Manuals+ — User Manuals Simplified.

Learning Resources Botley The Coding Robot Activity Set 2.0 Instructions

Contents

Learning Resources Botley The Coding Robot Activity Set 2.0

Product Information

- **Product Name:** 78-piece activity set
- **Model Number:** LER 2938
- **Recommended Grades:** K+
- **Includes:** Robot arms, sticker sheet, Activity Guide

Features

- Teaches basic and advanced coding concepts
- Encourages critical thinking, spatial concepts, sequential logic, collaboration, and teamwork
- Allows customization of Botley's light color
- Enables object detection
- Offers sound settings: High, Low, and Off
- Provides the option to repeat steps or sequences of steps
- Allows clearing of programmed steps
- Automatic power-down after 5 minutes of inactivity

Product Usage Instructions

Basic Operation:

To operate Botley, use the POWER switch to toggle between OFF, CODE, and LINE-following modes.

Using the Remote Programmer:

To program Botley, follow these steps:

1. Press the desired buttons on the Remote Programmer to enter commands.
2. Press the TRANSMIT button to send your code from the Remote Programmer to Botley.

Remote Programmer Buttons:

- **FORWARD (F):** Botley moves forward 1 step (approximately 8, depending on the surface).
- **TURN LEFT 45 DEGREES (L45):** Botley will rotate to the left 45 degrees.
- **TURN RIGHT 45 DEGREES (R45):** Botley will rotate to the right 45 degrees.
- **LOOP:** Press to repeat a step or sequence of steps.
- **OBJECT DETECTION:** Press to enable object detection.
- **TURN LEFT (L):** Botley will rotate to the left 90 degrees.
- **BACK (B):** Botley moves backward 1 step.
- **SOUND:** Press to toggle between 3 sound settings: High, Low, and Off.
- **TURN RIGHT (R):** Botley will rotate to the right 90 degrees.
- **CLEAR:** Press once to clear the last programmed step. Press and hold to clear all previously programmed steps.

Battery Installation:

Botley requires (3) three AAA batteries, while the Remote Programmer requires (2) two AAA batteries. Please refer to page 7 of the user manual for detailed instructions on how to install the batteries.

Note: When the batteries are low on power, Botley will beep repeatedly, and functionality will be limited. Please insert new batteries to continue using Botley.

Getting Started:

To start programming Botley, follow these steps:

1. Slide the POWER switch on the bottom of Botley to CODE mode.
2. Place Botley on the floor (preferably hard surfaces for optimal performance).
3. Press the FORWARD (F) arrow on the Remote Programmer.
4. Point the Remote Programmer at Botley and press the TRANSMIT button.
5. Botley will light up, make a sound to indicate the program has been transmitted, and move forward one step.

Note: If you hear a negative sound after pressing the transmit button, please refer to the troubleshooting section of the user manual for further assistance.

Let's get coding

Programming, or coding, is the language we use to communicate with computers. When you program Botley using the included Remote Programmer, you are engaging in a basic form of "coding." Stringing together commands to direct Botley is a great way to get started in the world of coding. So why is learning the language of coding so important? Because it helps teach and encourage:

1. Basic coding concepts
2. Advanced coding concepts like If/Then logic
3. Critical thinking
4. Spatial concepts
5. Sequential logic
6. Collaboration and teamwork

Set includes

- 1 Botley 2.0 robot
- 1 Remote Programmer
- 2 Sets of detachable robot arms
- 40 Coding cards
- 6 Coding boards
- 8 Sticks
- 12 Cubes
- 2 Cones
- 2 Flags
- 2 Balls
- 1 Goal
- 1 Glow-in-the-dark sticker sheet

