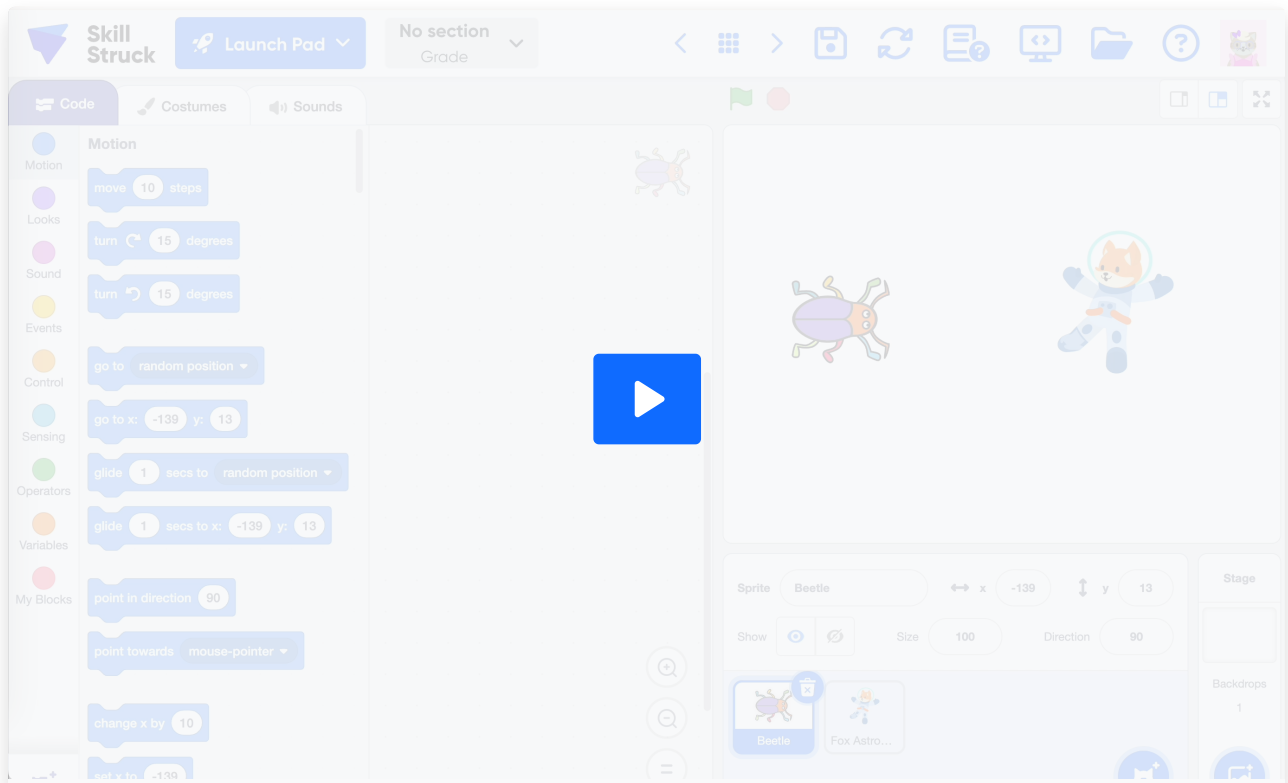


# Broadcasting Messages

## Textbook

# Broadcasting Messages





## Introduction

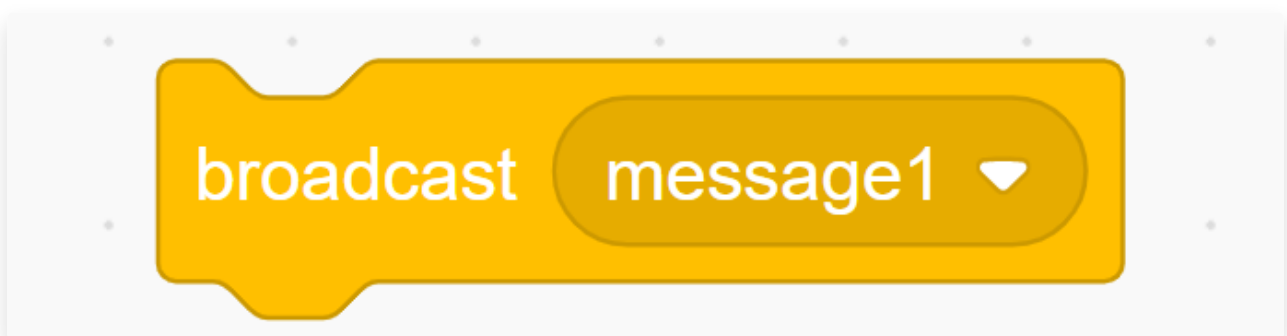
Getting a letter in the mail is so exciting! Especially if it's an invitation or a postcard. Not many people write letters anymore, but it's still a fun way to communicate. If you've never written a letter and sent it in the mail, give it a try sometime!

