

Week 2 and 3 Date: Monday 27th April –1st June 2020

Year Group: 9 Statements in bold are for sets 1, 2 and 3 only

Subject: Science- Physics

Specification

		Students should:	Maths skills
2.14 Recall Newton's first law and use it in the following situations: a where the resultant force on a body is zero, i.e. the body is moving at a constant velocity or is at rest b where the resultant force is not zero, i.e. the speed and/or direction of the body change(s)	1a, 1d 2a 3a, 3c, 3d	2.21 Explain that for motion in a circle there must be a resultant force known as a centripetal force that acts towards the centre of the circle	5b
2.15 Recall and use Newton's second law as: force (newton, N) = mass (kilogram, kg) × acceleration (metre per second squared, m/s ²) $F = m \times a$	1a, 1c, 1d 2a 3a, 3b, 3c, 3d	2.22 Explain that inertial mass is a measure of how difficult it is to change the velocity of an object (including from rest) and know that it is defined as the ratio of force over acceleration	1c
2.16 Define weight, recall and use the equation: weight (newton, N) = mass (kilogram, kg) × gravitational field strength (newton per kilogram, N/kg) $W = m \times g$	1a, 1c, 1d 2a 3a, 3b, 3c, 3d	2.23 Recall and apply Newton's third law both to equilibrium situations and to collision interactions and relate it to the conservation of momentum in collisions	1a, 1c, 1d 2a 3a, 3b, 3c, 3d
2.17 Describe how weight is measured		<u>Statements in bold are for sets 1, 2 and 3 only</u>	
2.18 Describe the relationship between the weight of a body and the gravitational field strength	1c,		
2.19 <i>Core Practical: Investigate the relationship between force, mass and acceleration by varying the masses added to trolleys</i>	1a, 1c,1d 2a, 2b, 2f 3a, 3b, 3c, 3d 4a, 4b, 4c, 4d		
2.20 Explain that an object moving in a circular orbit at constant speed has a changing velocity (qualitative only)	5b		

WEEK 2- Learning Activities	Communication	Supporting Sites
<p>Topic: Topic 2 Newtons laws Topic 2 Weight Core practical on investigating motion</p> <p>What do you want students to know? <i>See above specification points (bold statements are year 9 sets 1-3 only)</i></p> <p>What do you want them to produce to demonstrate learning?</p> <ol style="list-style-type: none"> 1. <i>Written notes on Newtons first law- what it is and why it is relevant</i> 2. <i>Written notes on Newtons second law- what it is and why it is relevant</i> 3. <i>Written notes on Newtons third law- what it is and why it is relevant</i> 4. <i>Practice the spellings of keywords</i> 5. <i>Make revision cards/ notes on key definitions and the laws</i> 6. <i>Draw some real-life situations where Newtons laws apply. Use the internet and your revision guide to help</i> 7. <i>Write a method for the Core practical on motion and explain what the variables are i.e. the independent, dependent and control variable</i> 8. <i>Draw a diagram that helps to explain circular motion. Can you think of some real life examples where this is useful?</i> 9. Complete worksheet questions 10. Complete revision guide questions on this topic 	<p>Key Vocabulary (list 10 words per week) Resultant force Balanced Unbalanced Force Mass Acceleration Stationary Gravitation field strength Weight</p> <p>Circular motion Centripetal force</p> <p>What would you like them to read? <u>Higher revision guide</u> Section 17 in revision guide Page 149-152</p> <p><u>Foundation revision guide</u> Section 17 in revision guide Page 149-153</p>	<p>Signpost to: <i>Websites</i> https://www.youtube.com/results?search_query=free+science+lessons+newton https://www.bbc.co.uk/bitesize/topics/zcw22nb</p> <p><i>There are a variety of videos on Youtube!</i></p> <p><i>Download "23 questions" on your phones app store to practice physics equations</i></p> <p><i>Share point</i></p> <p><i>Frog</i></p>

What do you want them to practice? How?

1. *Practice using the key formulae to complete calculations on worksheets*
2. *Figure out how Newtons laws apply to different situations in real life*
3. *Test yourself on key formulae (using revision cards)*
4. *Complete the worksheets*

What can they teach to someone else? How?

Teach the key physics equations to someone else in your house.

Explain Newtons three laws to someone in your house

Resources needed: *Pen and lined paper*