NumberDay

Battle of the robots!

This game is an exhilarating way to develop and practise:

- measuring
- working with averages
- working with decimals
- recording data.

You could have a robot battle in the classroom or make it a whole school competition.

How to raise money

Pupils are sponsored for making their robot and for the distance their pellet travels,
eg **10p per square x 50 squares = £5.00**.

Alternatively, parents and carers can make a donation.

What you need:

- unused cardboard boxes and tubes, plastic bottles, pots and cups
- parts for the robot's pellet launcher, eg a bendy ruler, lollipop sticks, elastic bands
- rolled up paper for the pellets
- items for decorating the robot, eg pens, paints, glitter and stickers
- sticky tape or glue
- a tape measure
- Battle of the Robots data collection sheet, one per person (register online to access).

How to play:

1. Build your robot. Use something sturdy, such as a strong cardboard box as the base. Fix all the pieces together firmly with either sticky tape or glue.
2. Design your robot's pellet launcher. Experiment with different designs until you find the right launcher and pellets. Be careful where you direct your pellets and make sure they're not too heavy. Small balls of paper are good.
3. Get creative and decorate your robot with paints, pens, stickers or glitter.
4. Now put your robot to the test. Find an open space, like a corridor or a long room.
5. Mark a starting line with chalk or an object. With your robot on the starting line, fire a pellet and mark where it lands.
6. Use your tape measure to measure how far the pellet has travelled.
7. Record the distance on your data collection sheet. Write it in metres, centimetres and millimetres in one box and in centimetres and millimetres in the other box.
8. Repeat twice and record the distances.
9. Work out and record the best, median and mean flights. Do you have a mode flight distance? What is the range of the distances?

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Data Collection Sheet

Data	1st Launch	2nd Launch	3rd Launch
In meters and in centimetres			
In centimetres			

Data Analysis

Personal Best:

Median result:

Mode result:

Mean result:

Range of results:

The **Median**, **mode** and **mean** are all types of averages:

Median: the number in the middle if you place the numbers in order of size

Mode: The most common result Mean: The total of all the numbers, divided by the amount of numbers

Range: the difference between the highest and lowest numbers

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