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# Biomechanics 101

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May the force be with  
you

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V.Ratusau 2016

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# FORCES

Summarise one concept we know about FORCES

A force is a \_\_\_\_\_ or \_\_\_\_\_ in any direction

Forces can either \_\_\_\_\_ or \_\_\_\_\_

Name 3 forces we have discussed in class: eg.gravity

Highlight the relevant syllabus points for the assessment:

## How do biomechanical principles influence movement?

**Teacher Note:** These selected areas of biomechanics should be studied through practical workshops and need only be dealt with in sufficient detail to understand their link to fundamental movement, eg why do you lean forward to accelerate?

Students learn about:

- motion
  - the application of linear motion, velocity, speed, acceleration, momentum in movement and performance contexts
- balance and stability
  - centre of gravity
  - line of gravity
  - base of support
- fluid mechanics
  - flotation, centre of buoyancy
  - fluid resistance
- force
  - how the body applies force
  - how the body absorbs force
  - applying force to an object.

Students learn to:

- apply principles of motion to enhance performance through participation in practical workshops
- apply principles of balance and stability to enhance performance through participation in practical workshops
- apply principles of fluid mechanics to enhance performance through participation in practical workshops
- describe how principles of fluid mechanics have influenced changes in movement and performance, eg technique modification, clothing/suits, equipment/apparatus
- apply principles of force to enhance performance through participation in practical workshops.



**Complete the response.**

A solid base of support for a discus thrower is integral because...

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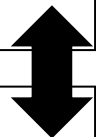
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**What is Newton's famous law about forces:**

**Translate Newton's law into word YOU understand**



**Draw the forces in below**



**Define power:**

What is the difference between speed-dominated and strength-dominated power? Which one is best suited to discus?

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**Application of force**

The 3 principles that impact the application of force are:

- 1.
- 2.
- 3.

**3 ways the body absorbs force are:**

Centripetal force is

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Give an example of centripetal force

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Centrifugal force is

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Give an example of centrifugal force

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The one that most applies to discuss is \_\_\_\_\_





