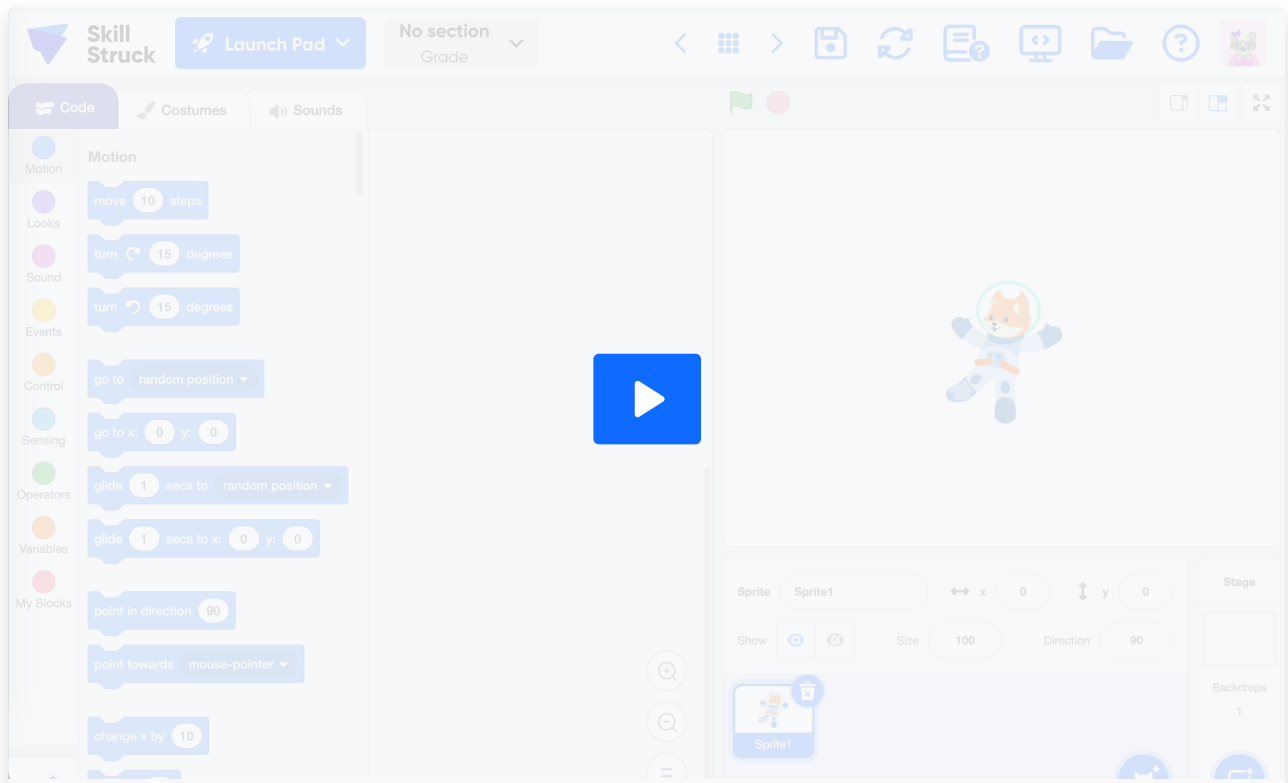