Basic Operation

Power—Slide this switch to toggle between OFF, CODE, and LINEfollowing modes

POWER

STOP
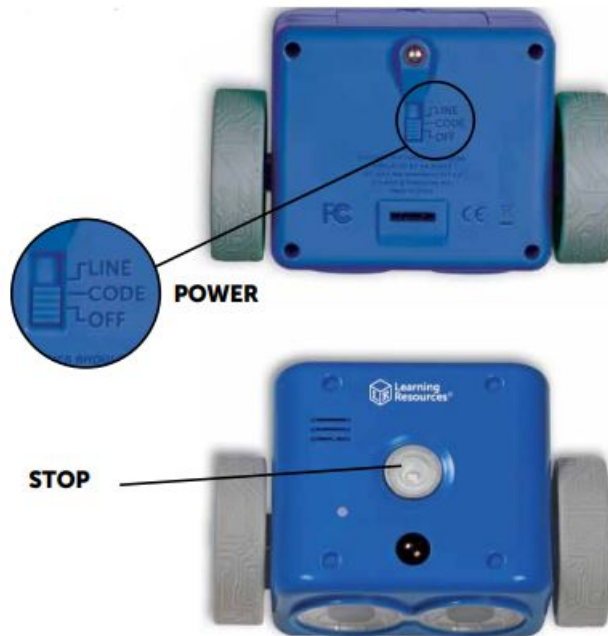
Using the Remote Programmer

You can program Botley using the Remote Programmer. Press these buttons to enter commands, then press TRANSMIT

FORWARD (F)
Botley moves forward 1 step (approximately 8", depending on the surface).
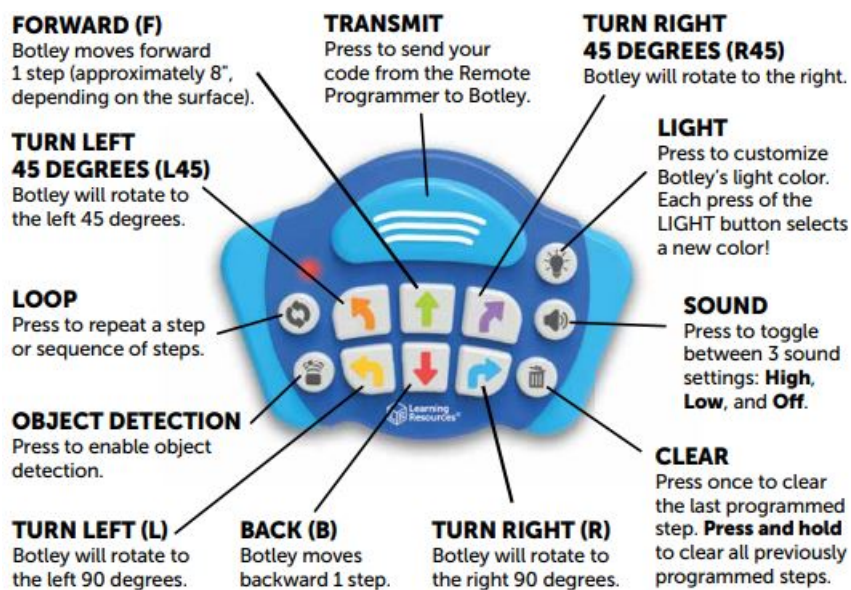
TURN LEFT 45 DEGREES (L45)
Botley will rotate to the left 45 degrees.

LOOP
Press to repeat a step or sequence of steps.

OBJECT DETECTION
Press to enable object detection.

TURN LEFT (L)
Botley will rotate to the left 90 degrees.

TRANSMIT
Press to send your code from the Remote Programmer to Botley.

BACK (B)
Botley moves backward 1 step.

TURN RIGHT 45 DEGREES (R45)
Botley will rotate to the right.

LIGHT
Press to customize Botley's light color. Each press of the LIGHT button selects a new color!

SOUND
Press to toggle between 3 sound settings: **High**, **Low**, and **Off**.

CLEAR
Press once to clear the last programmed step. **Press and hold** to clear all previously programmed steps.

TURN RIGHT (R)
Botley will rotate to the right 90 degrees.

Inserting Batteries

Botley requires (3) three AAA batteries. The Remote Programmer requires (2) two AAA batteries. Please follow the directions for battery installation on page 7.
Note: When the batteries are low on power, Botley will beep repeatedly and functionality will be limited. Please insert new batteries to continue using Botley.

Getting Started

In CODE mode, each arrow button you press represents a step in your code. When you transmit your code, Botley will execute all the steps in order. The lights on top of Botley will glow at the beginning of each step. Botley will stop and make a sound when he completes the code. STOP Botley from moving at any time by pressing the center button on top of Botley. CLEAR deletes the last programmed step. Press and hold to delete ALL steps. Note that the Remote Programmer retains code even if Botley is turned off . Press CLEAR to start a new program. Botley will power down if left idle for 5 minutes. Press the center button on top of Botley to wake him up.

