

# Events

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## Textbook

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## Events



### "The Pop-Up Surprise!"

One sunny morning, Sam was playing with his toy robot, Bolt. "Bolt," he said, "when I clap my hands, I want you to jump!" Sam clapped, but Bolt just stood there. "Hmm," Sam said, "it's not working."

Alex walked over. "Did you give Bolt the right signal to start?" she asked. "Computers need a clear signal, like a special button you press or a sound you make, to tell them exactly when to begin an action!"

This special signal is called an **event** in computer science. An **event** is something that happens that makes your code start. It's like a trigger!

Think about a doorbell. When someone presses the doorbell (that's the **event**), the sound rings inside your house (that's the action!). Or a light switch: when you flip the switch (the **event**), the light turns on (the action!). Computers also need an event to tell them when to start doing something. Without an event, the code just sits there, waiting.

### What Makes Code Start?

Imagine you're waiting for a special show to begin. How do you know it's time for the show? Maybe the lights dim, or the curtain opens, or a bell rings! In computer science, we have something similar called an **event**. An **event** is something that happens that makes your code start. It's like a trigger!

Think about more examples from your day:

- When your alarm clock rings (the **event**), you wake up (the action!)
- When you turn a car key (the **event**), the engine starts (the action!)
- When the microwave beeps (the **event**), you know your food is ready (the action!)

Computers work the same way. They need an event to tell them when to start doing something. Without an event, the code just sits there, waiting.

## Events in Your Code



In our coding playground, we use special **Event Blocks** to tell our computer when to start a set of instructions. Just like a doorbell event triggers a ringing sound, an "On Play Event" block triggers our code to start!

Here are the **Event Blocks** you'll use:

- **On Play Event:** This block makes your code start when you press the play button. It's often the first block you use!
- **On Tap Event:** This block makes your code start when you tap or click on a sprite (that's the character or object in your program).
- **On Touch Event:** This block makes your code start when one sprite touches another sprite.
- **Send Message Event:** This block lets one part of your program send a message to another part.
- **On Message Event:** This block waits for a special message to be received, and then it starts its code.

These event blocks are super important because they decide *when* your algorithms (those steps we talked about in Lesson 1!) get to run. We'll pick the right event block to make our programs start exactly when we want them to!

Remember: No event means no action. The computer waits for your signal!

## Critical Thinking Questions

1. How do you think using the "On Play Event" block helps start your algorithm?
2. What could you make a sprite do when you tap it in your program? Can you think of something fun?
3. What would happen if you forgot to add an event block to your code?

## Sentence Stems for ELL Students

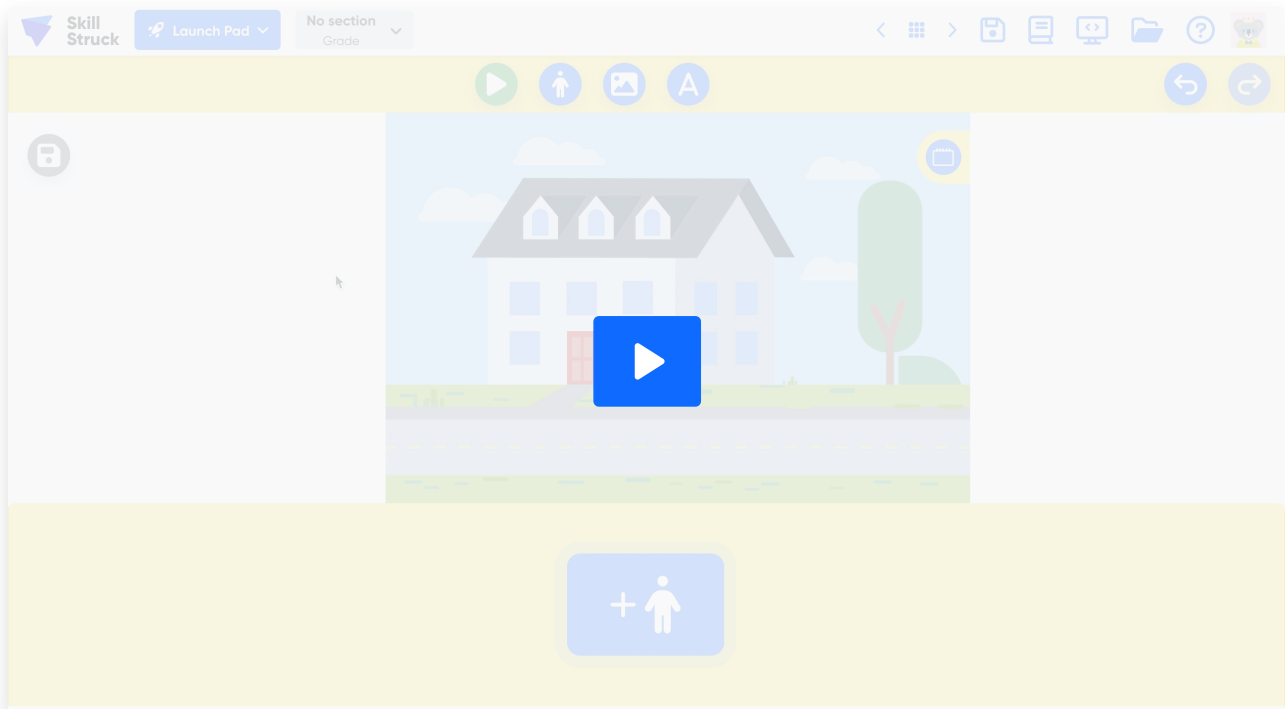
*When you read or listen to the word, (blank), think of a word or an example that you can use to fill that space. For instance, if you see a sentence that says "My favorite color is (blank)," you should fill that (blank) space with your favorite color.*

