

Key Stage 2 Activity

Hula Hoop Challenge

Who can spin the hula hoop more times - boys or girls? Set your pupils this hula hoop challenge to find out.

Hula hooping instructions can be found on the mathcymru website.

Introduction:

■ Before starting the activity, ask your pupils to predict the result. Why have they predicted this?

What you will need:

- Hula hoop
- Coloured sticky tape

What to do:

- Attach a small strip of the coloured sticky tape to the hoop. This will act as a marker for counting the spins.
- Pupils take turns to hula hoop.
- Count the number of spins each pupil produces, up to a maximum of fifty spins. One spin is measured by the marker on the hoop returning to its start position. For ease of counting, it is recommended that at the start of each attempt the marker is at the front of the hoop.
- Calculate the average number of spins for boys and for girls. Create a graph of your results. What do they show? Were the pupils' predictions correct?

Curriculum Links for Challenge and Extension Activities

Skills

Solve mathematical problems

Pupils should be given opportunities to:

- Select and use appropriate mathematics, materials, units of measure and resources to solve problems in a variety of contexts.
- Try different approaches; use a variety of strategies, sequences of operation and methods of calculating.
- Use their prior knowledge to find mathematical facts that they have not learned, and to solve numerical problems.
- Use flexible and effective methods of computation and recording.

Communicate mathematically

Pupils should be given opportunities to:

- Use correct mathematical language, notation, symbols and conventions to talk about or to represent their work to others.
- Recognise, and generalise in words, patterns that arise in numerical, spatial or practical situations.
- Read information from charts, diagrams, graphs and texts.
- Use a variety of methods to represent data.

Reason mathematically

Pupils should be given opportunities to:

- Check results and interpret solutions to calculations; check against the context of the problem that the solutions are reasonable.
- Investigate and generalise repeating patterns and relationships; search for pattern in their own results.

- Present and interpret a wide range of graphs and diagrams that represent data.
- Make and investigate mathematical hypotheses, predictions and conjectures.

Range

Number

Pupils should be given opportunities to:

- Count, read, write and order whole numbers.
- Use a variety of mental methods of computation; extend informal written methods to non-calculator methods.
- Use the relationships between the four operations, including inverses; recognise situations to which the different operations apply.

Measures and money

Pupils should be given opportunities to:

- Choose appropriate standard units of length and time.

Handling data

Children should be given opportunities to:

- Collect data for a variety of defined purposes, including those that arise from their own questions, and from a variety of sources.
- Use and present data in a variety of ways including tables, pictograms, charts, bar charts, line graphs, diagrams and text.
- Calculate and use the mode, median, mean and range of a set of discrete data.

Key Stage 2 Activity

Extension Activity 1: Diameter of the Hoops

Does the diameter of the hoop make a difference to the number of spins that can be produced? Carry out this investigation comparing two different hoops to find out.

What you will need:

- Two hula hoops with different diameters
- Coloured sticky tape

What to do:

- Before you begin, predict the outcome. Will a wider diameter make it easier or harder to hula hoop? Try to give a reason for your prediction.
- Attach a small strip of the coloured sticky tape to each hoop. This will act as a marker for counting the spins.
- Pupils take turns to hula hoop with each hoop.
- Count the number of spins each pupil produces with each hoop, up to a maximum of fifty spins. One spin is measured by the marker on the hoop returning to its start position. For ease of counting, it is recommended that at the start of each attempt the marker is at the front of the hoop.
- Results should be recorded in a table.



- Calculate the average number of spins for each hoop.
- Create a graph of the results. What do they show? Were your predictions correct?
- Can you explain your results?

Extension Activity 2: Hula Hoop Game

This energetic game demonstrates an alternative use for the hula hoops. It combines maths calculations with play for a fun learning experience.

What you will need:

- Four hula hoops
- Lots of coloured plastic balls

What to do:

- Generate some maths problems beforehand.
- Lay the hoops in a row on the ground, equally spaced apart.
- When the children are presented with a calculation (for example, 4 plus 3 minus 5), they need to place four balls in the first hoop, three balls in the second hoop, five balls in the third hoop and the answer in the fourth.
- The children will need to work out the answers to each calculation between themselves. This will require team work and cooperation.
- You can make the challenge easier by laying a card on the floor between the hoops showing the operation symbol (for



- example, + or -) and the equals sign.
- Try leaving the second or third hoop empty and giving the children the final answer to make the game more challenging.
- Try splitting the class into 2 or 3 teams. Give each team four hoops. The team who completes the sum correctly in the fastest time wins one point.