Start with a simple program. Try this:

1. Slide the POWER switch on the bottom of Botley to CODE.
2. Place Botley on the fl oor (he works best on hard surfaces).
3. Press the FORWARD (F) arrow on the Remote Programmer.
4. Point the Remote Programmer at Botley and press the TRANSMIT button.
5. Botley will light up, make a sound to indicate the program has been transmitted, and move forward one step.

Note: If you hear a negative sound after pressing the transmit button:

- Press TRANSMIT again. (Do not re-enter your program— it will remain in the Remote Programmer memory until you clear it.)
- Check that the POWER button on the bottom of Botley is in the CODE position.
- Check the lighting of your surroundings. Bright light can aff ect the way the Remote Programmer works.
- Point the Remote Programmer directly at Botley.
- Bring the Remote Programmer closer to Botley

Now, try a longer program. Try this:

1. Press and hold CLEAR to delete the old program.
2. Enter the following sequence: FORWARD, FORWARD, RIGHT, RIGHT, FORWARD (F, F, R, R, F).
3. Press TRANSMIT and Botley will execute the program.

Tips:

1. STOP Botley at any time by pressing the center button on top of him.
2. You can transmit a program from up to 6′ away depending on the lighting. Botley works best in ordinary room lighting. Bright light will interfere with transmission.
3. You can add steps onto a program. Once Botley completes a program, you can add more steps by entering them into the Remote Programmer. When you press TRANSMIT, Botley will restart the program from the beginning, adding on the additional steps at the end.
4. Botley can perform sequences of up to 150 steps! If you enter a programmed sequence that exceeds 150 steps, you'll hear a sound indicating the step limit has been reached.

Loops
Professional programmers and coders try to work as effi ciently as possible. One way to do this is by using LOOPS to repeat a sequence of steps. Performing a task in the fewest steps possible is a great way to make your code more effi cient. Every time you press the LOOP button, Botley will repeat that sequence.

Try this (in CODE mode):

1. Press and hold CLEAR to delete the old program.
2. Press LOOP, RIGHT, RIGHT, RIGHT, RIGHT, LOOP again (to repeat the steps).
3. Press TRANSMIT. Botley will perform two 360s, turning completely around twice.

Now, add a loop in the middle of a program.
Try this:

1. Press and hold CLEAR to delete the old program.

2. Enter the following sequence: FORWARD, LOOP, RIGHT, LEFT, LOOP, LOOP, BACK.

3. Press TRANSMIT and Botley will execute the program. You can use LOOP as many times as you'd like, as long as you don't exceed the maximum number of steps (150).

Object Detection & If/Then Programming
If/Then programming is a way to teach robots how to behave in certain conditions. Robots can be programmed to use sensors to interact with the world around them. Botley has an object detection (OD) sensor that can help Botley "see" objects in his path. Using Botley's sensor is a great way to learn about If/Then programming.

Try this (in CODE mode):

1. Place a cone (or similar object) about 10 inches directly in front of Botley.

2. Press and hold CLEAR to delete the old program.

3. Enter the following sequence: FORWARD, FORWARD, FORWARD (F,F,F).

4. Press the OBJECT DETECTION (OD) button. You'll hear a sound and the red light on the Remote Programmer will stay lit to indicate that the OD sensor is on.

5. Next, enter in what you would like BOTLEY to do if he "sees" an object in his path—try RIGHT, FORWARD, LEFT (R,F,L).

6. Press TRANSMIT.

Botley will execute the sequence. IF Botley "sees" an object in his path, THEN he will perform the alternate sequence. Botley will then fi nish the original sequence.

Note: Botley's OD sensor is between his eyes. He only detects objects that are directly in front of him and at least 2″ tall by 11⁄2″ wide. If Botley isn't "seeing" an object in front of him, check the following:

- Is the POWER button on the bottom of Botley in the CODE position?

- Is the OBJECT DETECTION sensor on (the red light on the programmer should be lit)?

- Is the object too small?

