

Homework 3 – Levers and Linkages

Levers

In the table below draw down the three types of levers and name their parts (fulcrum, load and effort)

Class 1	Class 2	Class 3

Example of where a class 1 lever is used?

Example of where a class 2 lever is used?

Example of where a class 3 lever is used?

Explain why levers are used

Lever calculations

Using the equation: Mechanical advantage (MA) = Load / Effort

Calculate the MA if 50 Newtons of effort is needed to lift 300 Newtons of Load.

(show all working)

Calculate the MA if 30 Newtons of effort is needed to lift 300 Newtons of Load.

(show all working)

Calculate the MA if 15 Newtons of effort is needed to lift 75 Newtons of Load.

(show all working)

Homework 3 – Levers and Linkages

Linkages

Draw the three different linkages, and annotate the fixed and moving pivot points.

Reverse linkage	Parallel linkage	Bell crank linkage

Describe the movement of a reverse linkage

Describe the movement of a Parallel linkage

Describe the movement of a Bell crank

Name three products where a linkage is used

-
-
-

Draw down a Crank and slider mechanism

Drawing of Crank and slider	How does it work?	Where is it used?