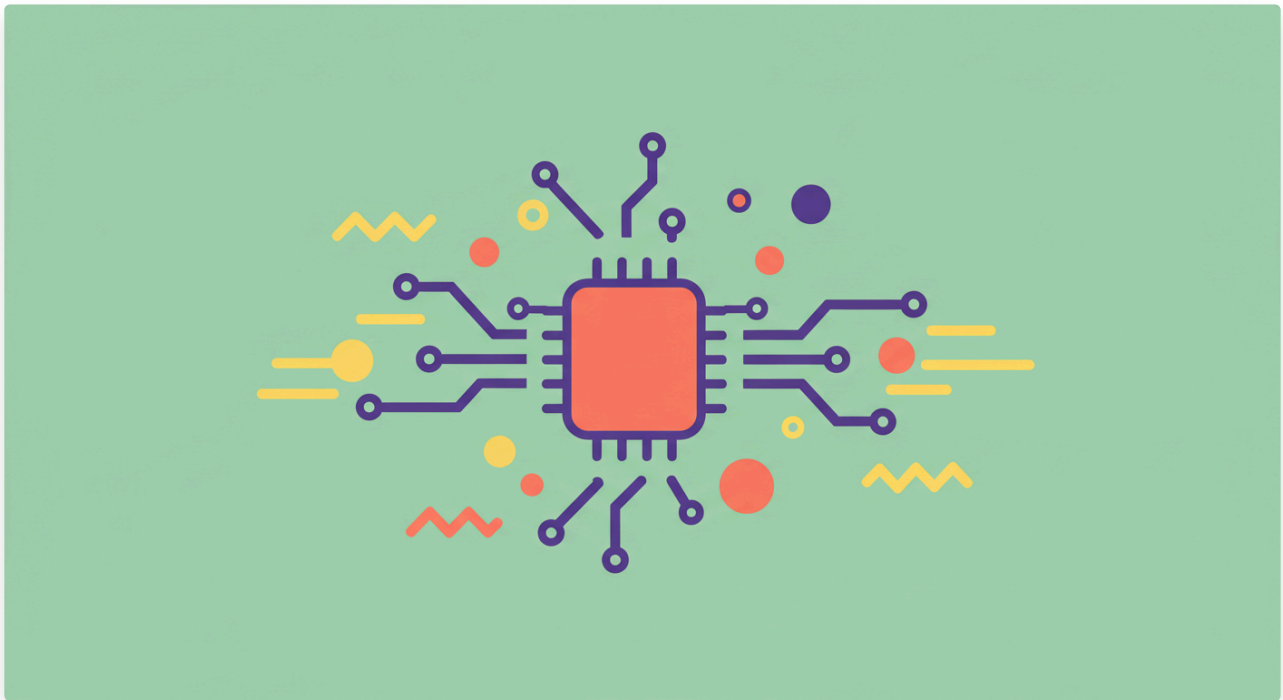


Starting with the Basics

Textbook

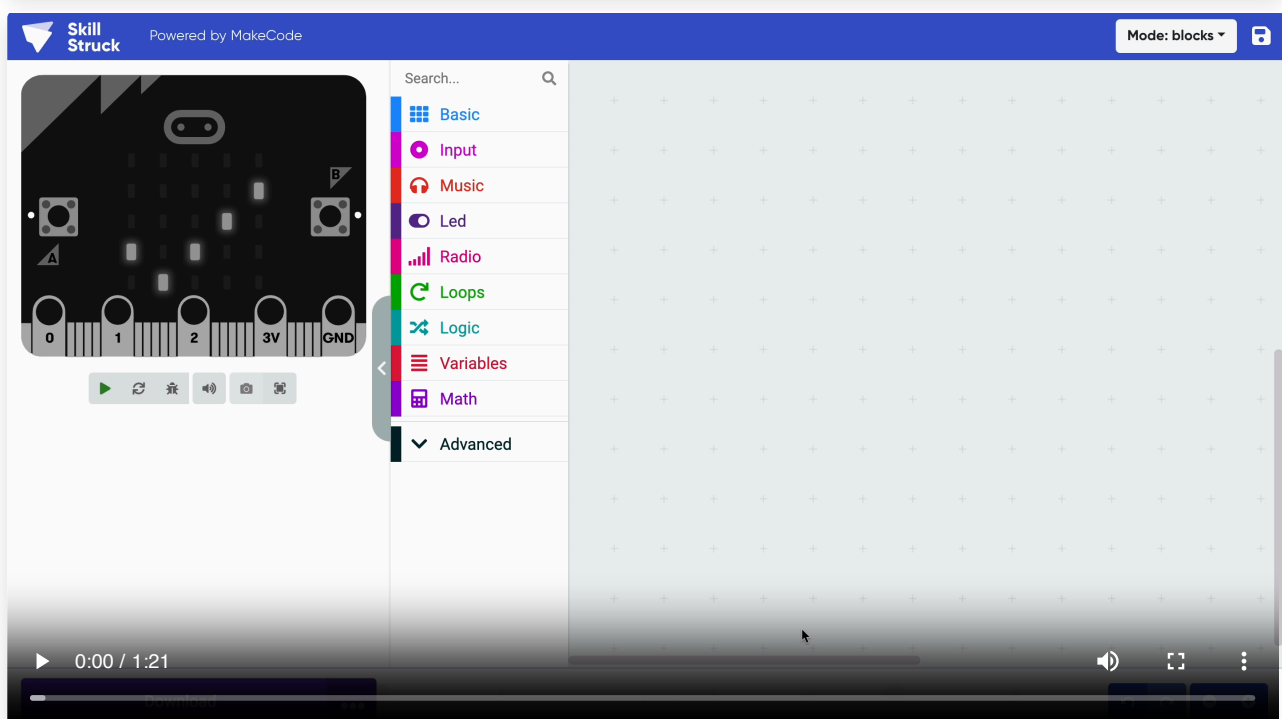
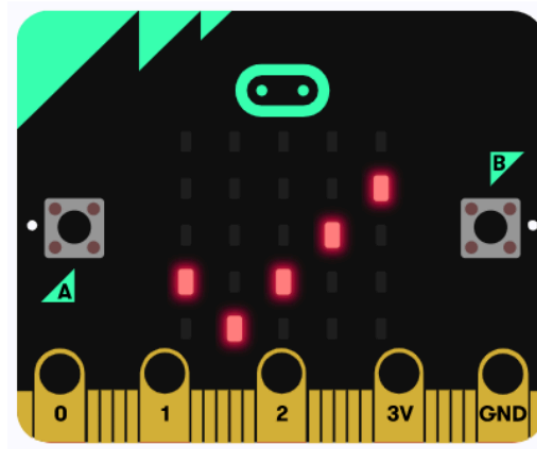
Starting with the Basics



Believe it or not, there was a time when it took a really long time to communicate with someone. Sending letters through the mail, calling someone on the phone; it took time. That's not the case anymore! [Computers](#) are powerful machines that communicate with each other through networks, allowing us to send messages, browse the web, and even control devices like the micro:bit. Before we dive into advanced coding, let's start with the basics—understanding how computers work, communicate, and follow the instructions we give them!

Starting with the Basics

Remember, the `on start` block tells the micro:bit when to run our code. Code within the `on start` block will run when the play button is pressed. test



Code It! – Show Icon

Practice coding the micro:bit to show a check mark icon:

1. Drag the `on start` block into the code editor.
2. Drag the `show icon` block and connect it within the `on start` block.
3. Select the check mark icon.

This is telling the micro:bit that when you press play and start the code a check mark will show.

Code It! – Pause and Clear Screen

Now what if I wanted my robot to show a check mark, pause, and then clear the screen after?

1. Add a `pause` block after the `show icon` block to tell the computer we want the check mark icon to pause and stick around longer. Click the drop-down arrow to select how many seconds you want the icon to show.