While coding, you can send messages from one sprite to another. Let's learn how to do this.

## Broadcasting Messages

Broadcasting messages means sending information from one part of the code to another. It's like giving instructions or sharing information between different parts of a program.

There are 3 different broadcasting blocks you can use:



This block is used to send a message to another part of your code.

A yellow Scratch block with a notch on the left and a bump on the right. It contains the text 'broadcast', a dropdown menu showing 'message1' with a downward arrow, and the text 'and wait'.

This block is used to send a message to another part of your code and then pause.

A yellow Scratch block with a bump on the left and a notch on the right. It contains the text 'when I receive', a dropdown menu showing 'message1' with a downward arrow, and a small empty box.

This block is used to receive the message and trigger the code you want to start. When using broadcasting messages in your code, ensure your commands are clear and precise.

## Critical Thinking Questions

1. How do you think broadcasting messages in coding is similar to sending a message to a group of friends? Can you think of another way to share information in a program?
2. Why is it important for different parts of a program to be able to "talk" to each other through broadcasting messages? How do you think this helps the program work better?
3. Consider broadcasting a message in your code to achieve a specific movement, such as a sprite moving very carefully like a snail. If you then wanted the sprite to move quickly, how would you adjust your code's instructions? What is the impact of selecting precise instructions on the outcome of your program's actions?

## Questions (5)

### 1. What does it mean to broadcast messages?

MULTIPLE CHOICE

Choose the correct answer:

- A. Playing loud noises in your code.
- B. Sending information from one part of the code to another.
- C. Telling your code to repeat.
- D. Responding to something on a computer when the user does something.

MULTIPLE CHOICE

## 2. How many broadcast blocks are there?

Choose the correct answer:

- A. 2
- B. 3
- C. 4
- D. 5

## 3. Which broadcasting block is used to send a message and then pause the program?

MULTIPLE CHOICE

Choose the correct answer:

- A. Send message
- B. Broadcast message and wait
- C. Receive message
- D. Trigger message

MULTIPLE CHOICE

## 4. What happens when a program receives a message?

Choose the correct answer:

- A. It changes the backdrop
- B. It plays a sound effect
- C. It triggers the corresponding code block
- D. It moves the sprite

MULTIPLE CHOICE

## 5. Why are broadcasting messages useful in programming?

Choose the correct answer:

- A. They allow for sending emails
- B. They enable communication between different parts of a program
- C. They help organize files on a computer
- D. They create animations

Games (3)

1. Broadcasting Messages Typing Game


Full Screen

Audio

Instructions

Restart

Pause



0s

100%

Broadcasting messages r

2. Broadcasting Messages Matching Game

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Matches

Attempts: 0


Broadcast: message1

Broadcast: message1


when message: message1

when message: message1


This block is used to send a message to another part of your code.






This block is used to send a message to another part of your code and then pause.



This block is used to receive the message and trigger the code you want to start.







### 3. Broadcasting Messages Memory Game

Full Screen

Audio

Instructions

Answer Key

Pause

Flips: 0

1

new blog • Tagasson • backboard

2

new blog • Tagasson • backboard

3

new blog • Tagasson • backboard

4

Tagasson • backboard • newfw

5

Tagasson • backboard • newfw

6

Tagasson • backboard



🔊

👁️

# Blocks Pro Challenges (3)

## 1. Greetings!

Challenge

Textbook

Greetings!

Code 4 sprites saying hello to each other one at a time.

Use the broadcast message blocks to do this.

Requirements

0/2

4 Looks

7 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. Storytelling

Challenge

Textbook

Storytelling

Create a story with at least 3 sprites. Each sprite represents a character.

Each sprite should take turns telling the story by broadcasting a message with the next part of the story.

Requirements

0/2

3 Looks

6 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. Quiz Master

Challenge Textbook

#### Quiz Master

Design a quiz game with at least 3 multiple-choice questions. One sprite represents the quiz master and the other sprites represent the players.

The quiz master will broadcast questions when you press the question number. The players should then respond with their answers using broadcast messages.

