

Make It Move Up An Incline

Design, build and program a robot that can move itself up an incline as steep as possible.

Connect

Design Brief

Design, build and program a robot that can move itself up an incline as steep as possible.

Brainstorm

Discuss different solutions to the design brief.

Think about:

- How can gears increase the motor power?
- How can a program control the motor power?
- How does the need to move up an incline affect the design?

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, Incline Angle, Gear Ratio, Motor Power, Time, and Observations.

Review and Revise

Take a moment to reflect on your robot solution.

Think about:

- Does the robot move up the incline easily or with difficulty?
- Have you tested a range of settings to optimize the motor power?
- What are some ways that others have solved the problem?

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?