- Is the object directly in front of Botley?

- Is the lighting too bright? Botley works best in ordinary room lighting. Botley's performance may be inconsistent in very bright sunlight.

Note: Botley will not move forward when he "sees" an object. He'll just honk until you move the object out of his way.

Botley's Light Sensor

Botley has a built-in light sensor! In the dark, Botley's eyes will light up! Press the LIGHT button to customize Botley's light color. Each press of the LIGHT button selects a new color!

Code by Color! (in CODE mode)

Code Botley to create a colorful light and music display! Press and hold the LIGHT button on the remote programmer until Botley plays a short melody. Now you can program your very own unique light show.

- Use the color arrow buttons to program your color sequence. Press TRANSMIT to start the light show.
- Botley's eyes will light up according to the programmed color sequence while Botley dances to the beat.
- Add on to the light show by pressing more color arrow buttons. Program up to 150 steps!
- Press and hold CLEAR to clear out your light show. Press and hold the LIGHT button to start a new show.

Note: If you press the same button twice in a row, the color will stay on twice as long.

Botley Says! (in CODE mode)

Botley just LOVES playing games! Try playing a game of Botley says! Only the F,B,R, and L arrow keys are used in this game.

- Press and hold CLEAR on the remote programmer. Enter code F,R,B,L, and press TRANSMIT to start the game.
- Botley will play a note and fl ash a color (e.g., green). Repeat the note by pressing the corresponding button (FORWARD) on the remote programmer, followed by TRANSMIT. Use Botley's eyes as a guide. For example, if they light up RED, press the red arrow button.
- Botley will then play the same note, plus one more. Repeat the pattern back to Botley and press TRANSMIT.
- If you make a mistake, Botley will start a new game.
- If you can repeat 15 notes in a row, in the correct order, you win! Press and hold CLEAR to exit.

Black Line Following

Botley has a special sensor underneath him that allows him to follow a black line. The included boards have a black line printed on one side. Arrange these in a path for Botley to follow. Note that any dark pattern or color change will aff etc his movements, so be sure there are no other color or surface changes near the black line. Arrange the boards like this:

Botley will turn around and go back when he reaches the end of the line.

Try this:

1. Slide the POWER switch on the bottom of Botley to LINE.
2. Place Botley on the black line. The sensor on the bottom of Botley needs to be directly over the black line.

3. Press the center button on top of Botley to start linefollowing. If he just keeps spinning around, nudge him closer to the line—he'll say "Ah-ha" when he fi nds the line.

4. Press the center button again to stop Botley—or just pick him up!

You can also draw your own path for Botley to follow. Use a white piece of paper and a thick black marker. Hand-drawn lines must be between 4mm and 10mm wide and solid black against white.

Detachable Robot Arms
Botley comes equipped with detachable robot arms, designed to help him perform tasks. Snap the headgear onto Botley's face, and insert the two robot arms. Botley can now move objects like the balls and blocks included in this set. Set up mazes and try to build a code to direct Botley to move an object from one place to another.
Note: The object detection (OD) feature will not function well when the detachable robot arms are attached. Please remove the detachable robot arms when using this feature. The headgear also includes a sliding cover for Botley's light sensor. Slide the switch back to cover Botley's sensor. Now Botley's eyes will stay lit!

Coding Cards
Use the coding cards to keep track of each step in your code. Each card features a direction or "step" to program into Botley. These cards are color-coordinated to match the buttons on the Remote Programmer. We recommend lining up the coding cards horizontally in sequence to mirror each step in your program.

Secret Codes!
Enter these sequences on the Remote Programmer to make Botley perform secret tricks! Press CLEAR before trying each one.

Icon	Name	CODE + TRANSMIT	Notes
	"All aboard!"	B,B,B,F	Press CLEAR to stop
	Shark attack!	B,B,B,R	
	Botley construction crew	B,B,B,L	
	Police	B,B,B,L45	Press CLEAR to stop
	Dinosaur	B,B,B,R45	
	Ghost	B,B,F,F	Turn off the lights and see what happens!
	Kiss!	F,F,B,B	Place something in front of Botley!
	The old lighthouse	R,B,L,F	Press CLEAR to stop
	Ribbit!	F,B,B,B	
	Yikes!	B,L,F,R	Place something in front of Botley!
	Greetings!	F,F,R,R,F	
	Whee!	F,F,F,F,F,F	
	Botley is a little dizzy!	R,R,R,R,L,L,L,L	

For even more tips, tricks, and hidden features, please visit **http://learningresources.com/Botley**.

