Simple biomechanics

UNTAMED EDUCATION

1.4 Anatomy and physiology

Dorsi Flexion

Plantar Flexion

Force

Load

Gravity

Simple Biomechanics

Effort

Levers

Acceleration

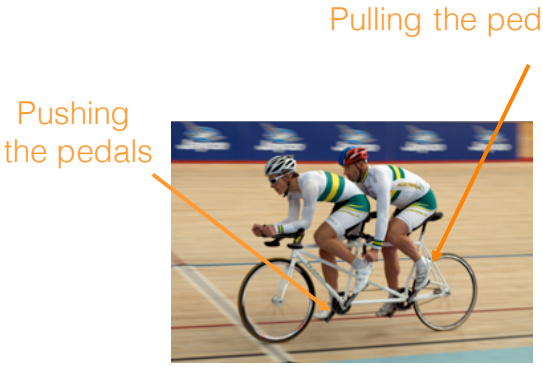
Air resistance

Fulcrum

1. Principles of force

- A force can be a _____ or a _____.
- Push and pull forces are used when turning the pedals on a bike.
- An increase or decrease in force can cause _____ or _____.

Force =
mass x acceleration

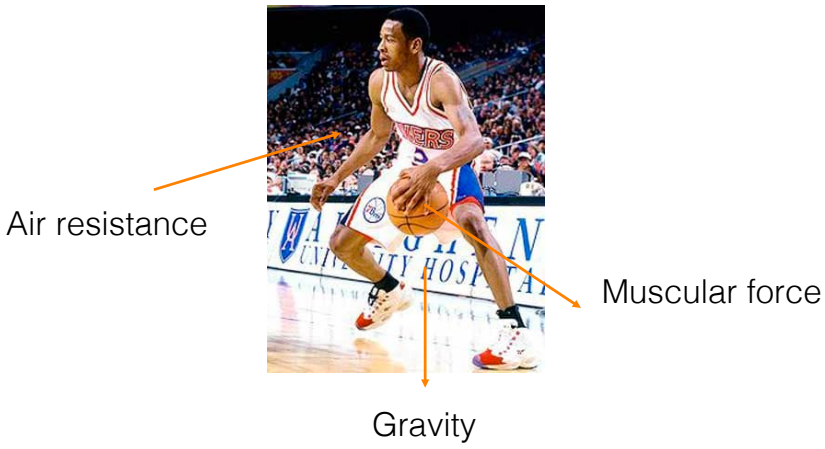


2. Applications of force

1. Sprinter in the blocks

2. Object in the air

3. Moving performer

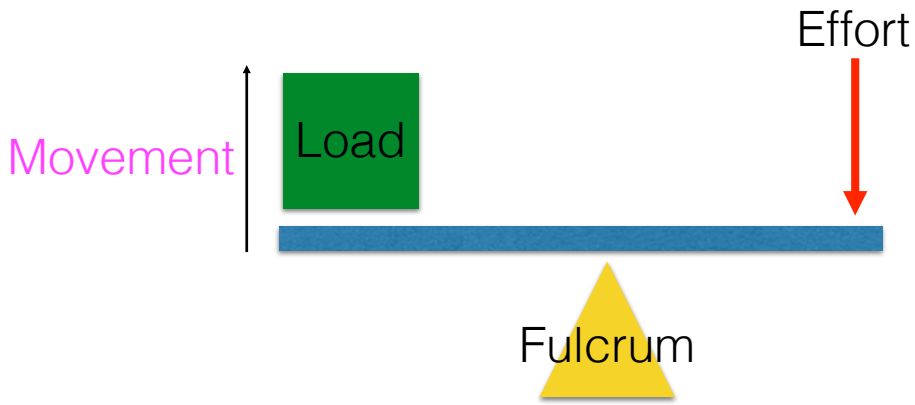


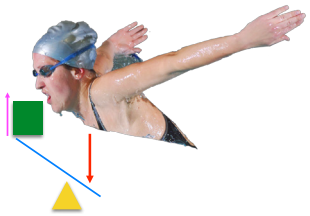
3. Levers

- Muscles and bones work together as a series of **levers** to create movement.
- A lever is a **rigid bar** is comprised of three components:
- _____ (the point at which the lever rotates)
- _____ (the resistance applied to the lever system)
- _____ (the effort/muscle needed to move the lever system)
- The **classification of lever** depends on the **order** in which these _____ **components** are in relation to each other.

