





<p>This half term: Skills, Knowledge and Understanding to be developed:</p> <p>Skills (students <u>will be able to</u> by the end of the Learning Programme): Will be able to use centre of gravity to explain stability, the principle of moments to determine forces, calculate the coefficient of restitution of different material balls, define the movement of inertia and calculate the moment of inertia of different bodies and to calculate the angular momentum and acceleration in different sports.</p> <p>Knowledge (students <u>will know</u> by the end of the Learning Programme): Students will know how to use principle of moments to determine forces within various muscle systems in the human body and other sporting contexts, for example sailing, how to use Newton's 2nd Law in various sporting contexts, how coefficient of restitution is different for different materials, how to use equations to determine moment of inertia of a solid and thin spherical sphere and shell, how to calculate angular momentum, how to use Bernoulli's equation and determine the magnitude of drag force.</p> <p>Understanding (students <u>will demonstrate</u> their understanding): By answering past exam papers on the topic Option C – Physics of Sports.</p>		<p>Key Terms/Words:</p> <p>Moments Coefficient of Restitution Moment of Inertia Angular acceleration Torque Kinetic Energy Bernoulli's equation Drag Coefficient</p>	
<p>LP 5 – Week 1 & 2 Learning Outcomes:</p> <p>Lesson 1 – Students will be able to use the conservation of angular momentum to solve problems in sporting contexts.</p> <p>Lesson 2 – Students will be able to use the equation for the rotational kinetic energy, rotational $KE = \frac{1}{2}I\omega^2$</p> <p>Lesson 3 – Students will know how to use the principle of conservation of energy including the use of linear and rotational kinetic energy as well as gravitational and elastic potential energy in various sporting contexts</p>		<p>Success criteria:</p> <p>Students will be able to calculate the moment of inertia of an object and angular velocity.</p> <p>Students will be able to calculate the rotational and linear kinetic energy of an object.</p>	<p>Homework LP5 1 / 3</p>
<p>LP 5– Week 3 & 4 Learning Outcomes:</p> <p>Lesson 4 – Students will be able to use the conservation of momentum</p> <p>Lesson 5 – Students will be able to calculate distance of a ball by using projectiles</p> <p>Lesson 6 – Students will be able to use their knowledge and understanding to answer CDG 1</p>	<p></p> <p>CDG1</p> <p>Mark</p>	<p>Success criteria:</p> <p>Students will be able to use the conservation of momentum to calculate the angular velocity of an object.</p> <p>Students will be able to explain why in some sport contexts they use the 'tuck position'.</p>	<p>Homework LP5 2 / 3</p> <p>Prepare for CDG 1</p>
<p>LP 5 – Week 5 & 6 Learning Outcomes:</p> <p>Lesson 7 – Students will know how to use Bernoulli's equation in sporting contexts</p> <p>Lesson 8 – Students will be able to determine the magnitude of the drag force</p>	<p></p> <p>CDG2</p> <p>Mark</p>	<p>Success criteria:</p> <p>Answer past paper questions on Bernoulli's equation.</p> <p>Students will use the drag force equation.</p>	<p>Homework LP5 3/3</p> <p>Prepare for CDG 2</p>