Multiple Botleys!
To avoid interference with other remote programmers, you can pair your remote programmer to Botley, allowing you to use more than one Botley at a time (up to 4):

- Press and hold the FORWARD (F) button until you hear a <beep-beep-beep> sound.
- Now, enter in a four-button sequence (e.g., F,F,R,R).
- Press TRANSMIT.
- You will hear a "fanfare" sound. Now your remote is paired to one Botley and cannot be used to control another one.
- Use the included numbered stickers to identify each Botley and its corresponding remote programmer (e.g., place the 1 sticker on both a Botley and the remote programmer to which it belongs). Labeling your Botleys in this way will reduce confusion and make coding play easier to manage.

Note: When using multiple Botleys at one time, the range of transmission is reduced. You will need to bring the remote programmer a little closer to Botley when transmitting code.

Troubleshooting

Remote Programmer/Transmitting codes
If you hear a negative sound after pressing the TRANSMIT button, try the following:

- Check the lighting. Bright light can affect the way the Remote Programmer works.
- Point the Remote Programmer directly at Botley.
- Bring the Remote Programmer closer to Botley.
- Botley can be programmed a maximum of 150 steps. Be sure a programmed code is 150 steps or fewer.
- Botley will power down after 5 minutes if left idle. Press the center button on top of Botley to wake him up. (Botley will try to get your attention four times before he powers down.)
- Be sure fresh batteries are inserted properly in both Botley and the Remote Programmer.
- Check that nothing is obstructing the lens on the programmer or on top of Botley.

Botley's moves
If Botley isn't moving properly, check the following:

- Be sure Botley's wheels can move freely and nothing is blocking movement.
- Botley can move on a variety of surfaces, but works best on smooth, flat surfaces like wood or flat tile.
- Do not use Botley in sand or water.
- Be sure fresh batteries are inserted properly in both Botley and the Remote Programmer.

Object Detection
If Botley isn't detecting objects or working erratically using this feature, check the following:

- Remove the detachable robot arms before using object detection.
- If Botley isn't "seeing" an object, check its size and shape. Objects should be at least 2 inches tall and 1½ inches wide.
- When OD is on, Botley will not move forward when he "sees" an object—he'll just stay in place and honk until you move the object out of his way. Try reprogramming Botley to go around the object.

Secret Codes

- You may happen to enter a sequence of steps that matches one of the secret codes listed on the previous page. If so, Botley will perform the trick initiated by the secret code and override the manual input.
- Please note that the ghost secret code will only work if the light sensor is activated. Be sure to turn off the lights

Battery Information
When the batteries are low on power, Botley will beep repeatedly. Please insert new batteries to continue using Botley.
Installing or Replacing Batteries
WARNING! To avoid battery leakage, please follow these instructions carefully. Failure to follow these instructions can result in battery acid leakage that may cause burns, personal injury, and property damage.