2. Connect a **clear screen** block underneath the **pause** block.

Use this lesson to practice your icon coding skills!

Adopted from microbit.org platform

Critical Thinking Questions

1. Why do you think computers break information into smaller packets before sending it across a network?
2. If you could design a new way for computers to communicate with each other, what would it be and why?

Questions (5)

1. What does the on start block do in your micro:bit program?

MULTIPLE CHOICE

Choose the correct answer:

- A. It stops the program from running
- B. It tells the micro:bit when to start running the code
- C. It clears the screen
- D. It pauses the program

2. You want your micro:bit to show a check mark icon when the program starts. Which blocks should you use together?

MULTIPLE CHOICE

Choose the correct answer:

- A. on start + show icon (check mark)
- B. pause + clear screen
- C. show icon + pause
- D. clear screen + on start

3. How can you make the check mark stay on the micro:bit screen longer?

MULTIPLE CHOICE

Choose the correct answer:

- A. Add a clear screen block first
- B. Use a pause block after the show icon block
- C. Remove the on start block
- D. Drag the show icon block twice

4. What does the clear screen block do after the pause?

Choose the correct answer:

- A. It turns off the micro:bit
- B. It deletes the current lights showing
- C. It makes the current lights showing blink faster
- D. It saves the program

5. If you want the micro:bit to show a heart icon for 3 seconds, then clear the screen, how would you arrange your blocks?

