

Button Inputs

Textbook

Button Inputs



You're watching your favorite show but for some reason you're having a hard time hearing it. You frantically look for the remote to turn it up but you can't seem to find it! Now you've missed a crucial part of the plot, all because you didn't have a way of telling the TV to get louder. Buttons and inputs are how we interact with technology—from keyboards and remotes to touchscreens and sensors. Today, we'll explore how to program the micro:bit's buttons and other inputs to make it respond to presses, shakes, and even sounds!

Inputs

An [input](#) refers to the point where information is fed into a system. The programs you write will need an input to tell the computer when to start the code. An example of this would be clicking the play button. The micro:bit can use many different types of input that we will explore in this lesson! All of these input blocks can be found in the pink input category.

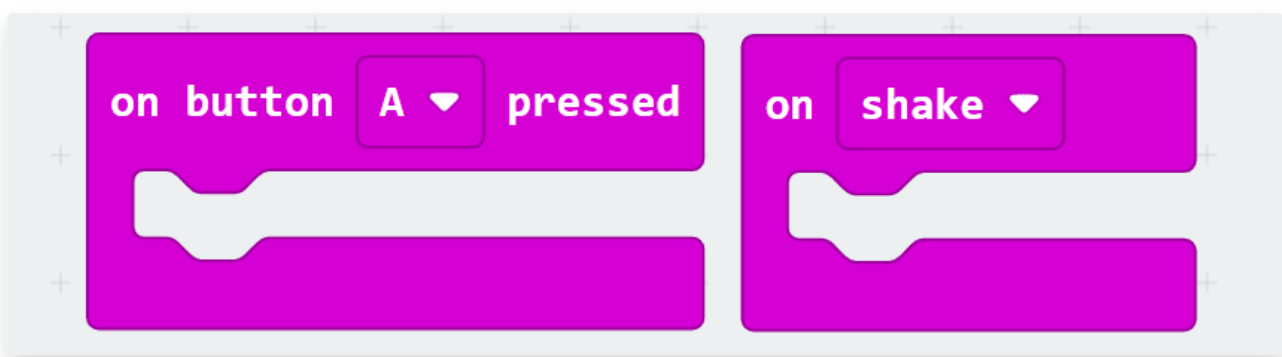
Buttons

You can program the micro:bit to start the code when you click Button A, Button B, or Buttons A and B together! Watch this brief video to learn more about buttons:



To do this:

1. Drag the `on button A pressed` block into your code editor.
2. Then, decide what you want your program to do when you press the button. For example, drag a `show icon` block and select a fun picture to show when you press Button A.
3. To program something different to happen with each button pressed, drag another `on button A pressed` block into the code editor.
4. Click the dropdown on Button A and select the button input you want.
5. Then, create the code for what will happen when your selected button is pressed.



Shake

You can also program your code to start when you shake the micro:bit. To do this:

1. Drag the `on shake` block into your code editor.
2. Then, decide what you want the micro:bit to do when it shakes. Drag the code into this input and shake it up to watch it play!

The following inputs are only possible on version 2 of the micro:bit. To check if the micro:bit is a version 2, look for a "V2" in the bottom right hand corner on the back of the micro:bit.

onLogoPressed

You can also program your code to start when you touch the micro:bit logo at the top of your robot. To do this:

1. Drag the `on logo pressed` block into your code editor.
2. Decide what you want the micro:bit to do when the logo is pressed, then drag the corresponding blocks and connect them within the `on logo pressed` block.

onLoudSound

Want your code to play when a loud sound happens? To do this:

1. Drag the `on loud sound` block into your code editor.
2. Decide what you want the micro:bit to do when a loud sound happens, then drag the corresponding blocks and connect them within the `on loud sound` block.

Note: You can also create the loud sound by changing the sound level on your simulator.

onQuietSound

You can also program things to happen on a quiet sound. To do this:

1. Drag the `on loud sound` block into your code editor.
2. Click the drop down arrow to change "loud" to "quiet."
3. Decide what you want the micro:bit to do when a quiet sound happens, then drag the corresponding blocks and connect them within the `on quiet sound` block.

