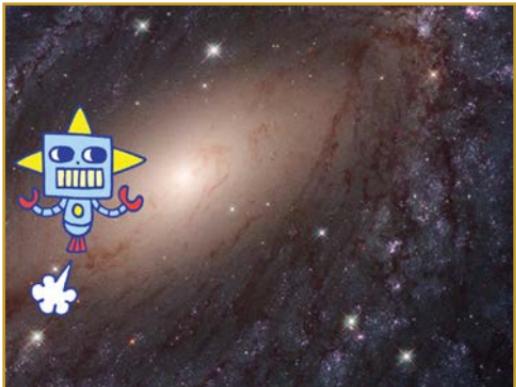
Chase Game Cards

Use these cards in this order:

- 1. Move Left and Right**
- 2. Move Up and Down**
- 3. Chase a Star**
- 4. Play a Sound**
- 5. Add a Score**
- 6. Level Up!**
- 7. Victory Message**

Move Left and Right

Press arrow keys to move left and right.



Move Left and Right

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GET READY



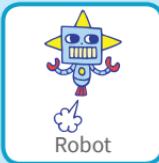
Choose a backdrop.



Galaxy



Choose a character.



Robot

ADD THIS CODE



Choose right arrow.



Choose left arrow.

Type a minus sign to move left.

TRY IT

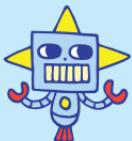
Press the arrow keys.



TIP

x is the position on the Stage from left to right.

Type a negative number
to move to the left.

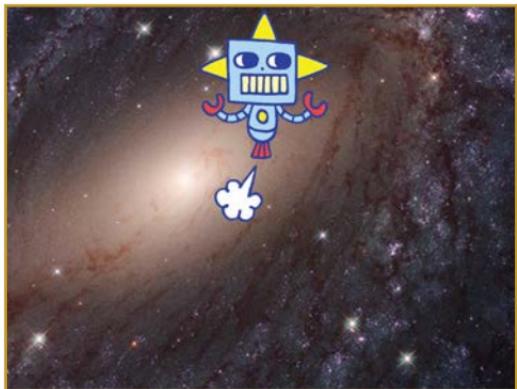


Type a positive number
to move to the right.



Move Up and Down

Press arrow keys to move up and down.

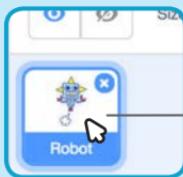


Move Up and Down

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GET READY



Click your character
to select it.

ADD THIS CODE



Choose up arrow.



Choose down arrow.

Use change y to move up.

Type a minus sign to move down.

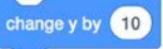
TRY IT

Press the arrow keys.



TIP

y is the position on the Stage from up to down.



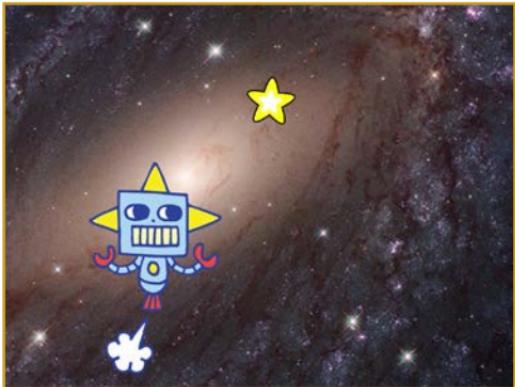
Type a positive number to move up.



Type a negative number to move down.

Chase a Star

Add a sprite to chase.



Chase a Star

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GET READY



Choose a sprite to chase, like Star.



Star

ADD THIS CODE



Type a smaller number (like 0.5) to make it glide faster.

TRY IT

Click the green flag to start.



Click the stop sign to stop.

Play a Sound

Play a sound when your character touches the star.

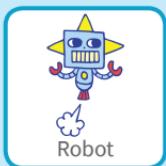


Play a Sound

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GET READY



Click to select
the Robot.



Click the Sounds tab.

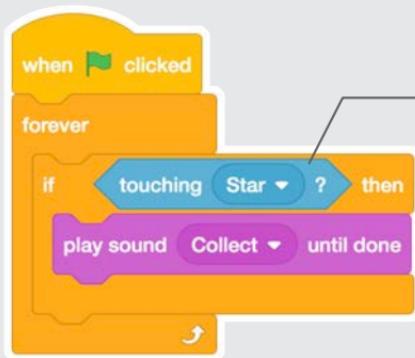


Choose a sound from the
Sounds Library, like Collect.

ADD THIS CODE



Click the Code tab.



Insert the **touching**
block into the
if then block.



