Thinking while Moving - Mathematics

Balancing act

Stage 3 mathematics | **Strand: Statistics and probability** | **Sub strand: Data**

Activity set-up

- Students in their own space either on the playground or in the classroom

How to play

Part 1: Estimate

- Students estimate how many throws they think they will catch out of 7. Record this data to later graph in a side-by-side column graph.
- Students stand on one leg, 5 metres apart and count how many times they catch the bean bag. Each student must pass the bean bag 7 times.
- Students record their findings.
- Teacher asks 'What type of table could you use to record your estimations and results?'
- After the first attempt, students record their next estimation based on their last results.
- Students complete the task 5 times.
- Teacher asks; "Do you think you will improve?" "If you had to do this again how would you plan to keep your data?" Can anyone create a table that would work for everyone?"

Part 2: Exploring data

- Challenge students to create a two-way table that is titled "Estimation v's My Reality - catching on one foot" using the data collected in this task.
- Students then use the data in their table to construct a side-by-side column graph.
- Teacher asks "What are the essential components of a side by side column graph?" "What data are we comparing?" "How does this data need to be structured in order for us to compare?"

Part 3: Communicating results

Students communicate their findings to their peers and discuss results of the task using the questioning prompts.

Increase/decrease challenge

Mathematical: First draw a table to record your catches and then play the game again and record your throws.
Physical adjustment: If a student is having trouble balancing or catching reduce the space between the partners or let them use 2 hands to catch.

Equipment/Resources

- whiteboard
- marker
- beanbags

What's some of the maths

Mathematicians use efficient ways to collect and present data such as tables and graphs.
Mathematicians can use estimation and predict outcomes in investigations and experiments.
Mathematicians can talk, reason and share their thinking with others.

Let's talk and think like mathematicians

Questioning prompts:
What will the graph look like?
How much data did you need to collect?
How was yours the same or different to everyone else's?
What do you need to remember for next time?
How did you refine your data representations?

Suggested mathematics outcomes

MA3: 1WM: describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions
MA3: 2WM: selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations
MA3: 3WM: gives a valid reason for supporting one possible solution over another
MA3- 18SP: uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables

NSW GOVERNMENT

THINKING while MOVING