Note: You can also create the quiet sound by changing the sound level on your simulator.

Adopted from microbit.org platform

Critical Thinking Questions

1. What would happen if an input device, like a keyboard or touchscreen, stopped working? How would you troubleshoot it?
2. If you could invent a new type of input for a computer or robot, what would it be and how would it work?
3. Why do you think some devices, like the micro:bit, use multiple types of inputs instead of just one?

Questions (5)

1. You want the micro:bit to show a heart when you press Button B. What should you do?

MULTIPLE CHOICE

Choose the correct answer:

- A. Drag "on button A pressed" and add a heart
- B. Drag "on start" and draw a heart
- C. Drag "on button B pressed" and add "show icon: heart"
- D. Drag "on shake" and add "show icon: heart"

2. A classmate adds two "on button A pressed" blocks in the same code, but only one works. What would help fix this?

MULTIPLE CHOICE

Choose the correct answer:

- A. Delete both blocks and start over
- B. Change one to "on button B pressed"
- C. Add both blocks inside "on start"
- D. Switch the micro:bit off and on

3. You want your program to respond to shaking the micro:bit. What block should you use?

MULTIPLE CHOICE

Choose the correct answer:

- A. on logo pressed
- B. on button A pressed
- C. on shake
- D. on start

4. You're testing your "on loud sound" block, but nothing is happening. What should you try?

MULTIPLE CHOICE

Choose the correct answer:

- A. Use the simulator to increase the sound level
- B. Shake the micro:bit instead
- C. Turn off the sound feature
- D. Add an "on button A pressed" block

5. True or False: The "on logo pressed" block works on V1 micro:bits.

MULTIPLE CHOICE

Choose the correct answer:

- A. True
- B. False

Games (2)

1. Button Inputs Typing


Full Screen

Audio

Instructions

Restart

Pause



0s 100%

Buttons and inputs are h

2. Button Inputs Matching

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Matches

Attempts: 0


on button A pressed

on shake

on logo pressed

on loud sound

on quiet sound



Code starts when you shake the micro:bit.

Code starts when a loud sound happens

Code starts when a quiet sound happens

Starts the code when you click Button A

Code starts when you touch the micro:bit logo

Robotics Challenges (7)

1. Button A

Challenge

Textbook

Button A

Code the micro:bit to show a checkmark followed by an X when button A is pressed.

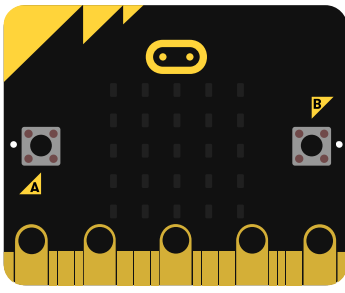
Requirements

Program your code to start when Button A is pressed

Show a check mark and then an X using 'show icon' blocks.

Answer Key

Submit



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Loops
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Math
Extensions
Advanced

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...

2. Shining Sunbeam

Challenge

Textbook

Shining Sunbeam

Create growing sunbeams to show when Button B is pressed. You will need to code at least 3 'show LEDs' blocks to make the sunbeams look like they are growing.

Requirements

Code your program to start when Button B is pressed

Create at least 3 designs showing sunbeams growing

Answer Key

Submit

Step 1

Shining Sunbeam Step 1 of 8

1

Next

Drag the **on button A pressed** block into the code editor. Change A to B.

Toolbox

Search...

Basic
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Lcd
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Loops
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Math
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...

3. Spell Your Name

Challenge

Textbook

Spell Your Name

Code the micro:bit to spell your name when buttons A & B are pressed together.

Requirements

Program your code to start when Buttons A and B are pressed together.

Write your name to show on the LED screen.

Answer Key

Submit

Step 1

Spell Your Name Step 1 of 4

1 Next

Drag the **on button A pressed** block into the code editor. Change A to A + B.

Toolbox

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Math
Extensions

Advanced

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on button A pressed

forever

Micro:bit

4. Flashing Heart

Challenge

Textbook

Flashing Heart

Code the micro:bit to flash a heart 3 times when you shake the robot.

