

EXPLORING RUGGED ROBOT



Introducing Rugged Robot

Rugged Robot is our first ever programmable robot designed for outdoor use! Designed for robust challenges, Rugged Robot is capable to navigate all terrains including, sand, grit, dirt, grass and even water. Boasting Bluetooth functionality, Rugged Robot can also be controlled via a free tablet app or the TTS TacTile reader.

Big Idea Thinking

Using Rugged Robot can support children in developing their computational thinking skills to a high level; our outdoor programmable robot will be able to carry out the most challenging activities. With 3 speed settings, test children to anticipate how fast the robot needs to move depending on the terrain.

Connection to Learning

The following activities highlighted in this guide support children in learning enhanced computing skills and applying computational thinking. Encourage children to engage in open-ended problems, which require skills such as team work and reasoning using Rugged Robot in a variety of contexts.

Rugged Robot Features

- Designed for outdoor use
- Free programming app available
- Rechargeable
- 3 speed settings
- Compatible with TacTile Reader



**COMPLIMENTARY RESOURCE
FOR RUGGED ROBOT**

TacTile Reader



AGE
4-5

INSPIRATIONAL IDEAS

EXPLORING RUGGED ROBOT



Key Focus

To make a Rugged Robot course.

What we want to achieve

- To be inventive.
- To consider the space required.
- To begin to estimate distances.

Preparation

A Rugged Robot.
Wooden blocks, pipes etc. to create a course.

Activity

Ask children to create an enclosed track or course in which to use their Rugged Robot. They might work together to see how long or complex they can make it. Provide a selection of possible resources children might use to create the course outdoors – it would be great on a field or grassy area if possible. Children might find their own natural materials. They will need to ensure the course is wide enough all the way along. Children might add bends for the Robot to negotiate. Once finished, they will need to programme Rugged Robot to get from the beginning to end. Estimate first and then try it out. How many turns will it take to complete the course?

Extension Activity

Once children have built and negotiated one course, get them to add extra obstacles, such as a hill of sand or a bridge!



AGE
5-7

INSPIRATIONAL IDEAS

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Key Focus

Programme Rugged Robot using the TacTile Reader.

What we want to achieve

- To use Bluetooth and the TacTile Reader to programme Rugged Robot.
- To use problem solving skills.

Preparation

A Rugged Robot.
A TacTile Reader.

Activity

Once children are used to programming using a robot such as Bee-Bot, the next step is to understand that Bluetooth may be used to allow programming separate from the device itself. (You might want to explain that Bluetooth is a wireless technology used for exchanging data over short distances.)

Using Rugged Robot, demonstrate how the same commands can be remotely activated through Bluetooth. The TacTile Reader provides an interim 'physical' demonstration, taking the commands from the robot itself onto separate tiles. This gives children greater understanding before taking the next step along the programming journey – using a computer, tablet or phone.

Allow children to experiment with the tiles. Each command lights up as it is activated, so debugging is easier.

Once children are familiar with what can be done, they can set each other challenges, either indoors or outside; a larger area will be more beneficial.

Extension Activity

Extend children's learning by using 45 degree turns as well as repeat function tiles. (The TacTile Reader Extension Pack).



AGE
7-9

INSPIRATIONAL IDEAS

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Key Focus

Create an outdoor Rugged Robot obstacle course.

What we want to achieve

- To work together to solve a problem.
- To use the different speed settings and obstacle sensor.

Preparation

A Rugged Robot.

A variety of items to create an obstacle course.

Activity

Explain that the task is to make an obstacle course to use with Rugged Robot. The course must include at least one bridge and one tunnel, as well as other obstacles to be negotiated. Demonstrate the sensor function, which can be turned on or off. When switched on and the robot meets an obstacle, it will reverse and rotate 45 degrees before carrying out the rest of the programme. Children will need to programme carefully if they are to successfully navigate the course in one go and may well need to adjust either the programme or the course to be successful.

Extension Activity

Time each other to see who can complete the course fastest.

Plan an investigation into the steepest incline the Rugged Robot can negotiate.