



## Insect Robot

### Conventions used in this document:

Blue: Questions from facilitator to children

Brown: Children's anticipated response

Black: Comments, notes, and plan for the facilitator

### Session flow

Sr. No.	Activity	Talking points	Time allotted
1	Introduction	<ul style="list-style-type: none"><li>● How does the insect move?</li><li>● How can you make a mechanical robot?</li></ul>	15 mins
2	Group formation and worksheet distribution	Assuming you have already explained to them how to use the worksheet. If not please refer ' <a href="#">General instructions for the facilitator</a> '	15 mins
3	Ideation and Material gathering	Students will come up with the design of the project and list of the material required for the completion of the challenge. Here children should have filled the worksheet till the material list.	15 mins
4	Project making	During this time, children will build the project.	45 mins
5	Worksheet completion	It will be difficult for children to complete the worksheet while making the project. So give them extra time to complete the worksheet once the project is completed.	15 mins
6	Final Discussion	Ask children about what they learned while building an insect robot.	15 mins



## Introduction

You can give them the instruction sheet and tell them to read the challenge for the day. You can then open with the following question.

What are we going to make today?

A simple robot with 6 legs.

What does that sound like? What has six legs?

Insects.

How does the insect move?

In a random direction.

## How to help children when they are stuck using the Inquiry driven approach

### 1. Leg of the insect

They might be stuck at what they can use for legs.

You can ask them to look around and see what they can use as a leg. Ask them to think about how insects' legs look. They can use twigs, icecream sticks, bamboo sticks, paper rolls, etc. anything that can hold the weight

### 2. Balancing

Balancing is a very important part of this project. There are two main reasons for balancing being off.

- a. Weight is more on one side and less on another side. Ask children to make sure that the weight is balanced and the insect is not toppling anywhere.
- b. Legs of the insect can be another reason for lack of balance.

## Why the project may not work

1. Balancing is off. Legs aren't able to support the robot.
2. The motor isn't working.
3. The battery is drained. You can check with DMM if the battery is providing enough voltage.
4. The fan/ propeller is too short to move the robot.
5. The circuit is not properly connected.



## Final Discussion

What did you learn from this project?

Balancing is important for the insect to move.

What happens if the weight is high?

The insect might not move or move slowly.

How do you think the project is working?

When the propeller is pushing the air in one direction it makes the insect robots move in the opposite direction.