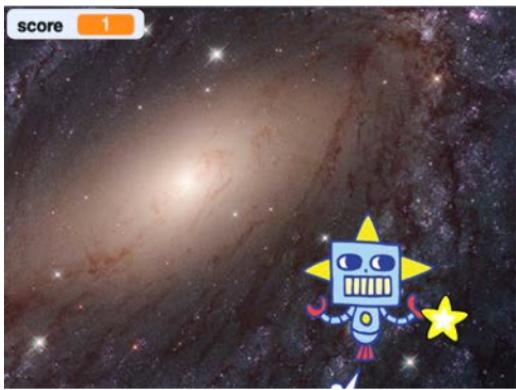
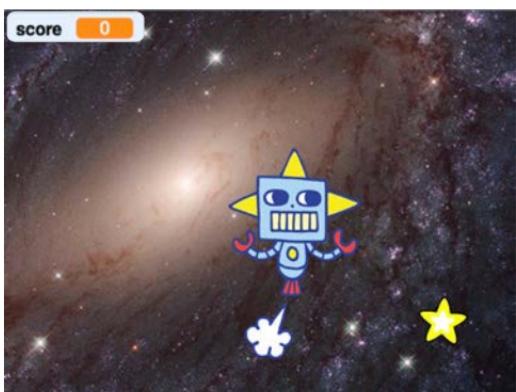
TRY IT

Click the green flag to start.



Add a Score

Score points when you touch the star.



Add a Score

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GET READY

Choose **Variables**



Click the **Make a Variable** button.

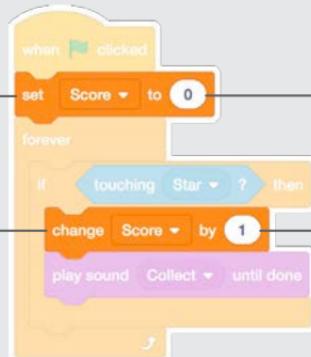


Name this variable **Score** and then click **OK**.

ADD THIS BLOCK



Select **Score** from the menu.



Add this block to reset the score.

Add this block to increase the score.

TIP



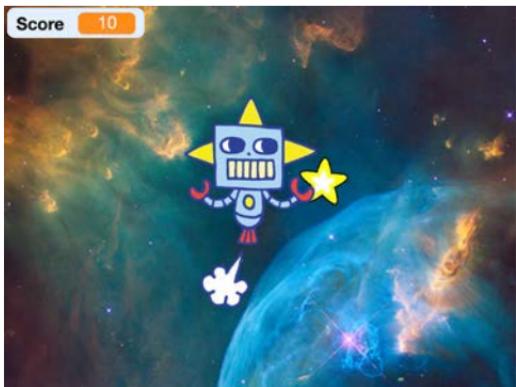
Use the **set variable** block to reset the score to zero.



Use the **change variable** block to increase the score.

Level Up!

Go to the next level.



Level Up!

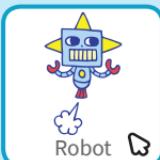
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GET READY



Choose a second backdrop, like Nebula.

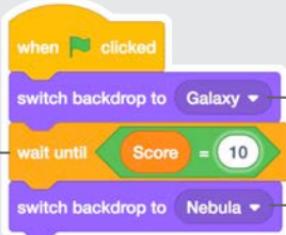


Select the Robot Sprite

ADD THIS CODE



Insert the **Score** block into the **equals** block from the Operators category.



Choose your first backdrop.

Choose the backdrop to switch to.



Choose a sound.

TRY IT

Click the green flag to start the game!



Victory Message

Show a message when you go to
the next level.

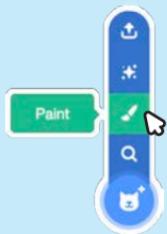


Victory Message

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GET READY



Click the paintbrush to draw a new sprite.

Use the **Text** tool to write a message, like “Level Up!”

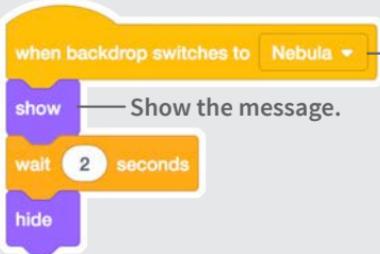


You can change the font color, size, and style.

ADD THIS CODE



Hide the message at the beginning.



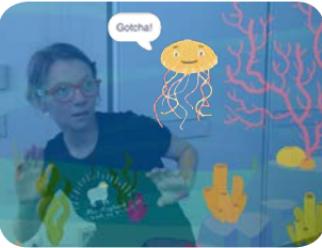
Choose the backdrop for the next level.

TRY IT

Click the green flag to play your game.—



Video Sensing Cards



Interact with a project using
video sensing.

