Niamh Barry JC Science 2017 Specification

Learning Outcomes:

Nature of Science	Students should be able to research and present information on the contribution that scientists make to scientific discovery and invention, and its impact on society
Physical World	Students should be able to select and use appropriate measuring instruments Students should be able to identify and measure/calculate length, mass, time, temperature, area, volume, density, speed, acceleration, force, potential difference, current, resistance, electrical power Students should be able to design, build, and test a device that transforms energy from one form to another in order to perform a function; describe the energy changes and ways of improving efficiency

Task

You are an engineer working for a company that will design a skateboard park in Portumna, Co. Galway.

You have been asked to **collect and analyse** data that relate **kinetic energy to the mass and speed** of an object.

Your analysis will be used to design a skateboard or a ramp that increases a rider's kinetic energy.

1. First, you will conduct investigations to collect data.
2. Next, you will analyse your data by constructing and interpreting graphs.
3. Finally, you will present your findings to the skateboard park's management team.

- Determine a way that you can investigate how an object's mass affects its kinetic energy.

Possible methods:		

- Consider the materials you will need and make a list.

Materials

- Write a procedure for your investigation. Remember to include repeated trials to increase the validity of your results.

My procedure (this can be cyclical, it does not have to be linear)

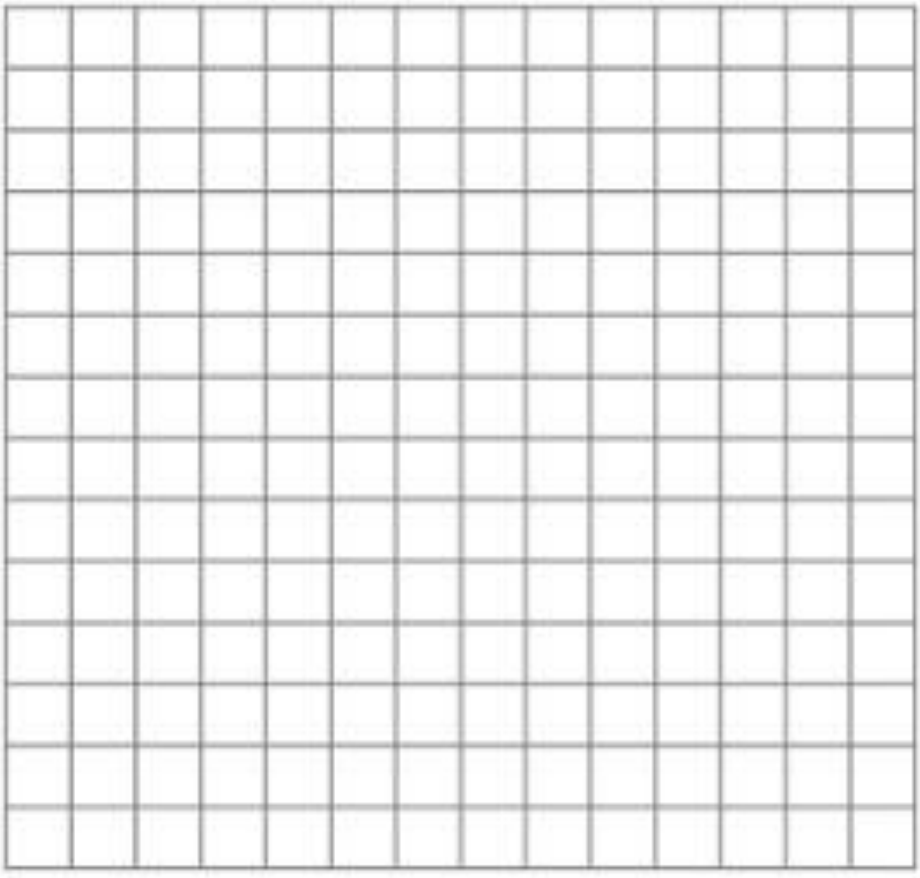
- Carry out your investigation and record your data.

Create a table to record your data:

- Determine a way that you can investigate how an object's speed affects its kinetic energy.

Use your data to prepare a graph that shows the relationship between the mass of an object and its kinetic energy.

Use your data to prepare a graph that shows the relationship between the speed of an object and its kinetic energy.



Analyse your graphs. What trends do you see?

Use your graphs and your analysis to create a presentation for the skateboard park's management team.

Your presentation should include the following success criteria:

1. how to best increase the kinetic energy of the rider.
2. Be sure that your conclusions are supported by your data.