Subject	Year 8 Physics content Autumn Term	How to support students' learning
Forces and Motion 2	<u>Forces and Motion</u> • Describe how to measure speed • State different types of forces • Explain the motion of an object based on the forces acting on it. <u>Motion Graphs</u> • Describe the motion of an object graphically using a distance-time graph. • Calculate the speed from a distance-time graph. • Interpret a velocity-time graph <u>Newton's Second Law</u> • Investigating how an applied forces effects the acceleration of an object • Recall the equation for Newton's Second Law • Calculate acceleration using Newton's Second Law <u>Forces and Moments</u> • Describe how a moment can cause an object to rotate • Calculate a moment • Explain how moments are applied to everyday objects <u>Pressure in Solids and Fluids</u> • Calculate pressure due to a solid object acting on a surface • Explain how objects can use high pressure as an advantage • Explain how objects can use low pressure as an advantage • Describe how the pressure in the atmosphere changes as the altitude changes.	Encourage students to watch this video which will remind them how to calculate resultant forces and understand the motion of the object Resultant Force - GCSE Physics - YouTube Use the link below to remind yourself of the knowledge needed to interpret motion graphs. Check your understanding by completing the quiz at the bottom of the page. Representing journeys - Forces and movement - KS3 Physics - BBC Bitesize - BBC Bitesize You can try some of your own experiments at home to investigate Newton's 2nd Law. Here is a guide to several experiments. Science Project on Gravity and Motion for Third Graders (sciencing.com) This video is a summary of how moments can be useful for everyday objects GCSE Science Revision - Moments and Levers - YouTube You can carry out your own experiment at home to investigate water pressure. Here are some instructions: Water Pressure Experiment - YouTube This video is an excellent resource that summarises all the lessons in this topic.

Sound and Light 2 (First Half)	<u>Recap of Light from Year 7</u> • Understand how light travels including reflection • Describe how we see the colour of objects • Understand the terms transparent, translucent and opaque <u>Transverse and Longitudinal Waves</u> • Understand the key terms of waves • Describe the properties of transverse and longitudinal waves • Describe examples of different transverse and longitudinal waves <u>Refraction of Light</u> • Investigate how light refracts through different materials • Explain in detail why light refracts through different materials • Draw ray diagrams correctly using correct key terms <u>Interference and Diffraction</u> • Describe how waves can combine to cause superposition • Explain how two waves can cause constructive interference • Explain how two waves can cause destructive interference • Understand examples of where interference is used in everyday examples	BBC bitesize forces - KS3 - YouTube Encourage students to read through this website which summarises the work they completed in Year 7. How light travels - Light waves - KS3 Physics Revision - BBC Bitesize Encourage students to watch this video clip which demonstrates both longitudinal and transverse waves. Transverse & Longitudinal Waves | Waves | Physics | FuseSchool - YouTube Follow the instructions on this website to carry out your own refraction experiment at home. Light Refraction Science Experiment (coolscienceexperimentshq.com) Watch this video to see an example of how sound interference is used in an everyday application. How do noise cancelling headphones work? | James May's Q&A (Ep 10) | Head Squeeze - YouTube