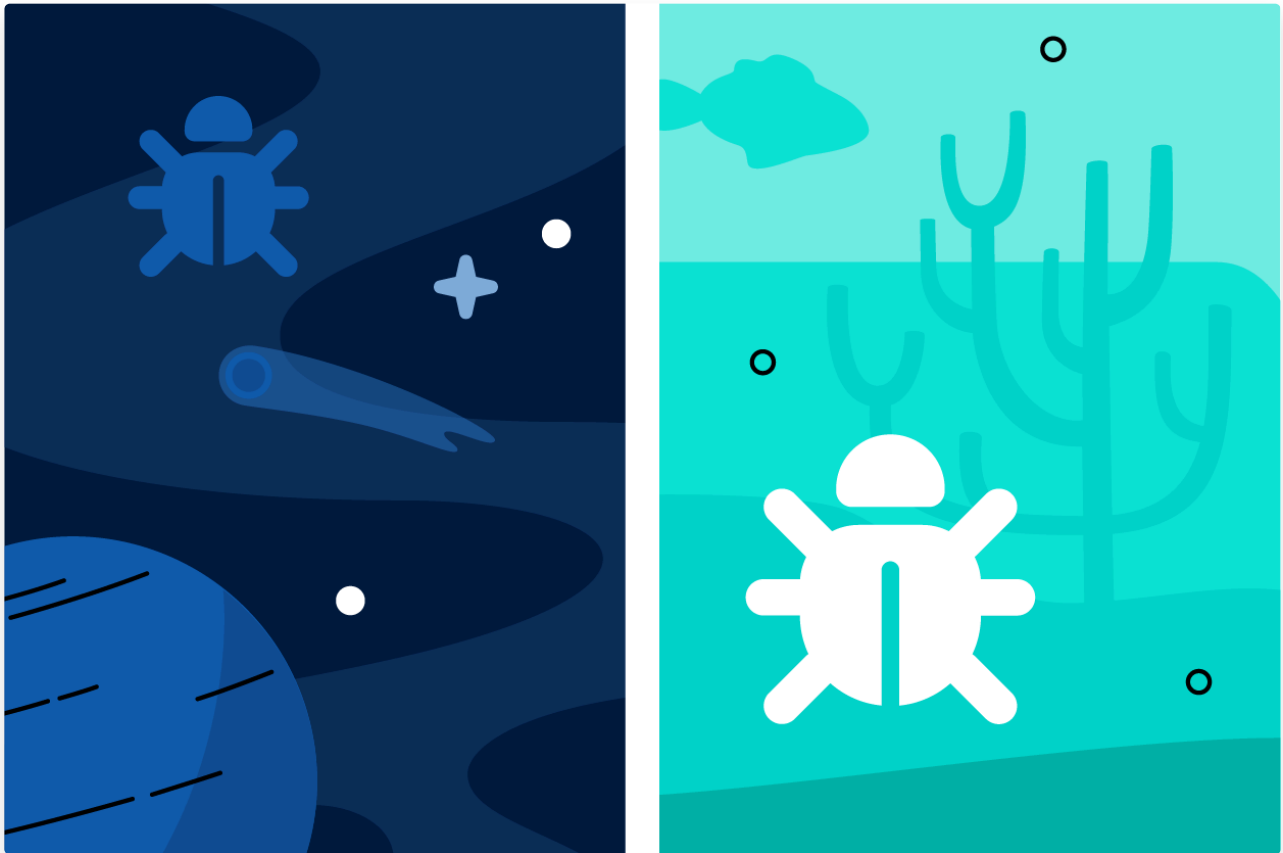


