

Control

Textbook

Control



Controlling Speed and Timing

Students in Ms. Rodriguez's class were coding an animation. David's sprite moved too fast across the screen. "I can't see what's happening," he said.

"You need control blocks," Ms. Rodriguez explained. "They control timing and speed in your program."

David found the slow speed block and added it before his motion blocks. Now his sprite moved slowly enough to watch.

Across the room, Jasmine was making a traffic light. "I need the light to stay red, then turn green," she said. She discovered the wait block.

"The wait block makes your sprite pause," Ms. Rodriguez said. "You type a number to control how long."

Jasmine's program worked perfectly. The sprite waited before changing.



What Are Control Blocks?

Control blocks manage how your program runs:

- **Speed blocks:** Make actions happen faster or slower

- **Wait blocks:** Pause before the next action
- **Stop blocks:** End the sprite's actions
- **Repeat blocks:** Run actions multiple times

Speed Control Blocks

Three speed options:

- **Fast Speed:** Actions happen quickly
- **Normal Speed:** Regular movement pace
- **Slow Speed:** Actions happen slowly

Use speed blocks before motion or look blocks to control how fast they execute.

Wait Block

The wait block creates pauses:

- Type a number for how long to wait
- Bigger numbers = longer waits
- Smaller numbers = shorter waits
- Helps sprites take turns

Example: Move right → Wait → Move left

Stop Block

The stop block:

- Ends all actions for that sprite
- Useful for ending animations
- Stops loops from continuing

Repeat Blocks

Instead of adding the same blocks multiple times:

- Use repeat block with a number
- Put actions inside the repeat block
- Saves space in your code

Example: Repeat 5 times → Hop

Combining Control Blocks

Create complex behaviors:

- Slow speed + Repeat = Slow animation loop
- Wait + Motion = Timed movements
- Multiple waits = Step-by-step actions

Common Control Block Patterns

For animations:

1. On Play Event
2. Slow Speed
3. Repeat 3
4. Motion blocks inside repeat
5. Stop

For timed actions:

1. On Play Event
2. Action blocks
3. Wait
4. Different action blocks

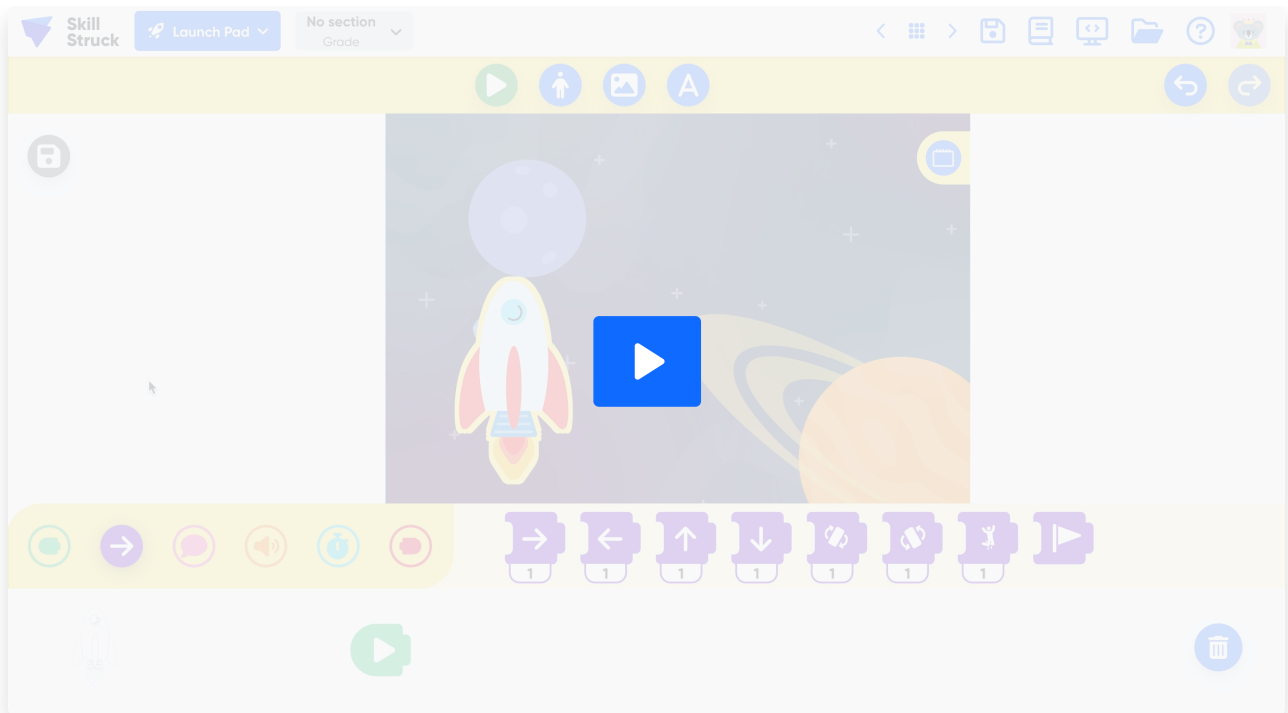
Critical Thinking Questions

1. What happens when you use fast speed before motion blocks?
2. When would you use slow speed instead of normal speed?
3. Why is the repeat block better than copying the same blocks many times?

Sentence Stems

- "The control block (blank) makes my sprite (blank)."
- "I use wait blocks to (blank)."
- "Different speeds help my program (blank)."

Watch the video to learn how to code with control blocks.[a](#)



Questions (5)

1. What does the “wait” block do in a program?

MULTIPLE CHOICE

Choose the correct answer:

- A. Makes the sprite move faster
- B. Pauses the sprite for a short time
- C. Changes the background
- D. Deletes the sprite

2. If a sprite keeps doing the same thing over and over, what block is it using?

MULTIPLE CHOICE

Choose the correct answer:

- A. Stop
- B. Slow speed
- C. Repeat
- D. Wait

3. When would you use the “stop” block in a project?

Choose the correct answer:

- A. When you want the action to end
- B. When you want something to repeat
- C. When you're starting a new sprite
- D. When you change the background

4. Which block would make your sprite move super quickly?

Choose the correct answer:

- A. Wait
- B. Repeat
- C. Stop
- D. Fast Speed

5. What does the “slow speed” block do?

Choose the correct answer:

- A. Stops the program
- B. Makes actions happen more slowly
- C. Makes the sprite disappear
- D. Starts the program

Games (2)

1. Control Block Matching

Match the description to the correct control block

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Matches

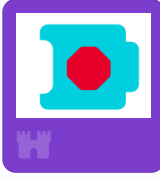


Attempts: 0


Pause the animation for a certain time

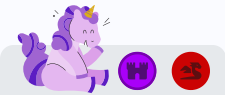
Stops the sprite's blocks

Runs the blocks inside on repeat

Runs the following blocks at a slow speed







2. Control Categories

Sort the actions into the correct category if it uses a wait block, fast speed block, or repeat block.

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Order

Attempts: 0

The sprite spins around 3 times before stopping.

The sprite moves across the screen very quickly.

The sprite zooms to catch a bouncing ball.

The sprite pauses for 5 before moving to the next spot.




The sprite waits for 3 before it starts dancing

The sprite jumps up and down 5 times.

Wait Block

Fast Speed Block

Repeat Block



Blocks Challenges (5)

1. Ready, Set, Go!



Ready, Set, Go!

It's time for the school running race! Program at least 2 sprites racing across the scene. Use the "fast speed" and "slow speed" control blocks to change the sprites' speeds and create a winner. At the end of the race, have the winner play a sound or animation.

2 12 2 2



Submit ↑



2. Windy Day



Windy Day

It's a windy day at the beach today! For this scene, choose the beach background. Then, choose an umbrella and student sprite.

Place the umbrella in the sand and place a person sprite near the umbrella. Code the umbrella to shake by using motion blocks and the "Repeat" control block. As this is happening, the student should be speaking about the wind

2 6 3 1 2



Submit ↑



3. Finding Home

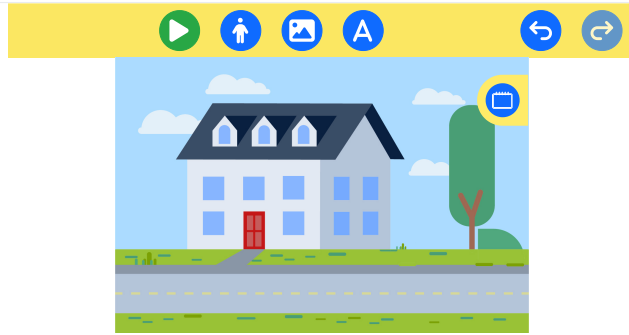


Finding Home

For this scene, you'll need the bird and bird nest sprites.