4. First class levers

- **First class levers** are organised in a see saw order to move the load.

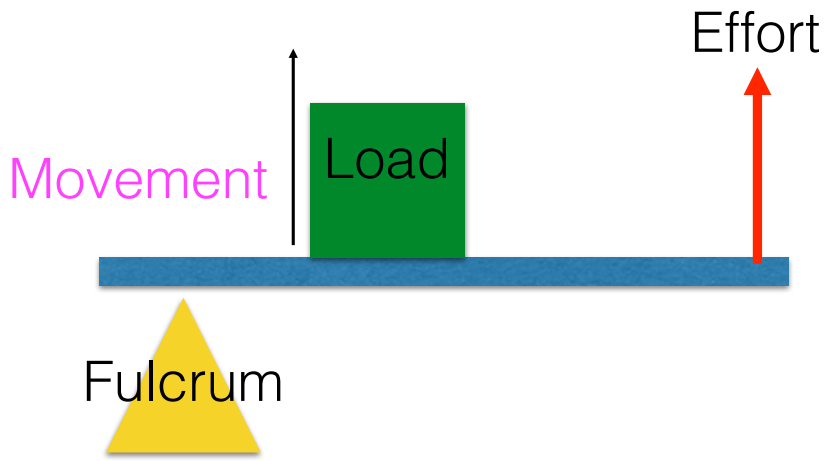


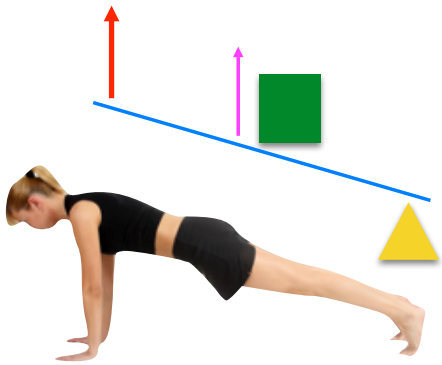


- Examples of first class levers:
  - _____ the head i.e. breathing in Swimming or heading in Football.

5. Second class levers

- **Second class levers** are organised in a wheelbarrow order to move the load.

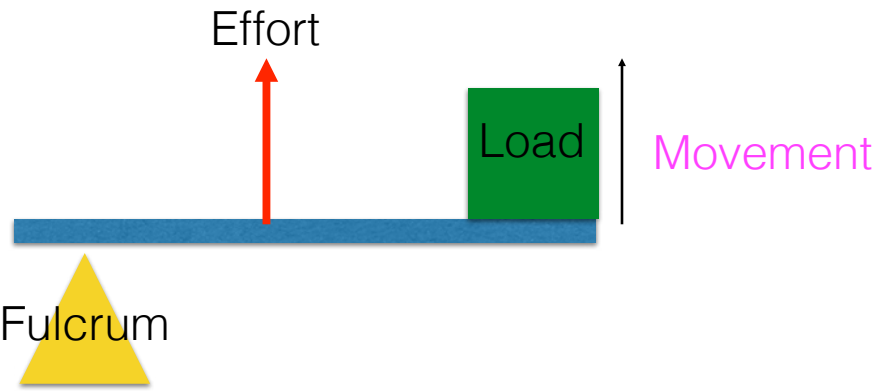




- Examples of second class levers:
  - _____ up

6. Third class levers

- **Third class levers** are organised in a fishing rod order to move the load.



- Examples of third class levers:
  - _____ curl (effort is where the muscle attaches to the lever)