

# Pedometer Activities





# Every Little Step We Take

## Objective:

Students will determine their average step count within a given period of time.

**English:** TS1.1, TS2.1, TS3.1

**Mathematics:** MS1.5, MS2.5, NS2.3, NS3.3, WMS2.2, WMS3.2, WMS2.5, WMS3.5

**Science and Technology:** INVS2.7, INVS3.7, UTS2.9, UTS3.9

## Materials:

Pedometers, paper and pencils.

## Procedures:

1. Review the instructions and ways to use the pedometer. Review how to wear, open and reset the pedometer.
2. Have each student wear a pedometer (Nb. Reset their pedometers before starting this activity). The teacher calls out "Go" and all students march around the room/space. After 60 seconds the teacher calls out "Stop". Students consult their pedometer and record the number of steps they have taken.
3. Each student should determine how many steps would be taken if they kept up the same pace for a different length of time:
  - Five minutes
  - Thirty minutes
  - One hour
4. Determine the class average (for 60 seconds of marching) by adding their step counts together and dividing by the number of students.





# Step 'n' Stride

## Objectives:

Students will use a pedometer to calculate their average stride length and the class average. They will use these calculations to predict distances on a map of the school and then use the pedometer to confirm these distances.

**Mathematics:** SGS2.3, SGS3.3, NS2.3, NS3.3, NS3.4, WMS3.1, WMS3.2

## Materials:

Pedometers, paper, pencils, a distance of known length (e.g. playground markings, the perimeter of the oval or quadrangle) and a map of the school grounds.

## Procedures:

1. Review the instructions and ways to use the pedometer.
2. Study and discuss the map.
3. Study and discuss the distances that will be measured e.g.
  - the classroom to the library
  - the library to the playground
  - the school office to the carpark etc.
4. Have each student calculate their average stride length by walking a known distance (e.g. the length of the oval = 30m) and dividing the distance (e.g. 30m) by the number of steps they took.
5. Using the map each student can estimate the number of steps it would take them to travel different distances, for example from the classroom to the library. Record the estimated number of steps in a table.
6. Then have students walk these distances. Using the pedometer count the actual number of steps taken and use the average stride length to calculate the distance walked. Record in the table and compare to the prediction.





# Feel the Burn!

## Objective:

Students will perform different activities to determine which burns more energy.

**English:** TS1.1, TS1.2, TS2.1, TS2.2, TS3.1, TS3.2

**Mathematics:** NS1.1, NS2.1, NS3.1

**Science and Technology:** INVS2.7, INVS3.7, UTS2.9, UTS3.9

## Materials:

Pedometers, paper, pencils and skipping ropes.

## Procedures:

1. Review the instructions and ways to use the pedometer.
2. The teacher can lead a discussion about kilojoule intake and how the body uses kilojoules (calories) as energy. For example:
  - In order to sustain life your body needs energy. The body gets energy (kilojoules/calories) from food and drink.
  - Different foods have different amounts of energy, for example an apple has less energy than a can of soft drink.
  - The body uses energy (kilojoules/calories) by processes such as sleeping, breathing, digesting and moving around.
  - Different types of activities burn more energy than others. For example running would burn more energy than walking.
3. Have the students hypothesise which activity uses more energy:
  - hopping
  - jogging
  - skipping
  - walking
  - marching
4. Divide students into groups and while wearing pedometers, each group performs one of the tasks for a set period of time. Record the number of steps and/or the number of kilojoules/calories used. If time permits, have students rotate through other activities.







# Pedometer Perimeter

## Objectives:

Students will measure and draw the perimeter of different areas.

**Mathematics:** MES1.1, MS1.1, MS2.1, MS3.1

## Materials:

Pedometers, paper and pencils.

## Procedures:

1. Review the instructions and ways to use the pedometer.
2. Discuss the key term 'perimeter' and how perimeters can be measured using pedometers:
  - the pedometer can count the number of steps taken, or
  - the pedometer can measure the distance in metres.

*Nb. The distance measurement is based on a standard step length, so may need to be adjusted for students.*
3. As a class, visit several different places within the school grounds and have students measure the perimeter of each area, for example:
  - the oval / covered outdoor learning area (COLA)
  - the quadrangle
  - the playground markings / play areas
4. Have students draw a diagram of each area and label the length (in metres and steps) of each side.
5. Allow the students to share diagrams. Are there any differences in the measurements? Discuss why this might be the case.





# Walk This Way

## Objective:

Students will follow a set of directions to create a design.

**English:** TS2.2, TS3.2

**Mathematics:** SGS1.2, SGS1.3, SGS2.2a, SGS2.3, SGS3.2a, SGS3.3

## Materials:

Pedometers, sheet of directions (1 per group), string for each group, and playground/activity markers (preferably with a hole in the top).

## Procedures:

1. Review the instructions and ways to use the pedometer.
2. Divide students into groups of 4-5. Give each group a sheet of directions and have students follow them while wearing their pedometers. One student per group should carry the string and lay it down as they walk to mark out their progress. Have students place a marker on the ground each time they change direction (thread the string through the top of the marker to hold it in place). When they finish, they should have constructed a design.

For example, a square would look like this:

- 10 steps forward
- 10 steps right
- 10 steps right
- 10 steps right





# Healthy Hearts

## Objectives:

Students will measure and record their heart rate and number of steps over a given distance at various speeds.

**Mathematics** DS2.1, DS3.1, WMS2.4, WMS3.4 WMS2.2, WMS3.1

**Science and Technology** INVS2.7, INVS3.7, UTS2.9, UTS3.9

## Materials:

Pedometers, paper, pencils and watch/timer.

## Procedures:

1. Review the instructions and ways to use the pedometer and how to measure a heart rate\*.
2. Ask the class "Does the speed at which you move affect your heart rate?"
3. Using the pedometer, have the students travel the same distance (e.g. a length or lap of the oval/quadrangle) at three different speeds: One should be slow, one should be average pace, and one should be fast.
4. As students finish each length/lap they should record their heart rate\* and the number of steps they took.
5. Have each student compare the number of steps taken and their heart rates, for each speed they travelled (slow, average, fast).
6. Then compare and discuss the data collected by all students. What can be inferred from the information? Why are there differences among students?



## \* How to measure heart rate:

- Students should start with the palm of one hand facing upwards. They then put their index and middle fingers on the top of the wrist that is facing upwards, just at the place where a watch band would go. Rather than holding the fingers flat against the wrist, tilt them toward the side of the wrist with the thumb and press lightly.
- The teacher calls out 'start' and students count the number of beats that they feel. After 10 seconds, the teacher calls out 'stop'. Students then multiply the number of beats they counted within that period by 6 to get the number of beats per minute.





# Scientific Steps

## Objectives:

Students will design a pedometer experiment using the steps of the scientific method. The student will conduct an experiment and discuss the findings.

**Science and Technology** INVS2.7, INVS3.7, UTS2.9, UTS3.9

## Materials:

Pedometers, paper and pencils.

## Procedures:

1. Review the instructions and ways to use the pedometer.
2. Review and discuss the steps in the scientific method.
3. Have the students create a scientific experiment using a pedometer. For example, have them compare the number of steps it takes to run up a hill compared to walking up the hill. Is there a difference?
4. Each student or group of students should write each step of the experiment, perform each step, and then record their findings.