Video Sensing Cards

Try these cards in any order:

- 1 Pet the Cat**
- 2 Change Color**
- 3 Animate**
- 4 Pop a Balloon**
- 5 Keep Away Game**
- 6 Move a Sprite**

Pet the Cat



Make the cat meow when you touch it.



Pet the Cat

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GET READY

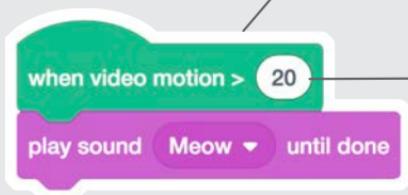
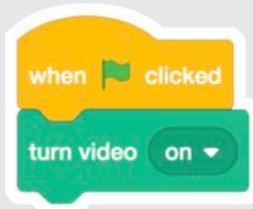


Click the **Add an Extension** button (on the bottom of the screen).



Choose **Video Sensing** to add the video blocks.

ADD THIS CODE



Senses motion on a sprite.

Type a larger number to make it less sensitive to movement.

TRY IT

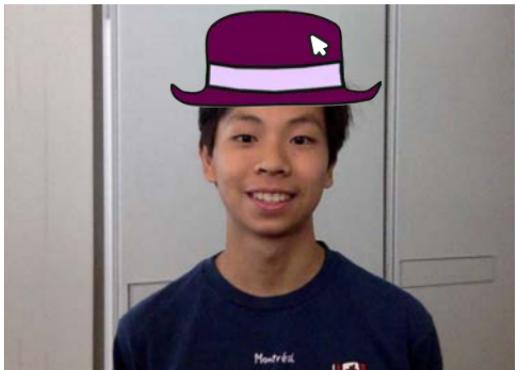
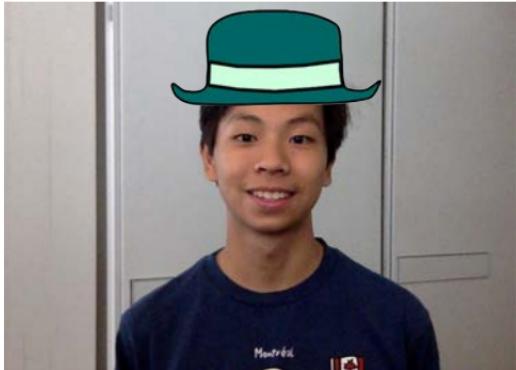
Click the green flag to start.



Move your hand to pet the cat.

Change Color

Click on a sprite to change the color of your fashion.

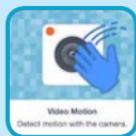


Change Color

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GET READY

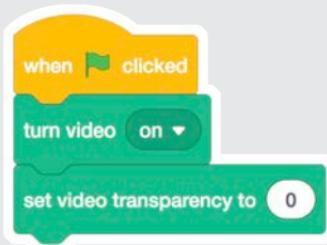


Click the **Add an Extension** button,
then choose **Video Sensing**.

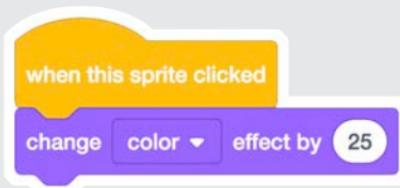


Choose a sprite, like Hat.

ADD THIS CODE



Type **0** to make the video
less transparent.



TRY IT

Click the green flag to start.



Click the hat to change its color.

Animate



Move around to bring a sprite to life.



Animate

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GET READY



Click the **Add an Extension** button,
then choose **Video Sensing**.



Choose a sprite, like Dragon.

ADD THIS CODE



Choose one costume.

Choose another costume.

TRY IT

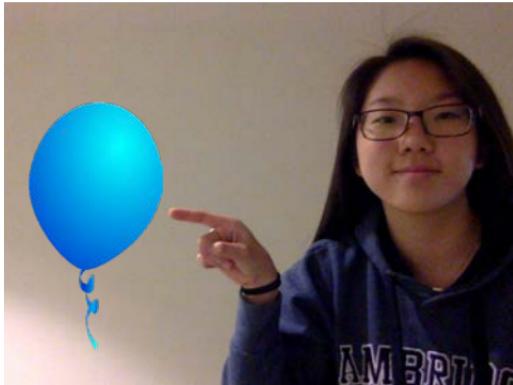
Click the green flag to start.



Move around to animate the dragon.

Pop a Balloon

Use your finger to pop a balloon.

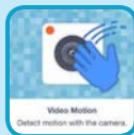


Pop a Balloon

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GET READY

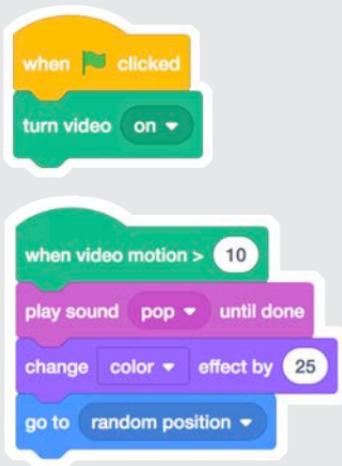


Click the **Add an Extension** button,
then choose **Video Sensing**.



