

Ad Astra

What have I done previously in my learning journey?						
Previously	This is the second Physics topic you will have covered at Lode Heath. The forces topic looks at different instances of mechanical energy transfer, and as we will discover throughout the topic Forces and Energy stores are very closely linked.					
	We will look at the science involved in things you will have observed in your weight, the stretching of a spring and stopping a fast-moving car. Can you th would like to look at as we study this topic?	everyday ink of any	life, such as your / other examples you			
In this topic…	is topic Forces are just pushes and pulls in a particular direction. Forces are shown by arrows in diagrams. The direction of the arrow shows the direction in which the force is acting. The bigger the arrow, the bigger the					
	force. If two forces are balanced, it means the forces are the same size but are acting in opposite directions. If two balanced forces are acting on an object, that object will not change its motion. If it is still, the object will stay still or if it is moving, it will continue moving in the same direction and at the same speed. When two forces acting on an object are not equal in size, we say that they are unbalanced forces. Unbalanced forces do change the way something is moving. They can make objects start to move, speed up, slow down or change direction. In this topic we will look at specific examples of these interactions as well as any calculations used.					
We will develop our lea	arning by studying the following each lesson:	RAG Skills in Science				
 7F.01 Introduction to fo List some force State that a formary change de State that a formore occur when two Identify if a pain 		Checklist Scientific Method Practical Number skills Application Communication				
7F.02 Balanced and Un	balanced forces		Scientific			
 Describe forces using force arrow diagrams Describe what balanced forces are and what a resultant force is Explain when a force is balanced or unbalanced Calculate a resultant force Interpret resultant forces to predict the effect on an object's motion. 			Method Practical Number skills Application Communication			
 7F.03 Weight and Gravity State what is meant by mass and weight Compare the mass and weight of objects on different planets 			 Scientific Method Practical Number skills Application Communication 			
7F.04 Friction, Air and		Scientific				
 Describe the effect of friction, air and water resistance between surfaces Describe useful ways to reduce or increase friction, air or water resistance Describe the energy transfers involved 			Practical Number skills Application			
 7F.05 Stopping distances Describe what is meant by braking, thinking and stopping distance Describe factors that affect braking, thinking and stopping distance 			 Scientific Method Practical Number skills Application Communication 			
 7F.TA1 Teacher assessed Task 1 You will complete a task on the previous topic, Atoms, elements and Compounds. This will help assess how much knowledge you have retained in your long term memory 			 Scientific Method Practical Number skills Application Communication 			
 7F.06 Hooke's Law - Th Describe how of Write a method 		 Scientific Method Practical Number skills Application Communication 				



Learning Journey – Y7 Forces and density.

Ad Astra

7F.07 Hooke	's Law- Practica	I						Scientific
Describe how objects can be stretched and compressed						Method		
• Writ	 Write a method to investigate the effect of forces on the extension of a spring 							Practical
• • • • • • • • •		investigate the			in on a spring			Number skills
								Application
								Communication
7F.08 Hooke	's Law- Conclusi	ion						Scientific
Dray	v conclusions fr	om graphs						Method
Desc	cribe what is me	ant by the spri	ng constant					Practical
Calc	ulate the force	needed to exte	nd a spring usin	g Hooke's Law.				Number skills
			1 0	0				Application
								Communication
7F.09 Density	/							Scientific
Calc	ulate density w	hen given the n	nass and volume	e of an object				Method
								Practical
								Number skills
								Application
	(Communication
7F.10 Density	y (Practical) Reg	gular and irregu	ular shapes					Scientific
Desc	cribe a practical	to find the der	sity of regular a	nd irregular sha	aped objects			Ivietnod
Use	calculations of	density to pred	ict whether an c	bject will float	or sink			Practical
								Number skills
								Communication
75.44 Due sou								Communication
/F.11 Pressu	re							Method
Calc	ulate pressure v	when given for	ce and area					Practical
								Number skills
								Application
								Communication
7E 12 Changing Prossure								Scientific
Describe procedure in terms of particles								Method
Describe pressure in terms of particles								Practical
Describe now pressure changes with depth or neight.								Number skills
Desc	cribe ways to in	crease and dec	rease the pressu	ire				Application
							Communication	
7C.TA2 Teach	ner Assessed Ta	sk 2						Scientific
You will complete a task on the first half of the current tonic. This will help assess how much						s how much		Method
knowledge you have retained in your long term memory								Practical
knowledge you have retained in your long term memory.							Number skills	
								Application
								Communication
		-	K	ey Vocabulary				
Force	Speed	Velocity	Direction	Push	Pull	Newton	Contact	Non- Contact
Balanced	Unbalanced	Resultant	Weight	Gravity	Friction	Resistance	Braking	Field strength
Spring	Constant	Mass	Surface Area	Compression	Extention	Density	Pressure T	hinking distance
Future Learning Forces is a large tonic that will be looked at as part of your GCSE studies, generally in year 11								
In Very 8, we will look at magnetic forces and how they interact with the earth as well as studying								
	III I 		when a fame		them This			the speed and
1	I NOV	V UNITIES THOVE	e when a force	פ וא מטטוופס דמ) mem. Infs	will involve	CAICUIATING	me speed and

	now things move when a force is applied to them. This will involve calculating the speed and
	acceleration of various objects.
In careers	Engineers analyse forces when designing a great variety of machines and instruments, from road
	bridges and fairground rides to atomic force microscopes. Anything mechanical can be analysed in
	this way. Recent developments in artificial limbs use the analysis of forces to make movement
	possible.