Using Waits, Loops and Switches

I am in a loop!

WAIT please!
Waits, Loops and Switches Pre-Quiz

1. In programming, what is a loop? When is a loop useful?

2. How can you control the duration for which a loop repeats?

3. In programming, what is a switch?
1. In programming, what is a loop? When is a loop useful?
   A loop is an operator that allows us to repeat a set of commands indefinitely. Loops are useful when you need to repeat a set of commands multiple times.

2. How can you control the duration for which a loop repeats?
   You can control how many times a loop repeats by clicking the dropdown arrow next to “Control” on the loop block and setting it to forever, time, sensor, count or logic.

3. In programming, what is a switch?
   In programming, a switch is an object that gives different commands depending on the state it is in.
Wait Block Activity

**Objective:** Combine wait blocks, loops and switches to perform a task

**Do This:** First, attach 2 touch sensors (name them A and B) and a sound sensor to your robot.

Then program the robot to perform the following task:

- Stay at rest and display “Ready” on the screen until detecting a loud noise. Once a loud noise is detected:
  - Move left and display “Left” whenever touch sensor A is pressed.
  - Move right and display “Right” whenever touch sensor B is pressed.
  - Move forward and display “Forward” whenever both touch sensors A and B are pressed.
- Stay at rest and display “Stop” when no buttons are pressed.

***Hint: Click on the icon, drag the block into the program, and select “Text” from the dropdown menu to display text on screen.***
Wait Block Activity Solution
Wait Block Activity Solution

1. Various settings

2. Wait Block

3. Switch

4. Switch

5. Display
Wait Block Activity Solution

various settings
(continued)
Wait Block Activity Solution

Various settings (continued)
1. In programming, what is a loop?  
   When is a loop useful?

2. How can you control the duration for which a loop repeats?

3. In programming, what is a switch?
Waits, Loops and Switches Post-Quiz Answers

1. In programming, what is a loop? When is a loop useful?
   A loop is an operator that allows us to repeat a set of commands indefinitely. Loops are useful when you need to repeat a set of commands multiple times.

2. How can you control the duration for which a loop repeats?
   You can control how many times a loop repeats by clicking the dropdown arrow next to “Control” on the loop block and setting it to forever, time, sensor, count or logic.

3. In programming, what is a switch?
   In programming, a switch is an object that gives different commands depending on the state it is in.
Vocabulary

**brainstorming:** Thinking of ideas as a group.

**iteration:** Doing something again, especially with the intent to make improvements.

**loop:** An operator that repeats a set of commands.

**switch:** In programming, a switch is an object that gives different commands, depending on the state it is in.
Images Sources


Device and programming images from LEGO MINDSTORM NXT User’s Guide http://goo.gl/wuhSUA

Screen captures, diagrams and drawings by author