

How powerful are you?

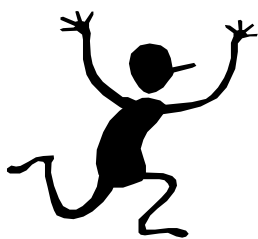
Inquiry activity

Power is defined as the rate of doing work

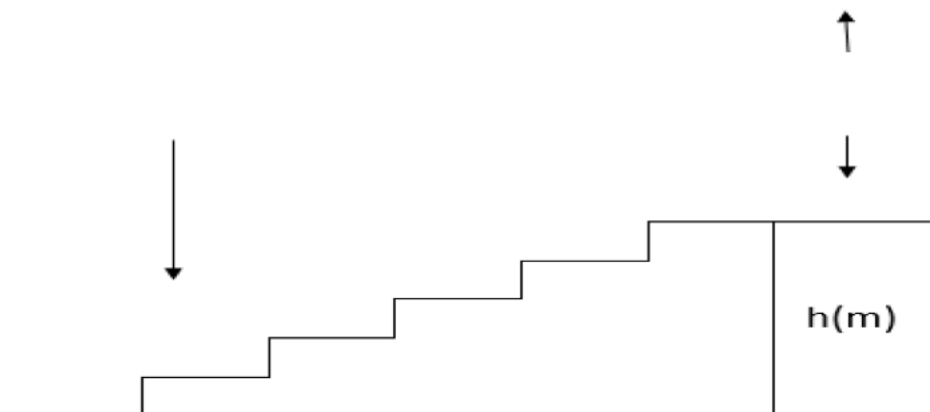
Work done (joules) = force x distance Newtons x metres

Power (watts) = $\frac{\text{work done}}{\text{time taken}}$ $\frac{\text{joules}}{\text{seconds}}$

We can find the power we can generate by doing a simple experiment. When we go upstairs we are doing work, we are moving a force (weight) a distance. As our weight acts down the distance we are moving is in an upward direction.



Weight (newtons)



Method

- ① Find your weight (Force in newtons)
- ② Measure the height (h) of the stairs (the distance)
- ③ Time how long it takes to run up the stairs
- ④ Repeat this to find an average time
- ⑤ Fill in the spreadsheet

(Note: When doing the experiment take care running up the stairs. Do not make loud noises consider other classes who are working)

Person	Weight	Distance	Work	Time	Power
1					
2					
3					
4					