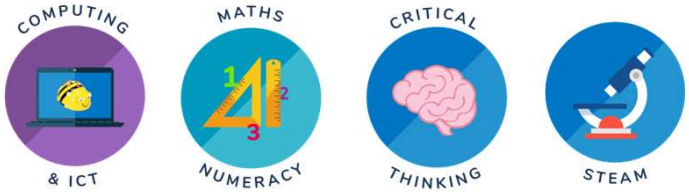
Loti-Bot : The Shape Explorer

Use Loti-Bot to explore and develop skills in programming and coding, whilst embedding learning around shape, space and measure.



SKILLS AND LEARNING

- Develop skills in control and programming.
- Design, write and debug simple programs.
- Use sequence and repetition in programs.

- Identify, describe and compare the properties of 2D shapes.
- Use and develop critical thinking skills.

RESOURCES

- Loti-Bot and App
- Selection of 2-D shapes (regular and irregular)
- Bee-Bot Shape Mat
- Pens
- Large paper or desktop for drawing using Loti-Bot
- Rulers or metre sticks

INTRODUCTION

Today, Loti will be helping us. to extend our learning about shapes. If they have not met before, introduce learners to Loti-Bot and the Loti app, or if they have worked with Loti before, spend some time recapping the different features, focussing on those that will be used today such as the pen mechanism, and drawing

Review children's knowledge and understanding about the properties of 2-D shapes (you may want to tailor the shapes you use, based on children's prior learning). You could look at regular and irregular shapes, exploring the different properties, including sides and angles within the shape.

ACTIVITIES

Activity 1 – Properties of shapes

- Using a shape mat (the Bee-Bot shape mat is ideal), ask children to set each other challenges to programme Loti to travel between shapes based on their properties. For example, can you make Loti travel from a shape with three sides to a shape with 4 right angles? Children will need to use their skills of estimating or measuring to calculate the distance and plan their route.

Activity 2 – Drawing shapes with Loti-Bot

- Challenge children to first choose a 2-D shape from a selection of shapes and then programme Loti-Bot to draw that shape using the adjustable pen mechanism. For example, can you draw a triangle with Loti-Bot? They will need to bring together their knowledge of programming, length, shape and angles.
- You could add additional challenge, by asking them to ensure the sides are the exact same length as the original. Or, make the shape larger or smaller than the original, e.g. draw a triangle that is two times bigger?
- For regular shapes, children can explore including the repeat function, for example when drawing a square.
- If the shape drawing goes wrong, ask them to review, reflect and debug their program.

REFLECTION

Embed children's learning by finishing with a quick debugging activity. Show children a program for drawing a triangle (or other shape), but make sure there is at least one error in it. Ask children to try and spot the mistake and suggest what they would change.

Reflect on what the children have learnt today about both programming and shape properties.