W	Year:	10	Subject:	Triple Physics		Autumn 1	Autumn 2					
	Physics				(P6) Particle model of matter RP – calculating densities	 Prior Knowledge: Definition of density Explain and draw the Particle model and the three states of matter 	 (P6) Particle model of matter Prior Knowledge: Definition of density Explain and draw the Particle mode and the three states of matter 					
				 Takeaway Learning: Identify internal in different states Draw cooling curves Calculate specific latent heat 		Takeaway Learning: • Identify internal in different states • Draw cooling curves • Calculate specific latent heat						
	Disciplinary Knowledge				 computational and to develop unfamiliar facts Interpreting ob diagrammatic, s 	servations and other data (presented in verbal, graphical, symbolic or numerical form), including erns and trends, making inferences and drawing	 Use a variety of models such as representational, spatial, descriptive, computational and mathematical to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions. Interconvert units. 					
	Common Misconceptions			s	 <u>https://spark.</u> <u>https://www.</u> <u>Video-Tutoria</u> 	tween mass and weight iop.org/misconceptions physicsclassroom.com/getattachment/Physics- l/Newtons-Laws/Force-and-Motion- ns/Lecture-Notes/LessonNotes.pdf?lang=en-US	 Difference between mass and weight <u>https://spark.iop.org/misconceptions</u> <u>https://www.physicsclassroom.com/getattachment/Physics-Video-Tutorial/Newtons-Laws/Force-and-Motion-Misconceptions/Lecture-Notes/LessonNotes.pdf?lang=en-US</u> 					
Implementation	-	 Breaking text into chunks on powerpoints Dual coding - visual clues Breaking text into chunks on powerpoints Dual coding - visual clues 				ext, graphing os es and support for answer 6 mark questions						

	Spring 1
Atomic structure (P7) Radioactivity	 Prior Knowledge: Name the three sub-atomic particles found in an atom (proton, neutron, and electron). Identify the mass and atomic number Describe how isotopes are atoms of the same element with different mass numbers.
	Takeaway Learning:
	 Identify the Rutherford (nuclear) model of an atom. Identify the type of decay taking place from a nuclear equation. Rank the three types of nuclear radiation in order of their penetrating power.

- Use a variety of models such as representational, spatial, descriptive, computational and mathematical to solve problems, make predictions and to develop scientific explanations and understanding of familiar and unfamiliar facts
- Evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences.
- Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions
- Being objective, evaluating data in terms of accuracy, precision, repeatability and reproducibility and identifying potential sources of random and systematic error.
- Difference between mass and weight
- <u>https://spark.iop.org/misconceptions</u>
- <u>https://www.physicsclassroom.com/getattachment/P</u> <u>hysics-Video-Tutorial/Newtons-Laws/Force-and-</u> <u>Motion-Misconceptions/Lecture-</u> <u>Notes/LessonNotes.pdf?lang=en-US</u>
- Teach keyword vocabulary and break down ie photo light, lysis to split
- Breaking text into chunks on powerpoints
- Dual coding visual clues
- Scaffolding for long text, graphing
- Use coloured slides
- Modelling
- Subtitles on any videos
- Provide writing frames and support for answer 6 mark questions
- Use of vocabulary sheets
- •