Requires: 5 x 1.5V AAA batteries and a Phillips screwdriver

- Batteries should be installed or replaced by an adult.
- Botley requires (3) three AAA batteries. The Remote Programmer requires (2) two AAA batteries.
- On both Botley and the Remote Programmer, the battery compartment is located on the back of the unit.
- To install batteries, first, undo the screw with a Phillips screwdriver and remove the battery compartment door. Install batteries as indicated inside the compartment.
- Replace the compartment door and secure it with a screw.
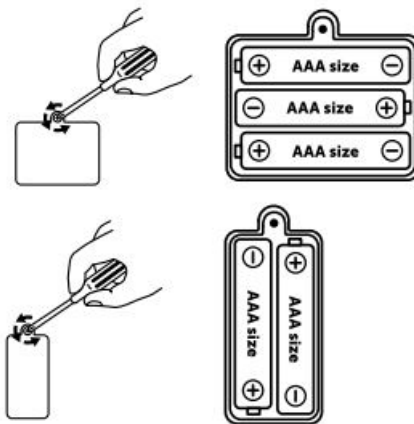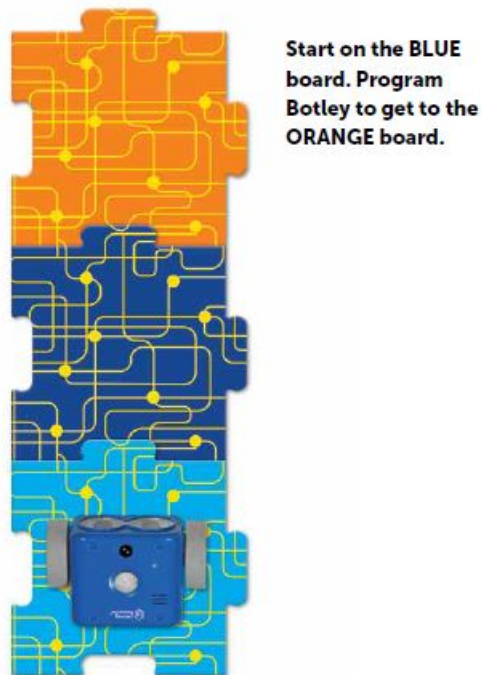
Battery Care and Maintenance Tips

- Use (3) three AAA batteries for Botley and (2) two AAA batteries for the Remote Programmer.
- Be sure to insert batteries correctly (with adult supervision) and always follow the toy and battery manufacturer's instructions.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Do not mix new and used batteries.
- Insert batteries with the correct polarity. Positive (+) and negative (-) ends must be inserted in the correct directions as indicated inside the battery compartment.
- Do not recharge non-rechargeable batteries.
- Only charge rechargeable batteries under adult supervision.
- Remove rechargeable batteries from the toy before charging.
- Only use batteries of the same or equivalent type.
- Do not short-circuit the supply terminals.
- Always remove weak or dead batteries from the product.

- Remove batteries if the product will be stored for an extended period of time.
- Store at room temperature.
- To clean, wipe the surface of the unit with a dry cloth.
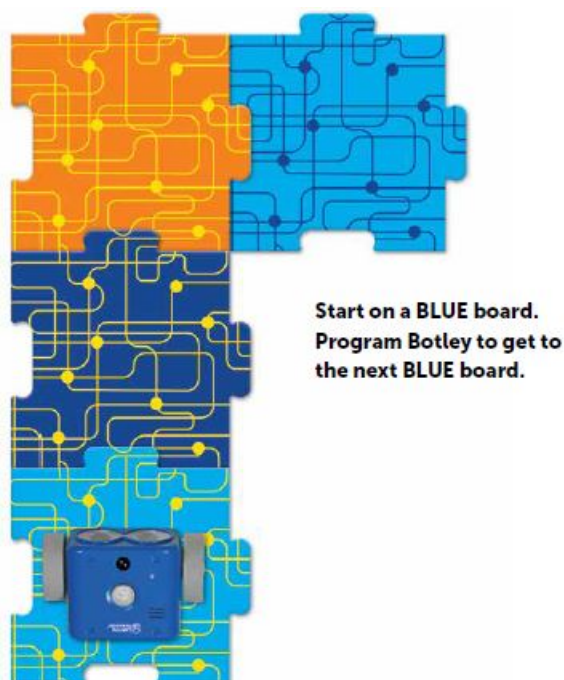- Please retain these instructions for future reference.

Coding Challenges

The coding challenges below are designed to get you familiar with coding Botley. They are numbered in order of diffi culty. The fi rst few challenges are for beginning coders, while challenges 8–10 will really test your coding skills.
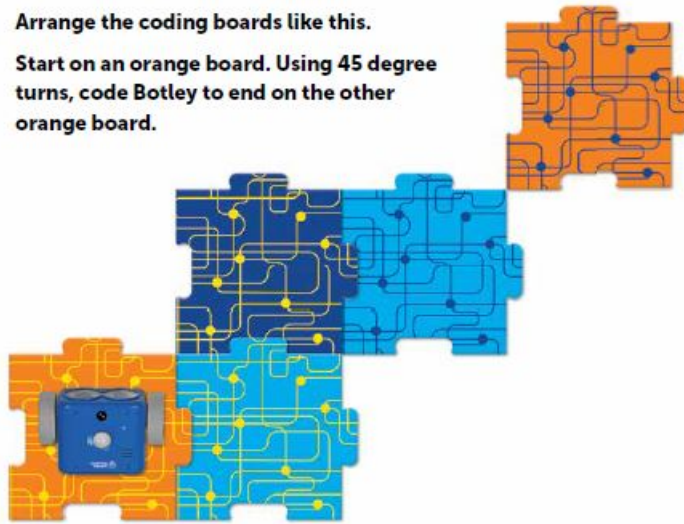
1. Basic Commands

