

Bee-Bot Project

Session 1

Subject - Maths

Topic – Shapes

Target group – Kinder2/Year1

Time – 45mins

Resources

- ✓ PowerPoint Presentation - ***Session 1 Shapes.pps***
- ✓ 2 Bee-Bots
- ✓ 1 transparent plastic mats
- ✓ 1 set of cards with shapes - ***Cards for Bee-Bot Mat - Shapes.pdf***
- ✓ 1 Shape Mat (various pre-made mats are available)
- ✓ 2 worksheets – ***Worksheet1 Shapes.pdf*** and ***Worksheet2 Shapes.pdf***

Objectives

Children will learn:

- ✓ to program the Bee-Bot

Children will revise:

- ✓ 2D-Shapes – triangle, circle, square, rectangle
- ✓ Basic colours – red, yellow, green, blue
- ✓ Size – large, small

Presentation of topic

- ✓ The session starts off with the PowerPoint presentation - ***Session 1 Shapes.pps***. The children are presented with the Bee-Bot image and they are asked what shape this new friend has – bee. The teacher is to explain that this is a special bee as it is a robot and can do things.
- ✓ The children are asked to mention things that robots usually do: move, talk/sound, light, etc... It is explained that this special robot can do a number of these things and the children are asked whether they would like to actually have this robot in class.
- ✓ The Bee-Bot is presented to the children and the different functions of the robot are shown. The emphasis here is to show that this is a robot just like other robots, but then again they are asked what was the teacher doing to make it move, light, emit a sound. The teacher was pressing buttons on the bee's back.
- ✓ Here one can elaborate on a name fit for the new friend being presented to the class, some may wish to keep calling it Bee-Bot while others may opt for a more friendly name as Billy the Bee-Bot.
- ✓ The different buttons on the Bee-Bot are presented one by one with Slides 2-6. The actual use of these buttons is shown to the children by asking them to press the buttons themselves. Example the forward button followed by the Go button are used to make the Bee-Bot move forward and Go. The important use of the Clear button here is emphasized for the floor robot to “forget” the orders we had previously set. The animation presented on each slide ought to help the pupils understand better what the floor robot will do once a sequence of buttons is pressed.
- ✓ Slides 7-14 ought to get the children thinking as to which way the Bee-Bot ought to

move and for how many paces to reach to the target (flower image). The use of the Clear button prior to programming the robot is here emphasized once again.

- ✓ The pupils are then encouraged to name the shapes that the Bee-Bot is thinking about and questions may here be elicited as to the colour of the shapes and about different objects we find in real life that have the form of the shape being mentioned. The children may also be asked to find things around them that have the form of the shape being introduced. This slide serves to link to the Bee-Bot activity that the children will be engaged in, to have a further chance to handle and use the floor robot in a constructive way.

Group Activities

- ✓ Following the presentation of the topic, the class can be divided into groups where they will be actively engaged in various activities that can be carried out related to this topic. Activities suggested will focus on the use of the Bee-Bots. Alternative activities can also be carried out. Worksheets are also being suggested. It is recommended that the different groups rotate from one activity to another for all the children to have a chance at handling and programming the Bee-Bot. In this way children will have the opportunity to practice what they have learnt using various methods and technologies.

- Activity 1: Bee-Bot activity - ***Cards for Bee-bot Mat - Shapes.pdf***

The children are presented with a mat on which they can see different shapes of different colours and different sizes. The children are given the opportunity to handle the Bee-Bot and program it to the shape that is asked by the teacher in charge of the activity. Here a blank chart divided into 4x4 15cm squares is used together with the activity cards that have been prepared. Activity cards can be stuck to the chart using blu-tac. Ideally a transparent plastic mat is placed over the mat and cards for the Bee-Bot to have a smooth surface on which to move.

- Activity 2: Bee-Bot activity – ***Shapes Mat***

The children are presented with a mat on which they can see different shapes of different colours and different sizes. The children are given the opportunity to handle the Bee-Bot and program it to the shape that is asked by the teacher in charge of the activity. Here a pre-made chart that can be bought in conjunction with the Bee-Bots is used. However one can create one's own custom-made mats to use in class (as in Activity 1).

- Activity 3: Worksheet - ***Worksheet1 Shapes.pdf***

The children are given a worksheet with two exercises. In the first exercise the children are to help the little triangle find its way through the maze to its family. In the second exercise the children are presented with a clown face that is made up of different shapes. They have to answer simple questions as for example how many circles are used.

- Activity 4: Worksheet - ***Worksheet2 Shapes.pdf***

The children are given a worksheet on which they are presented with a picture of a house that is made up of different shapes of different sizes. The children are to

colour in the worksheet following the legend given for the different shapes being used. Example: Colour circles yellow, etc ...

Conclusion

- ✓ To summarise what has been learnt, the children are encouraged to follow the last part of the presentation ***Session 2 Shapes.pps*** Slides 17-20. The class is once again presented with the Bee-Bot placed on a mat and an image of a flower. The children are encouraged to find different ways with which one can get the Bee-Bot to land on the flower. Three examples are shown, thus highlighting the fact that there isn't one correct answer but one can arrive to the target (flower image) using different routes.