## Debugging and Switching Backdrops

### Textbook

## Debugging and Switching Backdrops





Sometimes, when you're making something new, things don't go exactly as you planned. That's okay! Just like you can fix a drawing or a puzzle, you can fix problems in your code too.

## Debugging

Sometimes, we find mistakes in our code. We call these mistakes "bugs." The good news is that we can fix these bugs! When we correct the bugs in our code, it's called **debugging**. You'll practice debugging as you learn how to switch between different backgrounds in this lesson.

## Solving Problems Like a Coder: Step by Step!

When you code, you're like a builder constructing something or a detective solving a puzzle! Big problems are often easier to solve when you break them into smaller, simpler steps.

This is called **computational thinking** or solving problems in computational steps. Here's what it looks like:

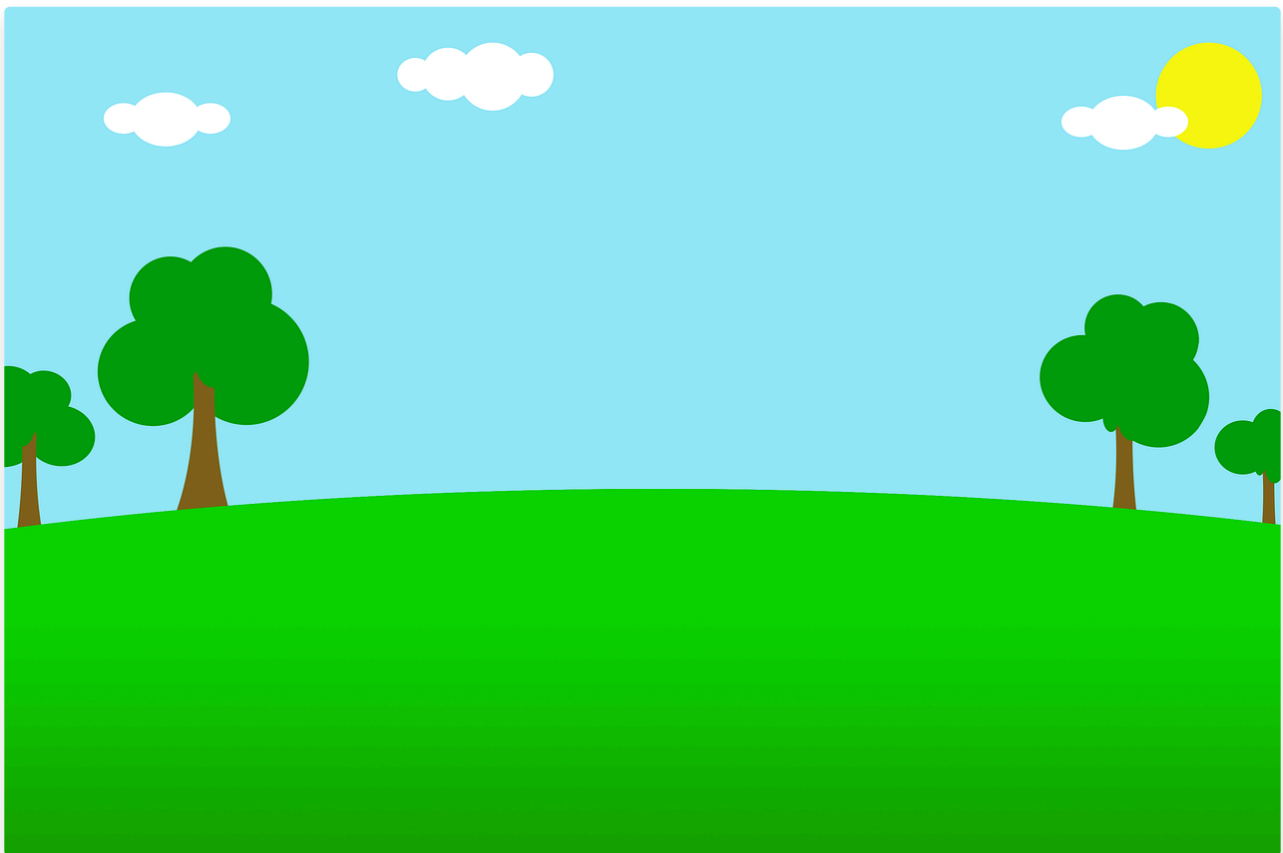
- **Step by Step:** Imagine you want your animated character to dance, then change its costume, and then fly into space! Trying to code all of that at once would be very tricky. Instead, you break it down:
  1. First, make the character dance.
  2. Next, change its costume.
  3. Finally, make it fly to space. Each of these is a smaller, easier step to code!
- **Show Your Plan:** Sometimes, you can show your plan in different ways before you even start coding! You might:
  - Draw a picture of what your program will do.
  - Write down a list of steps (like a recipe for your code).

- Talk about your plan with a friend or your teacher. These are all ways to "show" or "represent" your solution!
- **Look for Patterns:** Computers are great at repeating things! If you see a part of your code that happens over and over (like drawing the same shape many times), you can use a special command called a "loop" to make it shorter and neater. Finding patterns helps you build your code better and faster.
- **Check Your Work (Debugging!):** Just like you check your math homework, it's important to check your code. If something isn't working right, you go back to your steps, one by one, to find the "bug" and fix it. This is exactly what debugging is all about!

Thinking in computational steps helps you solve many different kinds of problems, not just in coding.

## Switching Backdrops

A backdrop is the background image that your code shows on. You can use multiple backdrops in your coded scene.



