

Coding Blocks Used in LEGO® Education SPIKE™ Essential Lessons

Coding Blocks

The *Coding Support* video tutorials on the Professional Development Platform feature these coding blocks:

Motor Blocks – Control the motors.

Movement Blocks – Control two motors at the same time.

Event Blocks – Start or trigger a program.

3x3 Light Blocks – Turn on/off the 3x3 Light Matrix or show different patterns of light.

Loop Blocks – Repeat a sequence of code forever or a specified number of times.

Wait For and Wait Until Blocks (only Word blocks) – Wait for a specific amount of time or for a certain condition to occur.

You can explore these additional blocks in the LEGO® Education SPIKE™ App, or right-click on the block to go directly to its help section:

Sound Blocks – Add different sounds, effects, and music to the program.

Display Blocks – Add different displays and images to the program.

If Then/If Then Else (only Word Blocks) – If a certain condition is true, the program will play the first action set; if not, it will ignore the action (*If Then*). If a certain condition is true, the program will play the first action set; else it will play the second action set (*If Then Else*).

Random Blocks – Pick a random light or random number within the specified range.

Bar Graph Blocks – Add a bar graph to the Programming Canvas. For example, to show how many times a selected color has been detected by the Color Sensor.

The tables on the following pages show you which coding blocks are used in each LEGO® Education SPIKE™ Essential lesson. Use the tables to:

- Identify and select lessons that teach specific programming blocks.
- Think about what support your students will need during the lesson.





Unit: Great Adventures

Coding Blocks & Purpose	L1: Boat Trip	L2: Arctic Ride	L3: Cave Car	L4: Animal Alarm	L5: Underwater Quest	L6: Treehouse Camp	L7: Great Desert Adventure	More Support
Motor Blocks	●				●	●	○	Coding tutorial, in-app help
Movement Blocks		●					○	Coding tutorial, in-app help
Event Blocks				●		●	○	Coding tutorial, in-app help
3×3 Light Blocks			●	●			○	Coding tutorial, in-app help
Loop Blocks			●		●		○	Coding tutorial, in-app help
Wait For and Wait Until Blocks (only Word Blocks)			●	●			○	Coding tutorial, in-app help
Sound Blocks	●			●	●		○	In-app help
Display Blocks	●	●	●			●	○	In-app help
If Then/If Then Else (only Word Blocks)							○	In-app help
Random Blocks			●				○	In-app help
Bar Graph Blocks				●			○	In-app help

● = Used in lesson ○ = (optional for open challenge)



Unit: Amazing Amusement Park

Coding Blocks & Purpose	L1: The Fast Lane	L2: Classic Carousel	L3: The Perfect Swing	L4: Snack Stand	L5: Twirling Teacups	L6: The Spinning Ferris Wheel	L7: The Most Amazing Amusement Park	More Support
Motor Blocks		●	●	●	●	●	○	Coding tutorial, in-app help
Movement Blocks							○	Coding tutorial, in-app help
Event Blocks					●	●	○	Coding tutorial, in-app help
3×3 Light Blocks	●					●	○	Coding tutorial, in-app help
Loop Blocks	●	●	●		●	●	○	Coding tutorial, in-app help
Wait For and Wait Until Blocks (only Word Blocks)	●	●		●		●	○	Coding tutorial, in-app help
Sound Blocks	●	●	●	●	●	●	○	In-app help
Display Blocks		●					○	In-app help
If Then/If Then Else (only Word Blocks)							○	In-app help
Random Blocks	●					●	○	In-app help
Bar Graph Blocks	●			●			○	In-app help

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Unit: Happy Traveler

Coding Blocks & Purpose	L1: River Ferry	L2: Taxi! Taxi!	L3: Hovering Helicopter	L4: Swamp Boat	L5: Cable Car	L6: Big Bus	L7: Get Around Town	More Support
Motor Blocks	●		●		●	●	○	Coding tutorial, in-app help
Movement Blocks		●					○	Coding tutorial, in-app help
Event Blocks			●	●		●	○	Coding tutorial, in-app help
3x3 Light Blocks				●			○	Coding tutorial, in-app help
Loop Blocks				●			○	Coding tutorial, in-app help
Wait For and Wait Until Blocks (only Word Blocks)		●			●	●	○	Coding tutorial, in-app help
Sound Blocks	●		●	●	●	●	○	In-app help
Display Blocks	●		●		●	●	○	In-app help
If Then/If Then Else (only Word Blocks)							○	In-app help
Random Blocks							○	In-app help
Bar Graph Blocks				●			○	In-app help

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Unit: Crazy Carnival Games

Coding Blocks & Purpose	L1: Mini Mini-Golf	L2: Bowling Fun	L3: High Stick Hockey	L4: A-Maze-Ing	L5: Avoid the Edge	L6: Junior Pinball	L7: Creative Carnival Game	More Support
Motor Blocks	●	●	●		●	●	○	Coding tutorial, in-app help
Movement Blocks							○	Coding tutorial, in-app help
Event Blocks				●			○	Coding tutorial, in-app help
3×3 Light Blocks	●			●			○	Coding tutorial, in-app help
Loop Blocks			●			●	○	Coding tutorial, in-app help
Wait For and Wait Until Blocks (only Word Blocks)		●	●		●	●	○	Coding tutorial, in-app help
Sound Blocks	●	●	●	●	●	●	○	In-app help
Display Blocks		●				●	○	In-app help
If Then/If Then Else (only Word Blocks)					●		○	In-app help
Random Blocks		●	●			●	○	In-app help
Bar Graph Blocks				●			○	In-app help

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Unit: Quirky Creations

Coding Blocks & Purpose	L1: Good Morning Machine	L2: Big Little Helper	L3: High-Tech Playground	L4: Trash Monster Machine	L5: Winning Goal	L6: Literary Randomizer	L7: Your School Creation	More Support
Motor Blocks	●		●	●	●		○	Coding tutorial, in-app help
Movement Blocks		●					○	Coding tutorial, in-app help
Event Blocks	●	●	●	●	●		○	Coding tutorial, in-app help
3×3 Light Blocks			●			●	○	Coding tutorial, in-app help
Loop Blocks	●	●	●	●	●	●	○	Coding tutorial, in-app help
Wait For and Wait Until Blocks (only Word Blocks)	●	●	●	●	●	●	○	Coding tutorial, in-app help
Sound Blocks	●	●	●	●	●	●	○	In-app help
Display Blocks	●			●	●	●	○	In-app help
If Then/If Then Else (only Word Blocks)							○	In-app help
Random Blocks					●	●	○	In-app help
Bar Graph Blocks				●			○	In-app help

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