

Learning Resources LER2935 Coding Robot Activity Set User Manual

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Learning Resources LER2935 Coding Robot Activity Set



Introducing Botley, the Coding Robot

Coding is the language we use to communicate with computers. When you program Botley using the included Remote Programmer, you engage in a basic form of "coding." Beginning with the very basics of sequence programming is a great way to get started in the world of coding. So why is learning this so important? Because it helps teach and encourage:

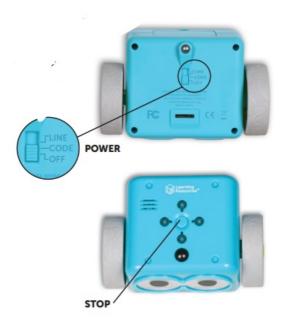
- 1. Basic coding concepts
- 2. Advanced coding concepts like If/Then logic
- 3. Critical thinking
- 4. Spatial concepts
- 5. Collaboration and teamwork

Set includes:

- 1 Botley robot
- 1 Remote
- Programmer
- Detachable
- · robot arms
- 40 Coding cards
- 6 Boards
- 8 Sticks
- 12 Cubes
- 2 Cones
- 2 Flags
- 2 Balls
- 1 Goal
- 1 Sticker sheet

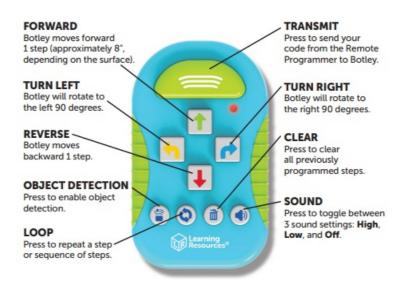
Basic Operation

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



Using the Remote Programmer

You can program Botley using the Remote Programmer. Press these buttons to enter commands.



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 9.

Note:

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

Getting Started

In CODE mode, each arrow button you press represents a step in your code. When you transmit your code to Botley, he will execute all the steps in order. The lights on the top of Botley will light up 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 him.

CLEAR: deletes all previously programmed 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 Botleyto CODE.
- 2. Place Botley on the floor (he works best on hard surfaces).
- 3. Press the FORWARD 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's 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 affect 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 CLEAR to delete the old program.
- 2. Enter the following sequence: FORWARD, FORWARD, RIGHT, RIGHT, FORWARD.
- 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. Depending on the lighting, you can transmit a program from up to 10' away (Botley works best in ordinary room lighting).
- 3. You can add steps to 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 80 steps! If you enter a programmed sequence that exceeds 80 steps, you'll hear a sound indicating the step limit has been reached.

Loops

Professional programmers and coders try to work as efficiently 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 efficient. Every time you press the LOOP button, Botley repeats that sequence.

Try this (in CODE mode):

- 1. Press CLEAR to delete the old program.
- 2. Press LOOP, 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 CLEAR to delete the old program. sensor that can help him "see" objects in his path. Using this sensor is a great way to learn about If/ Then programming.
- 2. Enter the following sequence: FORWARD, LOOP, RIGHT, LEFT, LOOP, LOOP, REVERSE.
- 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 (80).

Object Detection & If/Then Programming

If/Then programming is a way to teach robots how to behave in certain conditions. We use If/Then behavior and logic all the time. For example, IF it looks like rain outside, THEN we might carry an umbrella. Robots can be programmed to use sensors to interact with the world around them. Botley has an object detection (OD) sensor that can help him "see" objects inn his path. Using this 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 CLEAR to delete the old program.
- 3. Enter the following sequence: FORWARD, FORWARD, FORWARD.
- 4. Press the OBJECT DETECTION (OD) button. You'll hear a sound and the red light on the programmer will stay lit to indicate that the OD sensor is on.



- 5. Next, enter what you would like BOTLEY to do if he "sees" an object in his path—try RIGHT, FORWARD, LEFT.
- 6. Press TRANSMIT.

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

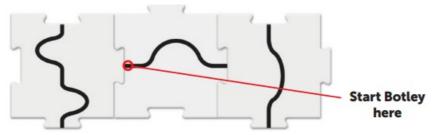
Note: Botley's OD sensor is between his eyes. He only detects objects that are directly in front of him and are at least 2" tall by 1 1/2" wide. If Botley isn't "seeing" an object in front of him, check the following:

- 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. His 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.

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 affect 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:

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 the line following. If he just keeps spinning around, nudge him closer to the line—he'll say "Ah-ha" when he ends the line.
- 4. Press the center button again to stop Botley—or just pick him up!

