

GCSE Physical Education – Lever Systems

Levers:

1	F	N
2	L	T
3	E	E

1st class / Fulcrum in middle / Neck
 2nd class / Load in middle / Toes
 3rd class / Effort in Middle / Elbow

Mechanical Advantage

Some levers operate with mechanical advantage. This means that the lever can overcome a large load with relatively little effort.

In general terms a mechanical advantage is where the **FULCRUM** is closer to the load

First class levers	Second class levers
In a first class lever the fulcrum is between the effort and the load. The fulcrum is normally closer to the load.	In a second class lever the load is between the effort and the fulcrum. The fulcrum is normally closer to the load.
Mechanical Advantages i. Larger force generated ii. Longer force/effort arm iii. Easy to move heavy/large weight	

1st Class Lever

- Practical Examples:**
- Heading a football
 - Looking up to watch the ball in a tennis serve



Remember:

2nd Class Lever

- Practical Examples:**
- Standing on tip toes to play a smash
 - Jumping in volleyball to block a shot



123
FLE
NTE

3rd Class Lever

- Practical Examples:**
- Bicep Curl
 - Football throw in

