

mathem

mathematics activities to promote regular exercise

TEACHER NOTES

Physical Activity is one of the key learning areas of the Health & Physical Education curriculum and your students need at least 30 minutes of physical activity every day. In this second of the Push Play series, we focus on the Mathematics curriculum for multi-level motivational activities and in particular, the processes of number, statistics and measurement.



ACTIVITY ONE: WHO PLAYS WHAT? STATISTICAL INVESTIGATIONS AT LEVELS 1-2

A POPULARITY POLL

- Talk about and list all the games that children play at school and after school.
- Go through the list with the class and identify all the games that involve running or walking. Make into a new list.
- Ask the students to name the running or walking game they like playing the most. Use ticks to indicate the number of students who vote for each game. Encourage individual students to give reasons for their choice.
- Have the class count up the number of ticks for each game and write the numeral representing each game's total.
- Spend some time discussing what the tick totals tell us, eg
 - which game gets the most ticks?
 - how many people play the game?
 - which game gets the fewest ticks?
 - how many people the game?
 - is it easier/quicker to look at a line of ticks or just use the total to tell us the most popular game?
- Ask students to suggest other ways they could show the popularity of the games. Introduce the idea of pictographs - a series or sequence of pictures - as another way of showing the number of students who choose each game (Also called pictograms).
- Have each student draw a 'self portrait' enjoying playing their favourite game/s. Make into a large pictograph wall chart.
- Spend some talking about what the pictograph shows.
- Have each student write the name of all their favourite games on cards.
- Collect the cards and arrange them into piles for both girls and boys. Make into a simple wall chart bar graph.
- Help children make statements about what each graph says.
- Display student's statements on the wall chart.



ACTIVITY TWO: MEASUREMENT ACTIVITIES AT LEVELS 1-2 HOW FAR AND HOW FAST

- Have each student throw a tennis ball as far as they can. Put in a named peg to record each student's throw.
- Ask students to suggest ways that they can measure how far each person throws, eg last whole foot, steps and strides.
- Encourage students to measure their and others throws' and record their measurements using non standard units of measurement. Talk about why there are different measurements for the same throws.
- Introduce metre rules/measuring tape and help students measure the throws. Record results.
- Using a measured course in the playground (50 metres), ask each student to run as fast as possible around the course.
- Can the students suggest how they could measure the time taken for each student to complete a lap. If possible, use a large classroom wall clock with a second hand and have students count out each second as every member of the class completes the course.
- Using pictographs and/or simple bar graphs, record how far each student can throw and how fast each student can run as a classroom wall chart. Talk about what is recorded.

ACTIVITY THREE: HEALTH PROMOTION ACTIVITIES: LEVELS 1-2

- Invite a health/fitness professional to talk to the students about the benefits of regular daily physical exercise.
- Enthuse the students to come up with other ideas on a how far and how fast theme to make into a daily class exercise programme, eg
 - how far can I throw a ball/ kick a ball?
 - how fast can I run around a tree and back?
 - how far/fast can I hop on one foot?
 - how far/how fast can I jump?
- Use these daily activities to consolidate and extend measuring and graphic recording skills.
- Record results daily and spend time discussing improved skills.



ACTION



ACTIVITY ONE:

STATISTICAL INVESTIGATIONS AT LEVELS 3-4

STATISTICS ARE VERY USEFUL

- Initiate a class discussion about how newspapers, radio and television use statistics in sport. Can the students give any examples, of current statistics **eg**
 - examine newspaper tables to find games played, won, lost, drawn, place in competition etc.
 - television rugby statistics of possession, rucks, penalties etc
- Can the students suggest how teams or coaches can make use of these statistics, **eg**
 - if a team is receiving too many penalties against them, what could this indicate and how could they improve this statistic?
- What statistics would top golfers look closely at? How could they use these to improve? **eg**
 - they could indicate a weakness in their game needing attention

COLLECTING STATISTICS

- Brainstorm a list of all the common sports played by the students at school and after school.
- Divide into groups, assign each group a sport, and challenge students to list the type of statistics they could collect related to their sport. Groups must also state the reason for collecting a specific statistic and explain how this will help a team or an individual. Some examples may need to be given, **eg**
Basketball/Netball
 - number of dropped passes
 - percentage of shots which score goals
 - number of times the ball is intercepted
- Choose several sports from the list and devise a round-robin competition for each sport involving all students and a different (fair) team composition for each sport.
- Run the competition over a series of weeks. Students, not playing at the time, become statisticians, closely observing the game and collecting the appropriate statistics.

- After each round is completed, allow time for the observers to record, collate and present their statistics to the class.
- Spend time discussing and interpreting the results, **eg**
 - were the methods of displaying appropriate and easy to interpret
- Have each team carefully analyse the statistics collected for their team. How can they use them to improve performance?
- Have teams devise skill programmes to remedy deficiencies.
- After each sporting competition is completed, use the statistics to present a team report on progress made.

ACTIVITY TWO:

MEASUREMENT HEALTH PROMOTION

- Invite a health/fitness professional to talk to the students to reinforce the benefits of regular exercise.
- Divide into groups and have each group to devise an interesting series of five challenges (one per day) to encourage other students to take part in regular physical exercise.
- Each activity must be based on a theme which can be measured, **eg**
 - how high can I? - how quickly can I?
 - how often can I ...? - how many times can I ...?
 - how far can I ...? - how close or accurately can I ...?
- On a weekly basis, each group assumes responsibility for promoting and running the challenges.
- Each challenge must be able to be measured and individuals must record their daily results in graphic or table form. Templates for recording individual progress must be designed by the group responsible for that week's challenges.
- Display all weekly results and highlight individual improvements.

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