Here are some sentence starters to help us talk about events:

1. **"An event is (blank) that makes our code (blank)."**
2. **"When I (blank) the sprite, the event will make the code (blank)."**
3. **"Without an event, the computer (blank) because (blank)."**

## Events Blocks

Watch the video on events and an introduction to motion blocks. You will learn about more of the motion blocks in the next lesson.



## Questions (5)

1. What happens when you click the play button in your program?

MULTIPLE CHOICE

Choose the correct answer:

- A. The sprite moves
- B. The program stops
- C. The program starts
- D. The sprite changes color

2. What does the when sprite is tapped block do?

MULTIPLE CHOICE

Choose the correct answer:

- A. It makes the sprite stop
- B. It makes the sprite do something when you tap it
- C. It sends a message
- D. It ends the whole program

**3. What might happen if you tap a sprite in your program?**

**Choose the correct answer:**

- A. The program will stop
- B. The sprite will rotate
- C. The sprite can do something, like move or change
- D. The sprite will disappear

**4. What is the main purpose for using event blocks in your program?**

**Choose the correct answer:**

- A. Make the program run faster
- B. Help the program react to different things
- C. Change the background color
- D. To add music to the program

**5. How can you use the when sprite is tapped block in a game?**

**Choose the correct answer:**

- A. To change the background
- B. To make the sprite react when you tap it
- C. To stop the game
- D. To do nothing

# Games (2)

## 1. Events Matching

Match the description to the correct image

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

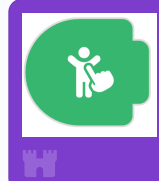


Check Matches

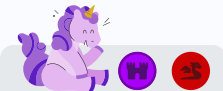
Attempts: 0

On Play

On Tap

On Touch





## 2. Events Typing Race

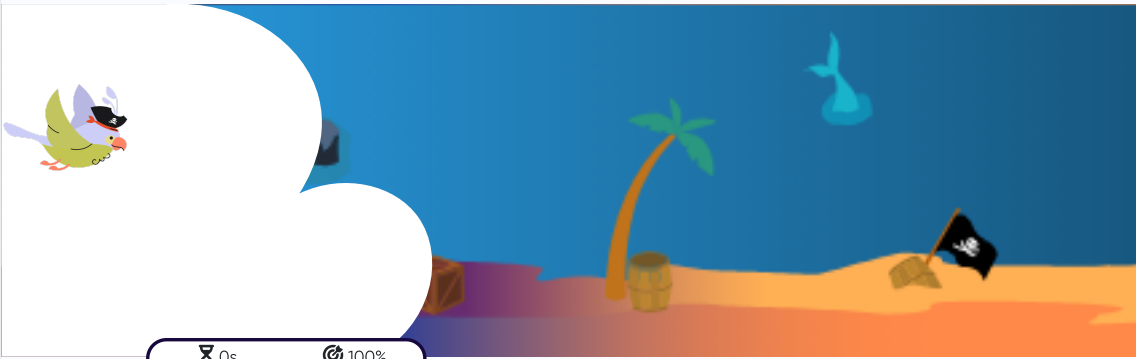
Full Screen

Audio

Instructions

Restart

Pause



0s

100%

events trigger something

## Blocks Challenges (5)

### 1. Messy Room!



#### Messy Room!

Oh no... the dog got into the room and is creating a mess!  
For this scene, pick the room background and the dog sprite.  
Have the dog hop and run all over the room!