Start on the BLUE board. Program Botley to get to the ORANGE board.

2. Introducing Turns

Start on a BLUE board. Program Botley to get to the next BLUE board.

3. Multiple Turns

Arrange the coding boards like this.

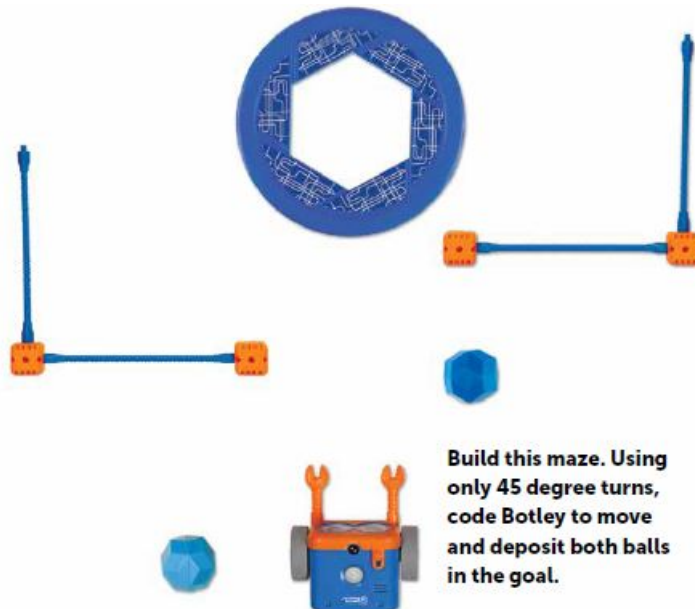Start on an orange board. Using 45 degree turns, code Botley to end on the other orange board.

4. Programming Tasks

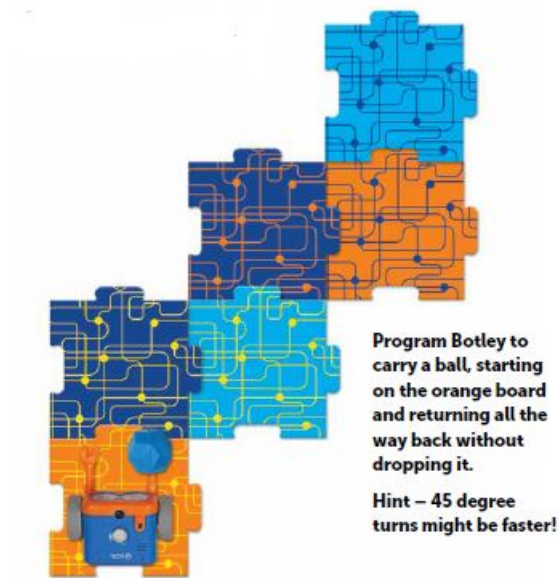Program Botley to move and deposit the blue ball in the blue goal.
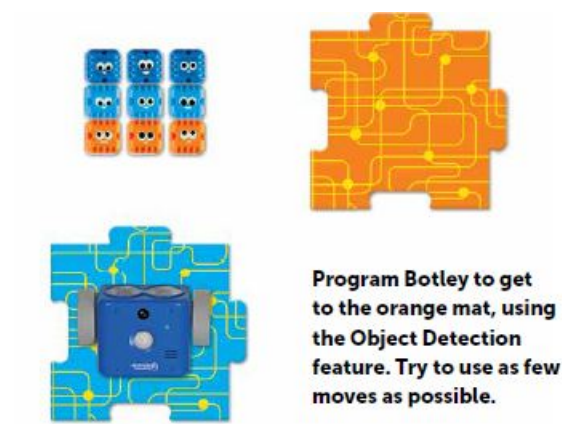
5. Programming Tasks