You can also draw your 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 gear 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.

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, and to help follow and remember the sequence.

Easter Eggs and Hidden Features

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

- 1. Forward, Forward, Right, Right, Forward. Then press Transmit. Botley wants to say "Hi!"
- 2. Forward, Forward, Forward, Forward, Forward (that's Forward x 6). Then press Transmit. Botley is having fun now!
- 3. Right, Right, Right, Right, Left, Left, Left, Left, and Transmit. Uh-oh, Botley's a little dizzy.

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

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 with a maximum of 80 steps. Be sure a programmed code is 80 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. (He'll 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 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 their movement.
- Botley can move on a variety of surfaces but works best on smooth, flat surfaces like wood or flat tiles.
- 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:

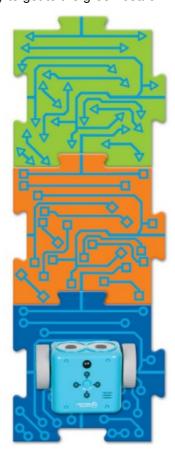
- Remove the detachable robot arms before using object detection.
- If Botley isn't "seeing" an object, check its size and shape. Objects should be at least 2" tall and 11/2" wide.
- When OD is on, Botley will not move forward when he "sees" an object—he'll just stay in place and honk until you move the object out of his way. Try reprogramming Botley to go around the object.

Coding Challenges

The coding challenges below are designed to get you familiar with coding Botley. They are numbered in order of difficulty. The first few challenges are for beginning coders, while challenges 8–10 will test your coding skills.

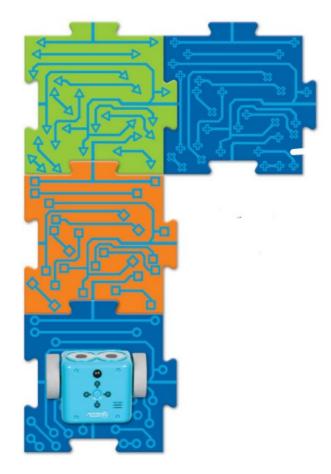
1. Basic Commands

Start on the BLUE board. ProgramBotley to get to the green board.



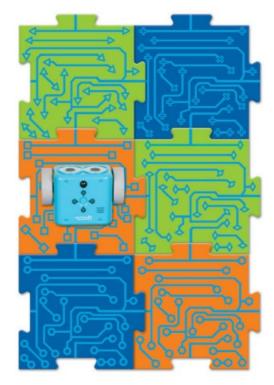
2. Introducing Turns

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



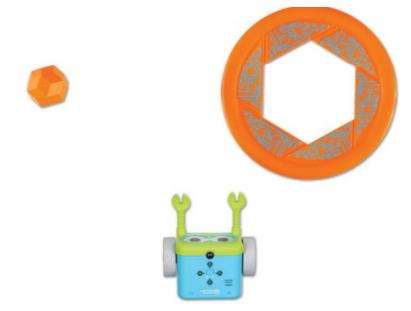
3. Multiple Turns

Start on an orange board. Program Botley to "touch" every board and return to its starting board.



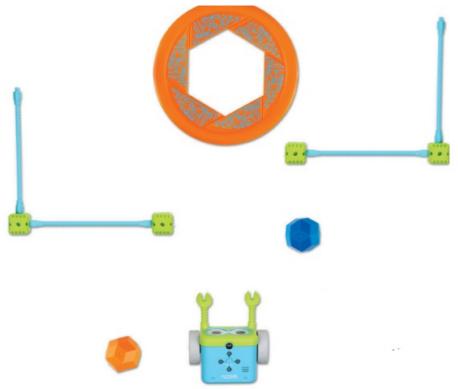
4. Programming Tasks

Program Botley to move and deposit the orange ball in the orange goal.



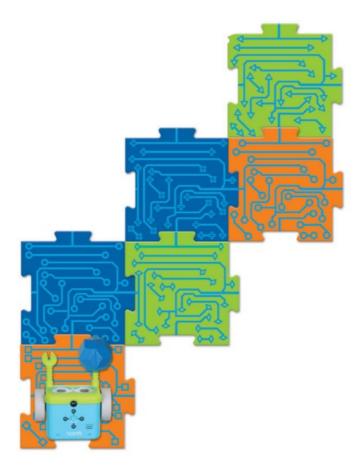
5. **Programming Tasks**

Program Botley to move and deposit both the orange ball and blue ball in the orange goal.