Hint: you will need to use the clear and pause buttons to make the image flash.

Adopted from micro:bit.org projects

Requirements

Program your code to show when the micro:bit shakes.

Code 3 flashing hearts

Use 'clear screen' and pause blocks to make each heart flash.

Answer Key

Submit

Step 1

Flashing Heart Step 1 of 6

1 Next

Drag the **on shake** block into the code editor.

Toolbox

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Led
Radio
Loops
Logic
Variables
Math
Extensions

Advanced

Download

on shake

forever

Micro:bit

7. The Setting Sun

Challenge

Textbook

The Setting Sun

Code the micro:bit to show a sun rising and setting when the logo is pressed.

Requirements

- Program your code to start when the logo is pressed.
- Create at least 2 designs to show a sun rising and setting

Answer Key

Submit

Step 1

Begin your code with the onLogoPressed input block.

The Setting Sun Step 1 of 2



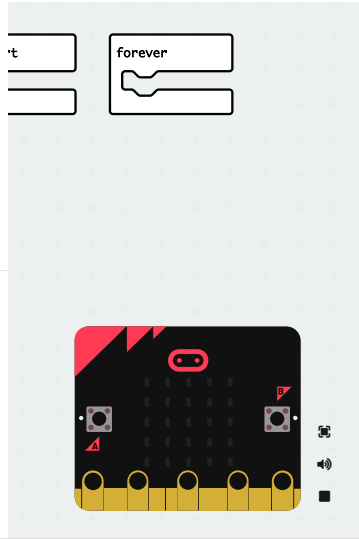
1

Next

Toolbox

Search...

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced



Download



Answer Keys & Solutions

Questions

1. You want the micro:bit to show a heart when you press Button B. What should you do?

MULTIPLE CHOICE

Correct Answer:

- A. Drag "on button A pressed" and add a heart ✗ Incorrect
- B. Drag "on start" and draw a heart ✗ Incorrect
- C. Drag "on button B pressed" and add "show icon: heart" ✓ Correct
- D. Drag "on shake" and add "show icon: heart" ✗ Incorrect

Explanation:

The button in your code must match the button you want to press.

2. A classmate adds two "on button A pressed" blocks in the same code, but only one works. What would help fix this?

MULTIPLE CHOICE

Correct Answer:

- A. Delete both blocks and start over ✗ Incorrect
- B. Change one to "on button B pressed" ✓ Correct
- C. Add both blocks inside "on start" ✗ Incorrect
- D. Switch the micro:bit off and on ✗ Incorrect

Explanation:

Each input block should be unique to avoid confusion in the code.

3. You want your program to respond to shaking the micro:bit. What block should you use?

MULTIPLE CHOICE

Correct Answer:

- | | |
|------------------------|-------------|
| A. on logo pressed | ✗ Incorrect |
| B. on button A pressed | ✗ Incorrect |
| C. on shake | ✓ Correct |
| D. on start | ✗ Incorrect |

Explanation:

Inputs must match the physical action like shaking or pressing.

4. You're testing your "on loud sound" block, but nothing is happening. What should you try?

MULTIPLE CHOICE

Correct Answer:

- | | |
|--------------------------------------------------|-------------|
| A. Use the simulator to increase the sound level | ✓ Correct |
| B. Shake the micro:bit instead | ✗ Incorrect |
| C. Turn off the sound feature | ✗ Incorrect |
| D. Add an "on button A pressed" block | ✗ Incorrect |

Explanation:

You can simulate a loud sound to test audio-based inputs.

5. True or False: The "on logo pressed" block works on V1 micro:bits.

MULTIPLE CHOICE

Correct Answer:

- | | |
|----------|-------------|
| A. True | ✗ Incorrect |
| B. False | ✓ Correct |

Explanation:

Some inputs like the logo touch only work on micro:bit V2.

Games

1. Button Inputs Typing

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

2. Button Inputs Matching

Matching Game Solutions:

1. →
2. →
3. →
4. →
5. →

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