To switch between backdrops follow these steps:

1. First, add a backdrop by clicking the 'Choose Backdrop' [icon](#) at the bottom right of your screen.
2. Select a backdrop from the backdrop library (i.e. School).
3. Then, add another backdrop (i.e. Basketball 1).
4. You can see all your backdrops by selecting the Backdrops tab on the left side of your screen. Select the backdrop you want to start with.
5. Go back to the Code tab.
6. Select a sprite (i.e. Jordyn).

7. Drag the green flag event block into your code editor.
8. Add the `Switch Backdrop to` block and select the backdrop you wish to start with.
9. Connect a `Say Hello` block.
10. Add another `Switch Backdrop to` block and select the second backdrop you want to show.
11. Add the event block `when backdrop switches to [backdrop 2]` to your code editor.
12. Code what you want to see happen when your project switches to backdrop 2.

Practice debugging your code as you switch between backdrops in this lesson's challenges.

## Critical Thinking Questions

1. How can debugging help you solve problems with your code more easily?
2. How is debugging in coding like making changes in a game when things don't go as planned?

## Questions (5)

### 1. What is a backdrop?

MULTIPLE CHOICE

Choose the correct answer:

- A. A background image
- B. A small picture in the corner of your scene
- C. An editor
- D. A falling sprite

### 2. What do you call it when you fix mistakes in coding?

MULTIPLE CHOICE

Choose the correct answer:

- A. Hanging
- B. Defueling
- C. Trapping
- D. Debugging

**3. What are problems or errors in code commonly referred to as?**

**Choose the correct answer:**

- A. Bugs
- B. Sprites
- C. Backdrops
- D. Events

**4. How do you switch between backdrops?**

**Choose the correct answer:**

- A. Drag an event block
- B. Click the 'Choose Backdrop' icon
- C. Select a sprite
- D. Click the green flag

**5. What should you do after selecting a backdrop in the backdrop library?**

**Choose the correct answer:**

- A. Click the microphone icon
- B. Go to the Motion category
- C. Select a sprite
- D. Go back to the Code tab

Games (3)

1. Debugging and Switching Backdrops Typing Game


Full Screen

Audio

Instructions

Restart

Pause



0s

100%

Sometimes we run into p

2. Debugging and Switching Backdrops Memory Game

Full Screen

Audio


Instructions

Answer Key

Pause


Flips: 0

1




Nepal

2




Antarctica

3




Nepal

4




Desert

5




Space City

6




Desert

7




Antarctica

8




Underwater

9




Wetland

10




Wetland

11




Space City

12



Underwater



🔍

🔊

🔧

3. Debugging and Switching Backdrops Matching Game

Full Screen

Audio

Instructions


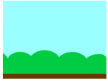

Answer Key

Pause

Clear All

Check Matches




Attempts: 0



Witch House

Bedroom 1


Winter





School

Forest

Blue Sky





# Blocks Pro Challenges (3)

## 1. Storytelling Adventure

Challenge

Textbook

### Storytelling Adventure

Create an interactive storytelling adventure where the player moves through different scenes by switching backdrops to progress in the story.

Use at least 3 different backdrops to represent scenes in your adventure (i.e. forest, castle, beach, cave). Create a program so you switch backdrops when you click a keyboard arrow. Remember to code your sprite speaking as well to tell the story.

Requirements

0/2

5 Looks

5 Event

Blocks must be connected to an Event block in order to pass the requirements

Submit

Code

Costumes

Sounds

Motion

move 10 steps

turn 15 degrees

turn 15 degrees

go to random position

go to x: 0 y: 0

glide 1 secs to random position

glide 1 secs to x: 0 y: 0

point in direction 90

point towards mouse-pointer

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

set rotation style left-right

x position

Sprite

Sprite1

x 0 y 0

Size 100 Direction 90

Sprite1

Stage

Backdrops 1

## 2. Field Trip

Challenge

Textbook

### Field Trip

Create a field trip adventure where the sprite moves between different places. Each backdrop should represent a different place. Use the arrow keys to move between the backdrops. After your sprite moves to each backdrop, program your sprite to state facts about each place.

Use at least 4 backdrops.

