



Steps Towards Cleaner Living

Summary

The Step-O-Meter / pedometer is a simple-to-use, battery-operated device that counts the number of steps walked. It has a clip so that it can be easily attached to a belt or waistband. It can be used in school or at home (or both) to enable students to count the number of steps they are currently taking each day as they carry out their normal activities. They can then be encouraged to set themselves challenges to increase this number so that they ultimately reach the target of 10,000 steps per day, recommended for a healthy lifestyle. An item from BBC news, discusses the British Heart Foundation's endorsement for 10,000 steps per day (<http://news.bbc.co.uk/1/hi/magazine/3723704.stm>)

This activity is most suitable for use in geography lessons, as an online mapping exercise. To link effectively with Sustainable Living, teachers will need to discuss reducing our use of fossil fuels with widespread vehicle use. There is the potential therefore to also link with lessons in science and PE.

Materials needed

- Pedometers (with batteries) = device for measuring the number of steps taken, also known as Step-O-Meters / Step Counters - see photos
- A 'travel to school' survey sheet (downloadable from CS-library - tsuvey.pdf)



Procedure

It is important to remember that the pedometers are not 100% accurate. It is not guaranteed that they will count every step taken. The cost of pedometers varies considerably and in our experience for this application, there appears to be little advantage in using more expensive versions. Refer to the manufacturers instructions for specific information on how to use your pedometer. In general they work in this way. Attach the clip of the pedometer to a waistband or belt. Reset the pedometer to zero by pressing a button on the pedometer, and start walking. It will then record your number of steps.

We suggest here a cross-curricular activity for using the pedometers in school and linking to aspects of how students travel to school. Ultimately we would like to see users understanding the benefits of healthier lifestyles of which walking is one that is relatively easy to adopt. The additional information below, provides a good introduction to the benefits of walking and suggestions for increasing the number of steps taken daily. It also has some good suggestions for encouraging students to take part in challenges to increase the amount of walking they do.

Introduce your students to the website, <http://www.geodistance.com>, which allows you to pinpoint locations around the world according to post/zip code locations. Try entering your school's postcode and use the zoom feature on the 'hybrid' map tab to zoom into an aerial view of your school. Click on a clear point, such as the corner of a building or a specific tree on the playing field.



Ask the students to plot a route around the school or its boundary that is 1500m long. The software will display the route in red and its distance in one of 5 units of measurement (miles/yards/feet/km/metres). This could be a circular walk from the building you are teaching in or simply 4 circuits of a football pitch. Issue pedometers and ask the students

to predict how many steps it will take to complete the walk and how long it will take them to walk. What is their average walking speed? How might they calculate their own stride length using the mapping tool and the step-o-meter? Other than completing the walk faster, what would be the advantage of walking more quickly?

The students should be encouraged to test how accurate the software is - take a field tape measure and run it along one side of a football pitch or marked area on the playground. Compare this answer with that derived from the software.

The students should then calculate the distance from their homes to school and the amount of CO₂ emitted for that journey based on the fact that an average car emits 246g CO₂ per km (data from DEFRA).

According to the Energy Saving Trust, emissions are almost double for short journeys, as vehicles use more fuel when the engine is cold, so a journey of 1 km emits around 492g CO₂ (<http://www.energysavingtrust.org.uk/Travel/Alternative-transport>).

Buses and trains are not exempt from carbon emissions. It is therefore possible to calculate the CO₂ emissions for any journey (see figures in additional information below).

The map may also show bus stops, so it is possible to determine how far students travel by bus or look to see if ANY alternatives to being driven to school exist and what CO₂ savings they could make.

Extension/Homework Activities

Carry out a survey of how each person in the class gets to school - walk/cycle/bus/driven (template attached). You may wish to post the survey on your school website, or use a free online Survey tool (to save photocopying the survey).

A discussion about the pros and cons of how the pupils get to school can follow (some interesting arguments can be found at <http://walkit.com/going-green/>).

School maps based on Number of Steps could be prepared by the students. Inter-class challenges for the total number of steps taken by 'x' number of pupils in each class could be organised or a simple orienteering 'compass trail' using a pedometer and a compass established with students setting trails for each other.

From learning to action

Individuals could commit to finding more eco-friendly ways to get to school, beginning maybe 1 day per week and building-up to 4/5 days.

