ACTIVITY IDEAS FOR DASH IN THE MATHS CLASSROOM

Dash robots are an exciting hands-on learning tool. These interactive robots have the ability to manoeuvre around the floor in all directions, sense objects, flash LED lights and even playback audio. They operate through a variety of apps that not only develop students' programming skills but also help build creativity, problem solving and critical thinking. Here are some creative ways to incorporate using Dash in your maths lessons.

1

Battle Shapes

One Dash robot shared between 2 pairs of students. On a sheet of 5x5 grid paper, both teams randomly draw four 2D shapes inside any of the squares. Don't let the opposing team see where the shapes are. Tape out a 5x5 grid on the floor to create a giant version for Dash to play. Using the Blockly app, teams take turns in programming to move the Dash robot to specific coordinates on the grid mat and ask if they have captured a shape. If yes the team has another turn. If no, time to swap over. The team that captures all the shapes is the winner.

2

Treasure Hunt

Adapt a BattleShapes activity into finding the pirate treasure. Each team hides 2 treasures and 4 traps on their grid. They can play rock, paper, scissors to decide which pair goes first. The starting team works out a strategy to program Dash around the grid. If Dash hits a trap teams swap over. The team that finds the treasures first is the winner!

3

A-Maze-ing

Students work in teams to design a maze on paper and build it with materials (e.g. blocks, boxes). The maze must be wide enough for Dash to get through without knocking down any walls and include forward movement with 45 and 90 degree turns. The maze could include bridges and obstacles to navigate. Teams then challenge each other to program Dash to move through the maze without any accidents.

4

Playing with Perimeters

Use Dash to identify, classify, describe, and find the perimeter of quadrilaterals. Using a ruler and tape, students measure and tape out a range of quadrilaterals with sides of 50 cm. Next they write an algorithm for Dash to follow the taped line of each shape.

Challenges could include:
· Create a square with sides of 50 cm. How far does Dash travel?
· Can you create a square with a 100 cm perimeter?
· Create a rectangle of 2 sides of 10 cm and 2 sides of 40 cm. How far does Dash travel?
· Can you create a rectangle with a 60 cm perimeter?

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