Requirements

0/2

6 Looks

3 Event

Blocks must be connected to an Event block in order to pass the requirements

Submit

Code

Costumes

Sounds

Motion

move 10 steps

turn 15 degrees

turn 15 degrees

go to random position

go to x: 0 y: 0

glide 1 secs to random position

glide 1 secs to x: 0 y: 0

point in direction 90

point towards mouse-pointer

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

set rotation style left-right

x position

Sprite

Sprite1

x 0 y 0

Size 100 Direction 90

Sprite1

Stage

Backdrops 1



### 3. Changing Seasons

Challenge

Textbook

#### Changing Seasons

Create a scene that shows the changing seasons - spring, summer, autumn, and winter.

Each backdrop should represent a different season. Switch between each backdrop using the arrow keys.

On each backdrop, also include a sprite explaining why that backdrop represents that season.

Requirements

0/2

7 Looks

7 Event

Blocks must be connected to an Event block in order to pass the requirements

Submit

Code

Costumes

Sounds

Motion  
Looks  
Sound  
Events  
Control  
Sensing  
Operators  
Variables  
My Blocks

Motion

move 10 steps

turn 15 degrees

turn 15 degrees

go to random position

go to x: 0 y: 0

glide 1 secs to random position

glide 1 secs to x: 0 y: 0

point in direction 90

point towards mouse-pointer

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

set rotation style left-right

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Stage

Sprite

Sprite1

x 0 y 0

Size 100 Direction 90

Backdrops

1

Sprite1

Sprite1

Sprite1

Sprite1

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## Answer Keys & Solutions

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### Questions

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#### 1. What is a backdrop?

MULTIPLE CHOICE

Correct Answer:

- |  |             |
|--|-------------|
| A. A background image                          | ✓ Correct   |
| B. A small picture in the corner of your scene | ✗ Incorrect |
| C. An editor                                   | ✗ Incorrect |
| D. A falling sprite                            | ✗ Incorrect |

#### Explanation:

A backdrop is what your code plays on.

#### 2. What do you call it when you fix mistakes in coding?

MULTIPLE CHOICE

Correct Answer:

- |              |             |
|--------------|-------------|
| A. Hanging   | ✗ Incorrect |
| B. Defueling | ✗ Incorrect |
| C. Trapping  | ✗ Incorrect |
| D. Debugging | ✓ Correct   |

#### Explanation:

Mistakes in coding are called bugs.

#### 3. What are problems or errors in code commonly referred to as?

MULTIPLE CHOICE

Correct Answer:

- |         |           |
|---------|-----------|
| A. Bugs | ✓ Correct |
|---------|-----------|

B. Sprites

✗ Incorrect

C. Backdrops

✗ Incorrect

D. Events

✗ Incorrect

#### Explanation:

These are issues that need to be fixed during programming.

### 4. How do you switch between backdrops?

MULTIPLE CHOICE

#### Correct Answer:

A. Drag an event block

✗ Incorrect

B. Click the 'Choose Backdrop' icon

✓ Correct

C. Select a sprite

✗ Incorrect

D. Click the green flag

✗ Incorrect

#### Explanation:

Backdrops are changed using specific blocks.

### 5. What should you do after selecting a backdrop in the backdrop library?

MULTIPLE CHOICE

#### Correct Answer:

A. Click the microphone icon

✗ Incorrect

B. Go to the Motion category

✗ Incorrect

C. Select a sprite

✗ Incorrect

D. Go back to the Code tab

✓ Correct

#### Explanation:











After choosing a backdrop, you need to proceed with programming actions related to that backdrop.

## 1. Debugging and Switching Backdrops Typing Game

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

## 2. Debugging and Switching Backdrops Memory Game







**Memory Game Pairs:**

1.  arctic backdrop ↔  arctic backdrop
2.  nebula backdrop ↔  nebula backdrop
3.  Space City 1 backdrop ↔  Space City 1 backdrop
4.  Wetland backdrop ↔  Wetland backdrop
5.  Underwater 1 backdrop ↔  Underwater 1 backdrop
6.  desert backdrop ↔  desert backdrop

*Students must find all matching pairs by flipping cards and remembering their positions.*

## 3. Debugging and Switching Backdrops Matching Game

**Matching Game Solutions:**

1.  forest backdrop →
2.  blue sky backdrop →
3.  Bedroom Backdrop →
4.  School Backdrop →
5.  Witch House Backdrop →
6.  Winter Backdrop →

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