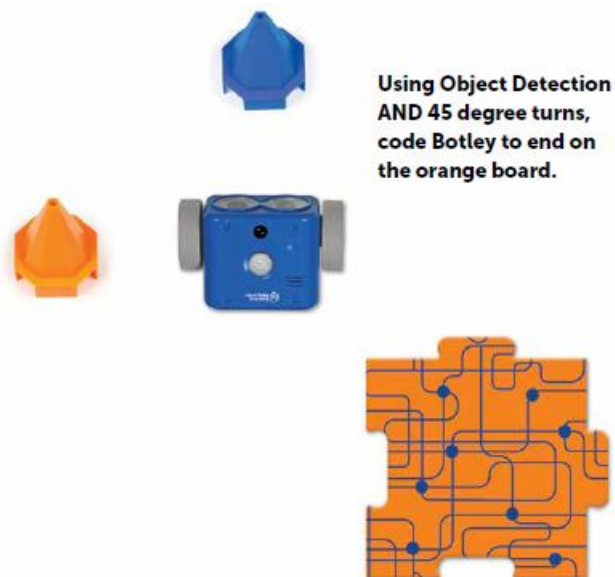Build this maze. Using only 45 degree turns, code Botley to move and deposit both balls in the goal.

6. There and Back

Program Botley to carry a ball, starting on the orange board and returning all the way back without dropping it.

Hint – 45 degree turns might be faster!

7. If/Then/Else

Program Botley to get to the orange mat, using the Object Detection feature. Try to use as few moves as possible.

8. Think Ahead!

Using Object Detection AND 45 degree turns, code Botley to end on the orange board.

9. Make a Square

Using the LOOP command, program Botley to move in a square pattern.

10. Combo Challenge

Using both LOOP and Object Detection, program Botley to move from the blue board to the orange board.

Using both LOOP and Object Detection, program Botley to move from the blue board to the orange board.
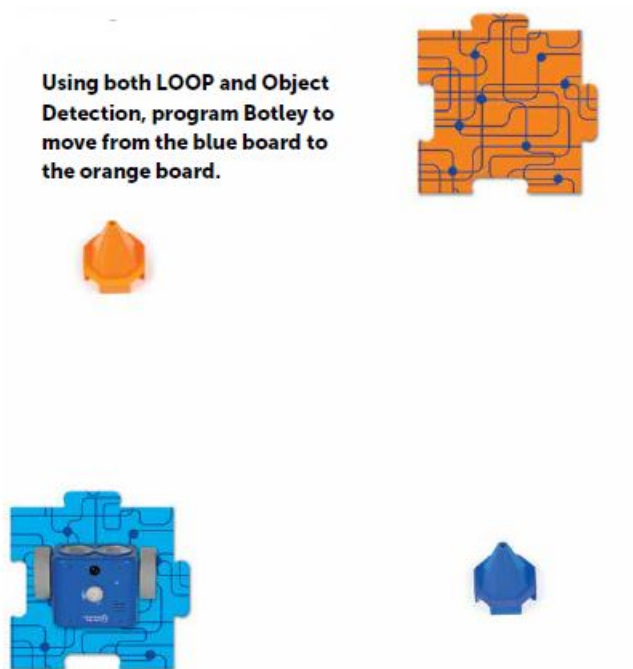
Learn more about our products at **LearningResources.com**.

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- Please retain the package for future reference.
- Made in China. LRM2938-GUD

FCC WARNING

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference and
2. this device must accept any interference received, including interference that may cause undesired operation.

Documents / Resources
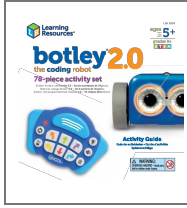
Learning Resources Botley The Coding Robot Activity Set 2.0 [pdf] Instructions
Botley The Coding Robot Activity Set 2.0, Botley, The Coding Robot Activity Set 2.0, Robot Activity Set 2.0, Activity Set 2.0

References

- **Learning Resources® | Kids Educational Toys & Learning Games**
- **Botley 2.0 the Coding Robot | Learning Resources**