

Cross-curricula use of indoor rowing machines

Series of lessons in Lordswood Boys School, Birmingham, teacher Steve Mansfield with Year 8 mixed ability classes.

Cross-curricula Maths & ICT with the Indoor Rower

Objectives – understanding speed, distance and time triangle relationship

Pupils:

- Use the rowing machine to record a set distance and time
- Calculate pupils' speed from their recorded figures
- Calculate pupils' times from their recorded distances and speeds
- Draw graphs displaying their own times

Pupils understand:

- The relationship triangle between speed, time and distance
- How to work out speed
- How to work out time
- How to work out distance

Pupil activities, the same activities could be used with ICT equipment or graph paper

1. Firstly the pupils collected the data from the start-of-year fitness testing they did. Each pupil recorded a time on the Concept2 Indoor Rowing machines at this point and we used these figures as our raw data. Alternatively, having 1 machine in class and getting the pupils to do 100m in the maths lesson time, could work well as an introduction or using PE time to record any of the fitness tests you can do http://indoorsportservices.co.uk/schools/fitness_tests
2. Through looking at the data and asking questions, pupils are introduced to the triangular relationship of Speed = Distance/ Time.
3. Pupils are asked to work out the speed of their own races, once they have done that, they are asked to calculate the speeds of the rest of the class.
4. Maths lesson The speeds for each pupil are put into a drawn bar chart so they can see how they fared. Differentiation – for pupils who finish quickly, they can also work out the average speed of the entire class and add that as a line to their graphs
ICT lesson The speeds of the pupils can be put into an Excel table and the pupils make up a bar chart from the table
Differentiation – for pupils who finish quickly, they can also work out the average speed of the entire class and add that as a line to their graphs
5. With a round number for speed go through how you can use the speed, distance, time triangular relationship to work out how long it would take to go through other distances, add these to a line or scatter graph. Differentiation – for pupils who finish quickly ask them to work out how long the same distance would be with less rounded figures for speed or if they covered it, and if they can do, what the shortest, longest and average times taken would be. All of which can be added to the graph.
6. As with the previous point, with a round number for speed go through how you can use the speed, distance, time triangular relationship to work out how far you would be able to go, add these to a line or scatter graph. Differentiation – for pupils who finish quickly ask them to calculate how far you could go but add in one or more speed change at certain intervals. Get pupils to plot this on a graph.

Cross-curricula English with the Indoor Rower

The rowers have been used at the school with the free Venue Race software <http://www.concept2.com/service/software/venue-race-application> for house races. Similar to many other sports competitions at the school, pupils taken the role of reporters, observing the events and writing reports on the school performance for their English projects. The Venue Race software made it really easy to see what was going on, and this helped engage these pupils too.