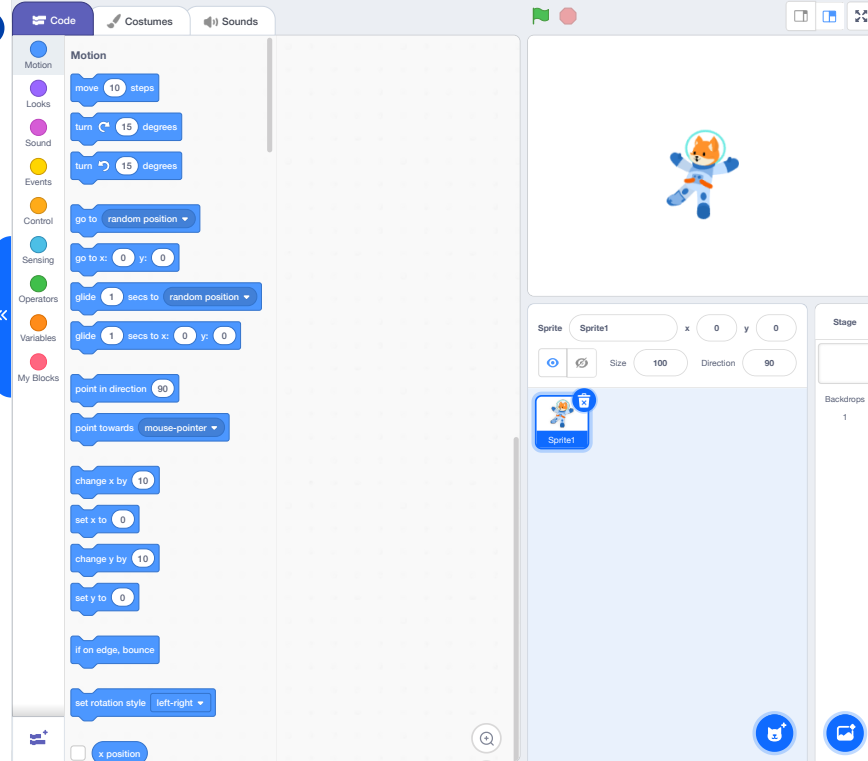
For example, when the 1 key is pressed, the question will be asked and then it will broadcast a message so the players then respond.

Requirements 0/2

9 Looks

15 Event

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



The image shows a Scratch code editor with a script for a Quiz Master. The script is in the Motion category and includes the following blocks:

- 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

The script is connected to an Event block (x position).

The right side of the editor shows the Stage with a Scratch cat sprite. The Sprite1 panel shows the sprite's properties: x: 0, y: 0, Size: 100, Direction: 90. The Backdrops panel shows 1 backdrop.



## Answer Keys & Solutions

### Questions

#### 1. What does it mean to broadcast messages?

MULTIPLE CHOICE

Correct Answer:

- A. Playing loud noises in your code. ✗ Incorrect
- B. Sending information from one part of the code to another. ✓ Correct
- C. Telling your code to repeat. ✗ Incorrect
- D. Responding to something on a computer when the user does something. ✗ Incorrect

#### Explanation:

Broadcasting messages is like giving instructions or sharing information between different parts of a program.

#### 2. How many broadcast blocks are there?

MULTIPLE CHOICE

Correct Answer:

- A. 2 ✗ Incorrect
- B. 3 ✓ Correct
- C. 4 ✗ Incorrect
- D. 5 ✗ Incorrect

#### Explanation:

The broadcast blocks say "broadcast [message]," "broadcast [message] and wait," and "when I receive [message]"

#### 3. Which broadcasting block is used to send a message and then pause the program?

MULTIPLE CHOICE

Correct Answer:

A. Send message

✗ Incorrect

B. Broadcast message and wait

✓ Correct

C. Receive message

✗ Incorrect

D. Trigger message

✗ Incorrect

#### Explanation:

This block allows for synchronization between different parts of the program.

### 4. What happens when a program receives a message?

MULTIPLE CHOICE

#### Correct Answer:

A. It changes the backdrop

✗ Incorrect

B. It plays a sound effect

✗ Incorrect

C. It triggers the corresponding code block

✓ Correct

D. It moves the sprite

✗ Incorrect

#### Explanation:

Receiving a message initiates specific actions based on the message received.

### 5. Why are broadcasting messages useful in programming?

MULTIPLE CHOICE

#### Correct Answer:

A. They allow for sending emails

✗ Incorrect

B. They enable communication between different parts of a program

✓ Correct

C. They help organize files on a computer

✗ Incorrect

D. They create animations

✗ Incorrect

#### Explanation:




Consider how messages facilitate interaction and coordination in programming.

### 1. Broadcasting Messages Typing Game

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

### 2. Broadcasting Messages Matching Game







**Matching Game Solutions:**

1.  A yellow code block that says "broadcast message 1" →
2.  A yellow code block that says "broadcast message 1 and wait" →
3.  A yellow code block that says "When I receive message 1" →

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

### 3. Broadcasting Messages Memory Game

**Memory Game Pairs:**

1.  A yellow code block that says "broadcast message 1" ↔  A yellow code block that says "broadcast message 1"
2.  A yellow code block that says "broadcast message 1 and wait" ↔  A yellow code block that says "broadcast message 1 and wait"
3.  A yellow code block that says "When I receive message 1" ↔  A yellow code block that says "When I receive message 1"

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