Towards Mastery:

**Calculation Checklist**

1. Write the values you’re given.
2. Check the values are in SI units.
3. Write the equation you will use.
4. Substitute in the values you know.
5. If necessary, re-arrange the equation.
6. Calculate your answer.
7. Write your answer – don’t forget the units!

Work Done Calculations

[Learning]

*This is what you really need to be able to do – use the equation exactly as it is given to you, substitute in the values you are given in the question and calculate the kinetic energy. Show all your working out.*

1. Calculate the work done if an object is moved with a force of 5N for 5m.
2. What is the work done on an object if a force of 3N moves the object 5m.
3. A force of 40N acts on an ice skater, she moves 10m. Calculate the work done.
4. Calculate the work done if an object is moved with a force of 3N for 2m.
5. What is the energy transferred if a force of 30N moves the object 8m.
6. A force of 4N acts on an ice skater, he moves 15m. Calculate the work done.

 [Challenge]

*These are the more difficult questions – you will need to substitute and then rearrange these equations – if you can do these then you are really starting to grasp these calculations. Show all your working out.*

1. Calculate the force acting on an object if the work done is 50J and the object moves 25m.
2. What is the force acting on an object if the energy transferred is 30J and the object moves 5m?
3. An object moves 5m, the work done is 65J, calculate the force acting on the object.
4. Calculate the distance an object has moved if the work done is 88J and the force is 11N
5. What is the distance an object has moved if the energy transferred is 56J and the force is 7N?
6. A force of 7N is acting on an object, the work done is 21J, calculate the distance the object will move.

 [Extreme]

*These are the most difficult questions – you will need to convert the units, substitute your values and then rearrange the equations – if you can do this you are well on your way on the journey to mastery of these calculations. Show all your working out.*

1. A box is moved 150cm with a force of 1kN. Calculate the work done.
2. Calculate the distance moved if a force of 0.5kN moves an object and 5kJ of work is done.
3. What is the force if an object is moved 0.2km and 500mJ of work is done?
4. Calculate the force acting on an object if 0.5kJ of energy is transferred and the object moves 20cm.
5. What is the distance moved by an object if 0.4kJ of work is done by 5kN of Force?