

# INTRODUCTION TO MECHATRONICS

A learning initiative brought to you by Digicate and GE Africa



## **KIT CONTENTS**

1 Electronic circuit board, 1 Programming unit, 2 Motors with wires, 4 Wheels, 1 Battery 9V, 1 Chassis, 1 Axle, 2 Axle support blocks , adhesive, USB cable and 4 screws.

## 1. HOW TO ASSEMBLE YOUR KIT:

## Step 1

Remove contents from the kit and press along the perforated lines indicated as 1 and 2.

## Step 2

Assemble 1 into hexagon and glue ends together. Assemble 2 into hexagon and glue ends together.

## Step 3

Use adhesive to fit hexagon 1 to the front of the chassis. Use adhesive to fit hexagon 2 to the end of chassis where axle will be fitted.

## Step 4

Fasten electronics circuit board between hexagon 1 and 2 with arrow on electronic circuit board pointing forward to hexagon 1.

## Step 5

Fit battery between hexagon 1 and 2.

## Step 6

Clip motors onto either side of chassis on hexagon 1 and attach each wheel with a screw and tigthen the screw while using pliers.

## Step 7

Connect motor wires to electronic circuit board.

## Step 8

Lock and glue each axle support block onto either side of chassis on hexagon 1 and attach each wheel with a screw while using pliers.

## Step 9

Program your robotic rover (follow "2. How to program your robot" steps.)

## Step 10

Connect battery and your robotic rover will activate in 2 seconds.

## WARNING

Considering the potential hazards related to a toy and the age group for whom the toy is intended. Product has sharp edges and small parts. Use with adult supervision. Products intended for use in school and in other educational institutions under the supervision of an adult in a teaching context. Not intended for children under 3 years. Handle with care.



## 2. HOW TO PROGRAM YOUR ROBOT:

## Step 1

Visit the website at www.digicate.co.za and download the EduBot program and install.

## Step 2

Switch off robot power supply (unplug the battery).

## Step 3

Plug in the USB cable from your computer to the programmer board, then plug the programmer board onto the controller.

## Step 4

Click on the "Connect" button on your computer.

## Step 5

Select either forward, reverse, left or right commands by clicking on the respective buttons.

## Step 6

Remember to add distance values to each movement command e.g. 1.54 (m). Please note that the default measurement unit for distance in this case is always in metres (m).

## Step 7

Once you have finished entering your desired commands, click on the "Build Program" button, you will be presented with a message once the program finishes building your application.

## Step 8

Once you have finished building your program, click on either the "Program Robot" button in order to download your code to the robot or the "Erase Program" button in order to erase your program to repeat the process.

## Step 9

Once you have finished programming your robot, unplug your programming board from the contoller board and plug in the battery. Your robot will immediately follow the actions that you have programmed.

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Handle with care