6. There and Back

Program Botley to carry a ball, starting on the orange board and returning dropping it.



7. If/Then/Else

Program Botley to move forward in 3 steps to get to the orange board. Then, use Object Detection to go around the blocks.







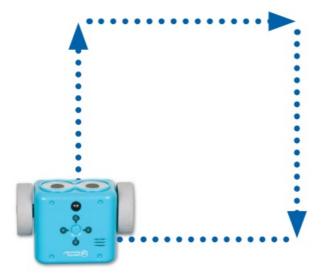
8. Nowhere to Run

Using Object Detection, program Botley to keep turning around between the objects.



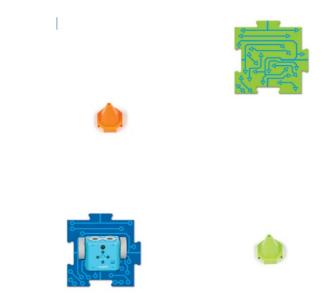
9. Make a Square

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 green board.



Battery Information

When the batteries are low on power, Botley will beep repeatedly. Please insert new batteries to continue using Botley.

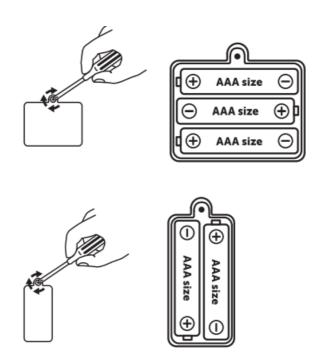
Installing or Replacing Batteries

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 the 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 the battery 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.
- Store at room temperature.
- To clean, wipe the surface of the unit with a dry cloth.
- Please retain these instructions for future reference.

FAQs

What is the Learning Resources LER2935 Coding Robot Activity Set designed for?

The Learning Resources LER2935 Coding Robot Activity Set is designed to teach children basic coding skills through interactive play.

How does the Learning Resources LER2935 help in developing problem-solving skills?

The Learning Resources LER2935 enhances problem-solving skills by allowing kids to plan and execute sequences of commands to navigate the robot through different challenges.

What age group is the Learning Resources LER2935 Coding Robot Activity Set suitable for?

The Learning Resources LER2935 Coding Robot Activity Set is suitable for children aged 5 and up.

What components are included in the Learning Resources LER2935 set?

The Learning Resources LER2935 set includes a programmable robot, coding cards, a map, and various activity accessories.

How does the Learning Resources LER2935 teach coding concepts to children?

The Learning Resources LER2935 teaches coding concepts by allowing children to input a sequence of directional commands that the robot follows.

What skills besides coding does the Learning Resources LER2935 help develop?

The Learning Resources LER2935 helps develop critical thinking, sequencing, and fine motor skills in addition to coding.

How does the Learning Resources LER2935 encourage creativity in children?

The Learning Resources LER2935 encourages creativity by allowing children to create their own coding challenges and sequences for the robot to follow.

How can the Learning Resources LER2935 be used to introduce STEM education?

The Learning Resources LER2935 introduces STEM education by incorporating elements of science, technology, engineering, and mathematics into interactive play.

What makes the Learning Resources LER2935 Coding Robot Activity Set unique?

The Learning Resources LER2935 is unique because it combines hands-on play with educational coding activities, making learning fun and engaging for children.

How does the Learning Resources LER2935 Coding Robot Activity Set promote teamwork?

The Learning Resources LER2935 promotes teamwork by encouraging children to work together to solve coding challenges and complete activities.

What educational benefits does the Learning Resources LER2935 offer?

The Learning Resources LER2935 offers educational benefits such as improving logical thinking, enhancing sequencing skills, and introducing basic programming concepts.

What is the Learning Resources LER2935?

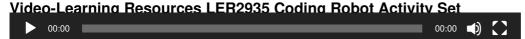
The Learning Resources LER2935 is the Botley Coding Robot Activity Set, designed to teach children coding concepts through interactive play. It includes 77 pieces such as a remote programmer, coding cards, and obstacle building pieces.

What age group is the Learning Resources LER2935 suitable for?

The Learning Resources LER2935 is suitable for children aged 5 and up, making it an excellent educational tool for early learners.

What types of activities can children do with the Learning Resources LER2935?

Children can engage in various activities such as programming the robot to navigate mazes, follow coding cards, and build obstacle courses, fostering critical thinking and problem-solving skills.



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Reference Link

Learning Resources LER2935 Coding Robot Activity Set User Manual-device report

References

User Manual

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