Choose a sprite, like Balloon.

ADD THIS CODE



TRY IT

Click the green flag to start.

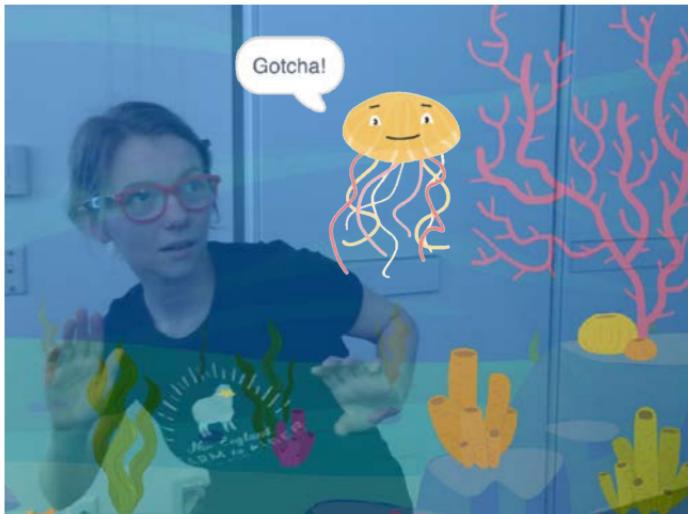


Use your finger to pop the balloon.

Keep Away Game



Move around to avoid a sprite.

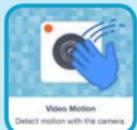


Keep Away Game

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GET READY



Click the **Add an Extension** button, then choose **Video Sensing**.

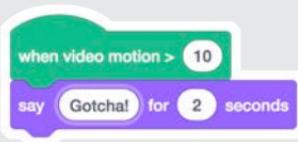
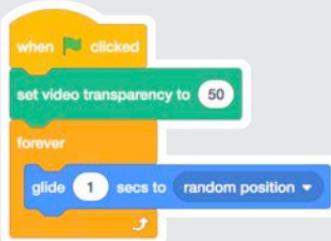


Choose a backdrop, like **Ocean**.



Choose a sprite, like **Jellyfish**.

ADD THIS CODE



TRY IT

Click the green flag to start.

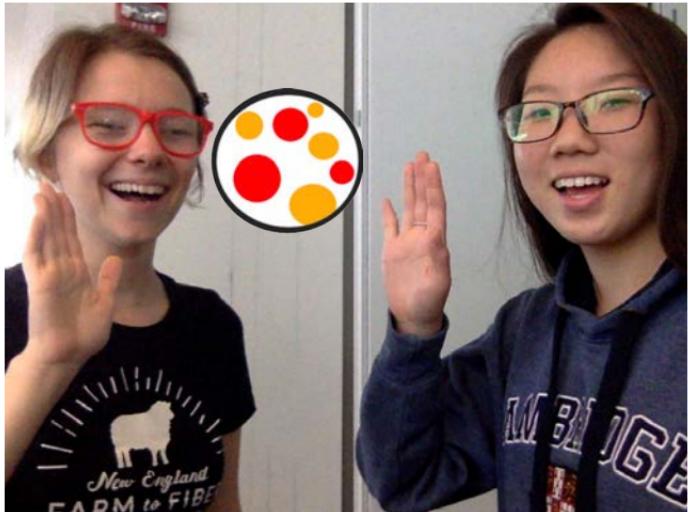


Move around to avoid the jellyfish.

Move a Sprite



Use your body to move a sprite across the screen.



Move a Sprite

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GET READY

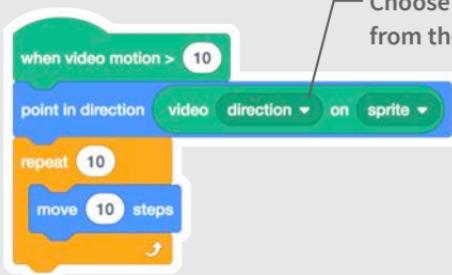
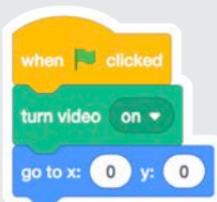


Click the **Add an Extension** button,
then choose **Video Sensing**.



Choose a sprite, like Beachball.

ADD THIS CODE



Choose video **direction**
from the menu.

TRY IT

Click the green
flag to start.



Use your hands to push the
beach ball around the screen.
Try it with a friend!