

Make It Smarter and Healthier

Design, build and program a robotic creature that senses “food” and moves to get it.

Connect

Design Brief

Design, build and program a robotic creature that:

- Eats (senses “food” and moves to get it)
- Shows that it is moving (e.g., sensor data shows feedback on motion)
- And “dies” (e.g., program stops if it doesn’t get food or stays still)

Brainstorm

Discuss different solutions to the design brief.

Think about:

- What type of creature is it?
- What type of food does it need?
- How will it recognize the “food” you provide?
- How does the creature move?
- How can you track the eating and motion of your creature?
- How do you time the life of your robot when it eats and moves?
- How do you stop the robot if it does not eat or move?

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, Sensor, Data Range, and Data Errors.

Review and Revise

Take a moment to reflect on your robot solution.

Think about:

- What did your robot need to survive?
- What was your robot programmed to know?
- What could you add to your robot to make it seem more "alive"?

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?