

Fulcrum – The **axis** around which the lever rotates

Load – The **force** of the thing that you want to **move**

Effort – The **force** that is applied by the user of the lever system

1st Class

Fulcrum in the Middle

1.2.3. F.L.E

2nd Class

Load in the Middle

3rd Class

Effort in the Middle



This can be remembered using 'Fly Little Elf'

Nodding your Head

Load - Weight of the head through the chin
Fulcrum - The joint at the top of the neck
Effort - The muscles at the bottom of the neck

First Class Lever Systems:

Rowing

Load - Water
Fulcrum - Top of Oar
Effort - Biceps

Tricep Dip

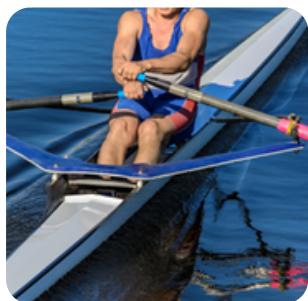
Load - Body weight through the hands
Fulcrum - Elbow
Effort - Triceps



Second Class Lever Systems:

Calf Raise & Long Jump

Fulcrum - Balls of the Feet
Load - Bodyweight through the centre of the foot
Effort - Gastrocnemius



PE COMPONENT 1 - LEVER SYSTEMS



Mechanical Advantage = Effort

$$\text{Arm} \div \text{Resistance Arm.}$$

Third Class Lever Systems:

Bicep Curl

Fulcrum - Elbow
Effort - Biceps
Load - Dumbbell/Barbell

Kicking a Ball

Fulcrum - Knee
Effort - Quadriceps
Load - Ball



Lever System

Advantage

Disadvantage

1st Class

Mechanical Advantage - A large load can be lifted with relatively little effort

Slower Movement

2nd Class

Mechanical Advantage - A large load can be lifted with relatively little effort

Slower Movement

3rd Class

Fast Movement

Mechanical Disadvantage - large effort is needed to lift a relatively small load