A more environmentally friendly School Travel Plan could be designed between young people (possibly on the Eco-Council) and senior managers in the school.

Young people could be encouraged to campaign for safer walking and cycling routes) and organising walk-to-school weeks, walking buses and other initiatives to promote walking as a healthy lifestyle choice reducing Carbon-usage.

Additional Information

The figures below (derived from DEFRA) show kg of CO₂ emitted, per vehicle per km in the case of cars and per passenger km for taxi, buses and trains. The figures are based on the 'grand total of greenhouse gas emissions' (kg CO_{2(e)} per km).

- Car: average (unknown fuel) - 0.246
- Bus: average Bus - 0.161
- Taxi: average of regular taxi and black cab - 0.314
- National rail - 0.065

Note these figures are only applicable to the UK (derived from DEFRA, <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>). Users in other countries should refer to country specific guidelines.

Walking is an easy, cost free way to travel that is good for the environment and good for you. *The information that follows is taken from the 'Smarter Travel Choices' booklet produced by Norfolk County Council.*

It's easy

Walking is one of the easiest ways to get around. You are independent and can easily assess the time a journey will take, as there is no need to try and guess what the traffic will be like. You can often take pedestrian-only short cuts and have no worries about finding somewhere to park.

It's free

Walking is free. Unlike every other form of transport walking has no financial cost as long as you have a good, comfortable pair of shoes.

It's good for you

Walking is one of the easiest ways to ensure that you are getting enough exercise. There's no fancy equipment or costs as there are with many other sports or gyms. Walking is low impact, so does not have the negative effects on your joints that running can have. It can help with maintaining an appropriate body weight and control body fat, reducing the risk of diseases such as type II diabetes. Being active can also help you sleep better, reduce stress and the risk of depression. Walking can also boost the immune system and reduce the risk of heart disease.

It's sociable

Walking with a friend can give the opportunity to chat on the way to and from school. You could make new 'walking buddies' that walk the same route as you.

It's good for the environment

By leaving the car at home and walking instead you are reducing your carbon footprint and helping to save the environment. Being outside you will experience the seasonal changes in wildlife more readily than if you are 'trapped' inside a car or bus.

5 top tips for taking more steps

1. Walk to school instead of going by car or bus
2. Walk to your out-of-school leisure activities and to the shops if possible
3. Get off the bus a stop or two early and walk the last part of your journey
4. Take the stairs instead of the lift or escalator
5. Take a walk at lunchtime



Information for Co-ordinators of walking challenges

How to get started

Put up posters around the school and on your website. Inform colleagues about the project. Invite students and staff to take part in the challenge to increase the number of steps they take each day. Arrange a meeting for interested people to come along and find out more.

How long should the challenge last?

It is suggested that you run the project for 8 to 12 weeks to ensure that it has a lasting effect on those taking part. To do this successfully you will need to put in time and effort and give people incentives to keep the scheme fresh and fun.

How many steps should be recommended?

10,000 steps a day is recommended to maintain a healthy lifestyle. However, everyone will have a different starting point so it may be more realistic to ask people to set a target to improve on the number of steps they take at present. A suitable target would be to increase their number of steps by 1000 every 3-4 weeks.

How do I encourage people to take part?

The benefits of increasing the amount you walk are detailed on the walkers' information sheet.

You could hold a number of events to encourage people to take part such as:

- A Walkers' Breakfast - free breakfast for those who walk to school.
- Sponsored Walks - find a local charity that would benefit from a sponsored walk.
- Walkers' Raffles - give people who walk to school or achieve their 10,000 steps a day raffle tickets. This could run for a week with a prize draw on Friday.
- Set up a walking club and arrange a weekly/daily walk at lunchtimes or after school.
- Organise an inter-form challenge to see who can get the most walkers and clock up the most steps in a week.
- Plot on a map collectively how far each form has 'walked' and celebrate when you reach a new county with a themed lunch.
- Put together a walkers' map of the school showing minutes and steps taken to walk from one place to another.
- Organise a 'walk-share' scheme so that people walking to school along the same route can walk together



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This publication has received funding from the European Community's Seventh Framework programme under grant agreement number 217751. It is licensed under Creative Commons Attribution-Noncommercial-Share Alike 3.0 License.

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