Place the bird nest on the ground and place the bird sprite in the air. Code the bird sprite flying around looking for the nest, pausing when they see it, then have them return to the nest.

1 8 1 1



Submit ↑



4. Snack Time

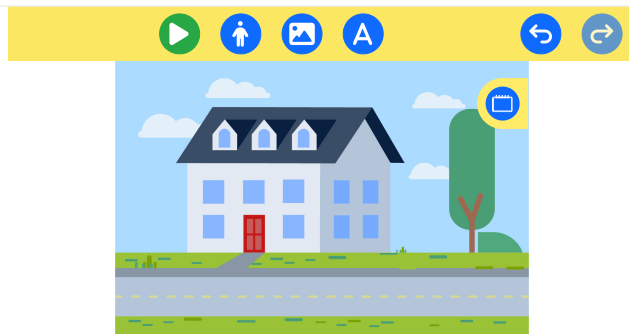


Snack Time

A mouse has gotten loose in the classroom and has its eyes set on a cookie. Using the mouse sprite and cookie sprite, program the mouse to scurry around the classroom to get to the cookie.

Use the control speeds to change the mouse's speed on its quest for a yummy snack. Once the mouse reaches the cookie, program the cookie sprite to disappear.

2 8 1 3 1



Submit ↑



5. Swim Loop



Swim Loop

Program the fish sprite to do at least 2 circles using the motion blocks and a repeat loop control block.



Submit ↑



Answer Keys & Solutions

Questions

1. What does the "wait" block do in a program?

MULTIPLE CHOICE

Correct Answer:

- A. Makes the sprite move faster ✗ Incorrect
- B. Pauses the sprite for a short time ✓ Correct
- C. Changes the background ✗ Incorrect
- D. Deletes the sprite ✗ Incorrect

Explanation:

Think about what we do when we wait in line!

2. If a sprite keeps doing the same thing over and over, what block is it using?

MULTIPLE CHOICE

Correct Answer:

- A. Stop ✗ Incorrect
- B. Slow speed ✗ Incorrect
- C. Repeat ✓ Correct
- D. Wait ✗ Incorrect

Explanation:

This block is for repeating actions like a dance step or fun fact screen!

3. When would you use the "stop" block in a project?

MULTIPLE CHOICE

Correct Answer:

- A. When you want the action to end ✓ Correct

B. When you want something to repeat

✗ Incorrect

C. When you're starting a new sprite

✗ Incorrect

D. When you change the background

✗ Incorrect

Explanation:

Think about when the timer ends in a game or activity.

4. Which block would make your sprite move super quickly?

MULTIPLE CHOICE

Correct Answer:

A. Wait

✗ Incorrect

B. Repeat

✗ Incorrect

C. Stop

✗ Incorrect

D. Fast Speed

✓ Correct

Explanation:

This one is like running during gym class!

5. What does the "slow speed" block do?

MULTIPLE CHOICE

Correct Answer:

A. Stops the program

✗ Incorrect

B. Makes actions happen more slowly

✓ Correct

C. Makes the sprite disappear

✗ Incorrect

D. Starts the program

✗ Incorrect

Explanation:

Imagine walking calmly to lunch instead of rushing.

1. Control Block Matching

Matching Game Solutions:

1. →  Wait block

2. →  Stop block

3. →  Repeat block

4. →  Slow Speed

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

2. Control Categories

Category Solutions:

Category 1: Wait Block

- The sprite waits for 3 before it starts dancing
- The sprite pauses for 5 before moving to the next spot.

Category 2: Fast Speed Block

- The sprite moves across the screen very quickly.
- The sprite zooms to catch a bouncing ball.

Category 3: Repeat Block

- The sprite jumps up and down 5 times.
- The sprite spins around 3 times before stopping.

Scoring:

- Gold: 1 attempts or fewer
- Silver: 2 attempts or fewer
- Bronze: 3 attempts or fewer

Students must sort items into their correct categories.