1 → 6 1



Submit ↑



### 2. Cat Nap



#### Cat Nap

Cats love to nap! Cats can sleep between 12 to 16 hours a day! Since they are light sleepers, even a poke will sometimes wake them up and get them moving!

Using the "On tap" event block, program your cat sprite to move around the scene.

1 → 6 1



Submit ↑



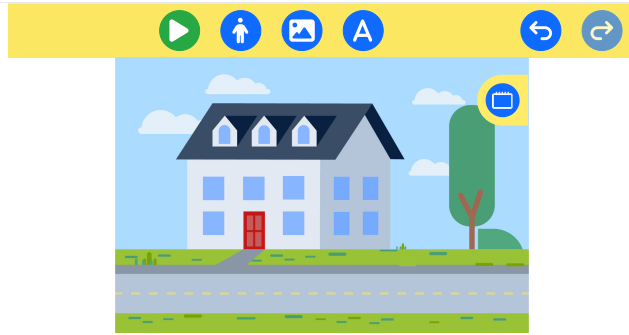
### 3. On Your Mark! Get Set! Go!



#### On Your Mark! Get Set! Go!

Joey loves to race his toy cars. Using the car sprite and the "On play" event block, have the car move across the scene.

1 6 1



Submit ↑



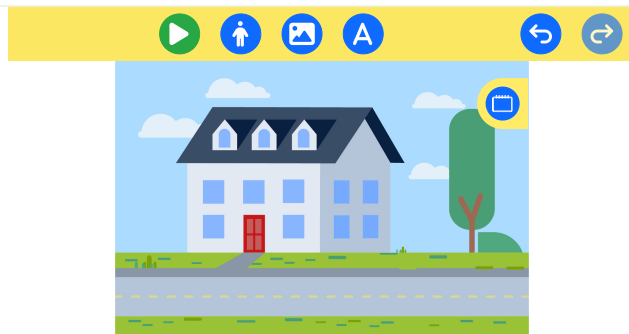
### 4. Beach Day!



#### Beach Day!

You get to spend the day at the beach! Using the beach background, program your sprite to explore the beach. Use either the "On play" event block or "On tap" event block to start your algorithm.

1 7 1



Submit ↑





## 5. Test Day



### Test Day

Your sprite is nervous for the big spelling test! Using the classroom background program your sprite to walk back and forth before the test

(Hint: use the left and right purple motion blocks).

1 6 1



Submit ↑



## Answer Keys & Solutions

### Questions

#### 1. What happens when you click the play button in your program?

MULTIPLE CHOICE

**Correct Answer:**

- A. The sprite moves ✗ Incorrect
- B. The program stops ✗ Incorrect
- C. The program starts ✓ Correct
- D. The sprite changes color ✗ Incorrect

**Explanation:**

The play button helps you begin the program.

#### 2. What does the when sprite is tapped block do?

MULTIPLE CHOICE

**Correct Answer:**

- A. It makes the sprite stop ✗ Incorrect
- B. It makes the sprite do something when you tap it ✓ Correct
- C. It sends a message ✗ Incorrect
- D. It ends the whole program ✗ Incorrect

**Explanation:**

Think about what happens when you touch or tap something on the screen.

#### 3. What might happen if you tap a sprite in your program?

MULTIPLE CHOICE

**Correct Answer:**

- A. The program will stop ✗ Incorrect

B. The sprite will rotate

✗ Incorrect

C. The sprite can do something, like move or change

✓ Correct

D. The sprite will disappear

✗ Incorrect

#### Explanation:

Tapping a sprite in a program can make it react, like moving or changing.

### 4. What is the main purpose for using event blocks in your program?

MULTIPLE CHOICE

#### Correct Answer:

A. Make the program run faster

✗ Incorrect

B. Help the program react to different things

✓ Correct

C. Change the background color

✗ Incorrect

D. To add music to the program

✗ Incorrect

#### Explanation:

Think about what event blocks help you do.

### 5. How can you use the when sprite is tapped block in a game?

MULTIPLE CHOICE

#### Correct Answer:

A. To change the background

✗ Incorrect

B. To make the sprite react when you tap it

✓ Correct

C. To stop the game

✗ Incorrect

D. To do nothing

✗ Incorrect

#### Explanation:

This block makes the sprite do something when you tap it.

### 1. Events Matching

#### Matching Game Solutions:

1. →  play button

2. →  On Tap

3. →  On Touch

*Students must drag items from the left to match with corresponding items on the right.*

### 2. Events Typing Race

*Typing game - no answer key needed. Students practice typing the provided content.*