Kinetic energy calculations /15

This is what you really need to be able to do – use the equation exactly as it is given to you to be able to calculate kinetic energy. Try for yourself – have a go at these questions:

**Calculating Kinetic Energy - EK:**

1. A car that travels at a speed of 20m/s and has a mass of 1200 kg. What is the KE?

**Answer** (with units) =

1. A year 11 pupil with a mass of 55kg swinging back on their chair and falling off it at a speed of 0.6m/s. What is the KE?

**Answer** (with units) =

1. A runner with a mass of 62kg running at a speed of 0.8m/s. What is the KE?

**Answer** (with units) =

1. A tennis ball travelling at a speed of 46m/s with a mass of 58g (note g, not kg). What is the KE?

**Answer** (with units) =

1. A dog running across a field at a speed of 1.2m/s with a mass of 3.2kg. What is the KE?

**Answer** (with units) =

**Calculating velocity - v:**

1. Bus travelling through town, with a mass of 5040kg and kinetic energy of 493900J. What is the velocity?

**Answer** (with units) =

1. A lift travelling up to the top floor of the Empire State building with a mass of 4200kg and a kinetic energy of 4116J. What is the velocity?

**Answer** (with units) =

1. Bird flying towards its nest with a mass of 0.25kg and a kinetic energy of 40.5J. What is the velocity?

**Answer** (with units) =

1. A Wii remote flung from a hand through a TV, with a kinetic energy of 1.44J and a mass of 4.5kg. What is the velocity?

**Answer** (with units) =

1. Hot air balloon with a kinetic energy of 76550J and a mass of 1890kg. What is the velocity?

**Answer** (with units) =

**Calculating mass -m:**

1. Automatic door closing 0.2m/s, with a kinetic energy of 1.6J. What is the mass?

**Answer** (with units) =

1. Wind turbine blade with a kinetic energy of 104040J, turning at 6m/s. What is the mass?

**Answer** (with units) =

1. Aeroplane travelling at 75m/s with a kinetic energy of 843700J. What is the mass?

**Answer** (with units) =

1. Canoe moving down the river with a kinetic energy of 5J and a speed of 0.5m/s. What is the mass?

**Answer** (with units) =

1. Child riding a bike at a speed of 6m/s, with a total kinetic energy of 1224J. If the mass of the child is 30kg, what is the mass of the bike? What is the mass?

**Answer** (with units) =