MULTIPLE CHOICE

Choose the correct answer:

- A. on start > show icon (heart) > pause (3 seconds) > clear screen
- B. pause > on start > clear screen > show icon
- C. clear screen > show icon > pause > on start
- D. show icon > clear screen > pause > on start

Games (2)

1. Starting with the Basics Typing


Full Screen

Audio

Instructions

Restart

Pause



0s 100%

Computers are powerful r

2. Starting with the Basics Ordering

Put the instructions in order to instruct the micro:bit to show a check mark icon when the micro:bit starts. It will pause for 2 seconds, then the screen will clear.

Full Screen

Audio

Instructions


Answer Key

Pause


Clear All

Check Matches


Attempts: 0




Add a pause block after the show icon block to tell the computer we want the check mark icon to pause and stick around longer.




Drag the show icon block and connect it within the on start block.




Connect a clear screen block underneath the pause block.





Click the drop-down arrow to select how many seconds you want the icon to show.

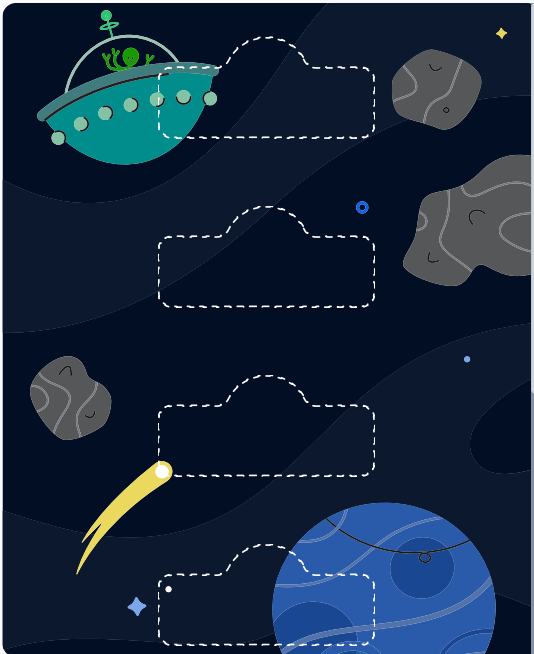


Drag the on start block into the code editor.



Select the check mark icon.





Robotics Challenges (7)

1. Sad Face

Challenge

Textbook

Sad Face

Code the micro:bit to show a sad face and have it pause for 5 seconds when you press play.

Requirements

Use the 'on start' block and show a sad face

Pause your code for 5 seconds

Answer Key

Submit

Step 1

Use the **on start** block and code the micro:bit to show a sad face.

Sad Face Step 1 of 2

1 Next

Download

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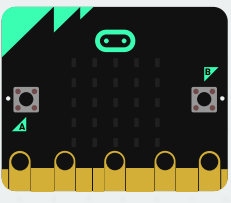
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2. Icon Pause Icon

Challenge

Textbook

Icon Pause Icon

Code the micro:bit to show 2 icons with a pause in between them when you press play.

Requirements

Use the 'on start' block and show two icons with a pause in between

Answer Key

Submit

Step 1

Use the **on start** block and show two icons.

Icon Pause Icon Step 1 of 2

1 Next

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...

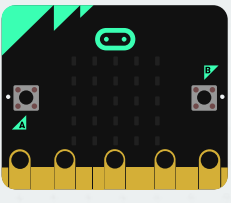
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3. Many Faces

Challenge

Textbook

Many Faces

Code the micro:bit to show a happy face, then pause for 5 seconds. Then show a sad face and pause for 2 seconds. Finally, show the asleep face and pause for 1 second.

Requirements

Show a smiley face followed by a 5 second pause

Show a sad face followed by a 2 second pause

Show the asleep face followed by a 1 second pause

Answer Key

Submit

Step 1

Use the **on start** block and show a happy face. Pause for 5 seconds.

Many Faces Step 1 of 3

1 Next

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4. Animal Kingdom

Challenge

Textbook

Animal Kingdom

Code the micro:bit to show a snake icon and have it pause for 5 seconds. Then, show a giraffe icon and have it pause for 2 seconds.

