LEGO education

Make It Smarter and Faster

Design, build and program a robotic creature that can sense its environment and respond by moving.

Connect

Design Brief

Design, build and program a robotic creature that can sense its environment and respond by moving.

Brainstorm

Discuss different solutions to the design brief.

Think about:

• What kind of creature can it be?

• How can it move?

• Of what does it need to be aware so that it stays safe, well fed and warm (or cool)?

• Is it looking for food, a safe place to hide or a warm place to soak up the sun?

• Will the creature need to move fast or slow?

• Will it need to turn?

• Will it need to go backward?

Select the Best Solution

Describe the solution that you have agreed to build and program.

Think about examples from your brainstorming discussion. Then explain why you chose this solution for the design brief.

Construct

Build and Program

Now you are ready to start building and programming your solution!

As you work on your solution:

1. Describe one part of your design that worked especially well.

2. Describe one design change that you had to make.

3. What will you try next?

As you test your design solution, use the table for recording your findings.

Contemplate

Test and Analyze

How well does your solution satisfy the design brief? Record your data. Name the columns and rows, such as Trial Number, Robot Behavior, and Observations.

Review and Revise

Take a moment to reflect on your robot solution.

Think about:

• Does your robot move when the sensor is activated?

• If not, what will you change to make the robot's ability to sense and respond more obvious?

• What other behaviors can you add to the robot to make it more realistic?

Describe two ways you could improve your robot.

Continue

Communicate

Here are some ideas:

• Create a video of your project, especially your final presentation and your robot's performance.

• Explain some important features of your software program.

• Produce a building guide for your model by taking a series of photographs as you deconstruct it.

• Include an image of your program with comments.

• Add a team photograph!

Congratulations! What will you design next?