		Disadvantaged Students	 External Access t Support termino Support 	areer links into lessons (aspirat I trips – linked with STEM co-o to revision guides t with exam questions through plogy t long answer questions with s CGP books to support in PLC le	rdinator? use of displays and key entence starters	• • • •	External tri Access to r Support wi terminolog Support lor	evision guides th exam questions y	EM co-ordinator? through use of display		•	External trips – Access to revisi Support with ex key terminolog Support long ar	linked with on guides kam questic y nswer quest	ons (aspirational) STEM co-ordinator? ons through use of displays and ions with sentence starters ort in PLC lessons
		More Able Students	 promote hypothe knowled Asking p Encoura open-er Set an ir invite st 	esis and synthesis, as well as n dge. probing questions age effective discussion betwe nded tasks that do not have or ndependent task, such as a fun tudents to decide how they we	eculation, inference, prediction, urturing independence and self- en teacher and pupil he right answer ther investigation	• • • • • • •	promote hi hypothesis knowledge Asking prol Encourage open-ende Set an inde invite stude	gher-order skills st and synthesis, as bing questions effective discussio d tasks that do not pendent task, such ents to decide how	ed extension tasks uch as speculation, info well as nurturing indep n between teacher an t have one right answe n as a further investiga t they would like to de the class after an agre	endence and self- d pupil r tion monstrate their	• • • • •	promote higher prediction, hyp independence a Asking probing Encourage effe open-ended tas Set an independents	r-order skill othesis and and self-kno questions ctive discus sks that do dent task, s to decide h heir learning	sion between teacher and pupil not have one right answer uch as a further investigation ow they would like to s to you or the rest of the class
	Literacy/Nu meracy Selfs		• End of t	keywords copic tests g list link to be attached one	ce in School	•	Physics key Reading lis		hed once in School			Physics keywor Reading list lir		ached once in School
			End of t Class te: BBC bite Revision	 End of topic tests Class textbooks BBC bitesize Revision guides 			 Class textbooks BBC bitesize Revision guides 			 Class textbooks BBC bitesize Revision guides 				
		Writing:	• 6 mark	ion quizzes – all three key a questions copic tests	reas	:	6 mark qu End of topi	c tests			• (6 mark questic End of topic tes	ons sts	nree key areas
		Oracy:	Class disReadingAnsweri	lling, answering questions in cl scussion on topic areas being a g out loud ing questions ck through discussion and deb	addressed	•	Class discu Reading ou Answering Feedback t	t loud questions hrough discussion	s being addressed and debates		• (• • /	Reading out lou Answering ques Feedback throu	n on topic a ud stions ugh discussi	reas being addressed on and debates
		NUMERACY	Drawing cooling curves using dataCalculating density			 Drawing cooling curves using data Calculating density 				 Identify mass and atomic number Half life calculations Data analysis 				
	Digital Strategy		 Christmas lectures Cognito videos – all science subjects Interactive whiteboards for ipads - <u>https://whiteboard.fi/</u> Use of ipads to complete forms quiz to support PLC and teacher assessment Interactive physics simulation and questions - <u>physcis concept builder</u> <u>phet simulations - all three sciences</u> 			•	 Interactive whiteboards for ipads - <u>https://whiteboard.fi/</u> Use of ipads to complete forms quiz to support PLC and teacher assessment Interactive physics simulation and questions - <u>physcis concept builder</u> <u>phet simulations - all three sciences</u> 			 Interactive whiteboards for ipads - <u>https://whiteboard.fi/</u> Use of ipads to complete forms quiz to support PLC and teacher assessment Interactive physics simulation and questions - <u>physcis</u> <u>concept builder</u> <u>phet simulations - all three sciences</u> 				
	Home Learning	<u> </u>	 <u>https://sciencebob.com/category/experiments/</u> Podcasts - <u>https://www.bbc.co.uk/bitesize/articles/zdrk7v4</u> 			• Requi	 Required practical – video on forms quiz with questions to answer. Link with variables, exam techniques and data analysis 			•				
Impact	Composite Asse	essment	Dat e:	Synoptic ass Content: knowledge	essment on year 9 subject	D ate:		Content:	Synoptic assess covered in te	ment on all content rms 1 and 2.	Date:	C		Synoptic assessment on all content covered since September

٠		Definition quizzes – all three key areas
	•	6 mark questions
	•	End of topic tests
•		
	•	Cold calling, answering questions in class
	•	Class discussion on topic areas being addressed
	•	Reading out loud
	•	Answering questions
	•	Feedback through discussion and debates
	•	Identify mass and atomic number
	•	Half life calculations
	•	Data analysis
	•	Interactive whiteboards for ipads - https://whiteboard.fi/
	•	Use of ipads to complete forms quiz to support PLC and
		teacher assessment
	•	Interactive physics simulation and questions - physcis
		concept builder
	•	phet simulations - all three sciences
	•	