Requirements

Show a snake, then pause for 5 seconds

Show a giraffe, then pause for 2 seconds

Answer Key

Submit

Download

5. Pitchfork

Challenge

Textbook

Pitchfork

Code the micro:bit to show a pitchfork icon and have it pause for 1 second. Then, show a sword icon and have it pause for 5 seconds.

Requirements

Show a pitchfork and then pause for 1 second

Show a sword and then pause for 5 seconds

Answer Key

Submit

Step 1

Use the **on start** block and show a pitchfork. Pause for 1 second.

Many Faces Step 1 of 2

1 Next

Toolbox

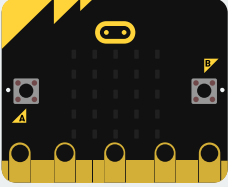
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6. Pause the Triangle

Challenge

Textbook

Pause the Triangle

Code the micro:bit to show a triangle. Have it pause for 2 seconds, then clear the screen.

Requirements

Show a triangle icon

Pause the triangle icon for 2 seconds

Clear the screen

Answer Key

Submit

Step 1

Use the **on start** block and show a triangle using the **show icon** block.

Pause the Triangle Step 1 of 3

1 Next

Toolbox

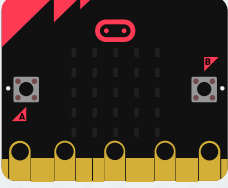
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7. Music Note

Challenge

Textbook

Music Note

Code the micro:bit to show a music note. Have it pause for 5 seconds, then clear the screen.

Requirements

- Show a music note icon
- Pause the icon for 5 seconds
- Clear the screen

Answer Key

Submit

Step 1

Use the **on start** block and show a music note. Pause for 5 seconds.

Music note Step 1 of 2



1

Next

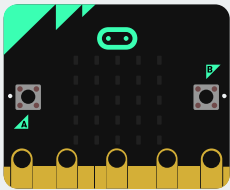
Toolbox

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- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions

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Answer Keys & Solutions

Questions

1. What does the on start block do in your micro:bit program?

MULTIPLE CHOICE

Correct Answer:

- A. It stops the program from running ✗ Incorrect
- B. It tells the micro:bit when to start running the code ✓ Correct
- C. It clears the screen ✗ Incorrect
- D. It pauses the program ✗ Incorrect

Explanation:

The on start block runs your code when you press play.

2. You want your micro:bit to show a check mark icon when the program starts. Which blocks should you use together?

MULTIPLE CHOICE

Correct Answer:

- A. on start + show icon (check mark) ✓ Correct
- B. pause + clear screen ✗ Incorrect
- C. show icon + pause ✗ Incorrect
- D. clear screen + on start ✗ Incorrect

Explanation:

The icon shows inside the on start block to run right away.

3. How can you make the check mark stay on the micro:bit screen longer?

MULTIPLE CHOICE

Correct Answer:

A. Add a clear screen block first

✗ Incorrect

B. Use a pause block after the show icon block

✓ Correct

C. Remove the on start block

✗ Incorrect

D. Drag the show icon block twice

✗ Incorrect

Explanation:

This block tells the micro:bit to wait before doing the next step.

4. What does the clear screen block do after the pause?

MULTIPLE CHOICE

Correct Answer:

A. It turns off the micro:bit

✗ Incorrect

B. It deletes the current lights showing

✓ Correct

C. It makes the current lights showing blink faster

✗ Incorrect

D. It saves the program

✗ Incorrect

Explanation:

Clear screen removes anything shown on the display.

5. If you want the micro:bit to show a heart icon for 3 seconds, then clear the screen, how would you arrange your blocks?

MULTIPLE CHOICE

Correct Answer:

A. on start > show icon (heart) > pause (3 seconds) > clear screen

✓ Correct

B. pause > on start > clear screen > show icon

✗ Incorrect

C. clear screen > show icon > pause > on start

✗ Incorrect

D. show icon > clear screen > pause > on start

✗ Incorrect

Explanation:

The blocks run in order from top to bottom inside on start.

1. Starting with the Basics Typing

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

2. Starting with the Basics Ordering

Correct Order:

1. Drag the on start block into the code editor.
2. Drag the show icon block and connect it within the on start block.
3. Select the check mark icon.
4. Add a pause block after the show icon block to tell the computer we want the check mark icon to pause and stick around longer.
5. Click the drop-down arrow to select how many seconds you want the icon to show.
6. Connect a clear screen block underneath the pause block.

Students must arrange items in the correct sequence.