High Tunstall College of Science Curriculum Intent

Subject: Separate Physics Year: 10

Thread 2—Particles and radiation

	Physics Thread 2	Progress		
Topic	**Key ideas**	**R**	**A**	**G**
Particles and radiation	I can calculate the density of regular and irregular objects from practical work			
	I can explain what is meant by internal energy			
	I can calculate specific latent heat			
	I can calculate specific heat capacity			
	I can describe particle motion in gases and identify factors that affect this			
	I can describe factors that affect pressure in gases and use Boyle's law to calculate this			
	I can explain what is meant by radioactive decay, and can summarise alpha, beta and gamma radiation			
	I can explain and evaluate uses of radiation			
	I can explain what is meant by half life and calculate this			
	I can give sources of background radiation			
	I can explain the difference between contamination and irradiation			

Lesson	Learning Focus	Assessment	Key Words
1	Density RPA	Completion of practical activity and correct calculation of density	Density, **volume,** mass
2	What happens during changes of state?	Calculations of SLH, and differentiated tasks related to this	**Internal energy,** melting, freezing, condensing, evaporation, melting point, boiling point
3	How do we calculate heat transferred?	Differentiated tasks calculating specific heat capacity	Specific heat capacity, energy transferred, temperature change
4	How do particles move in gases?	Completion of pathway tasks related to self assessment and confidence	Particles, gas, **pressure**, temperature
5	How do we calculate pressure in gases?	Completion of calculations linked to pressure in gas	Pressure, temperature, gas
6	What is radioactive decay?	Completion of exam questions regarding radioactive decay	**Decay,** radioactive, nucleus, alpha, beta, gamma
7	Is radiation useful?	Explanation and evaluation of uses of radiation	Decay, radioactive, nucleus, alpha, beta, gamma
8	How do we calculate half life?	Completion of tasks looking at half life	Decay, half life, isotopes
9	How dangerous is background radiation?	Application task	**Contamination,** irradiation, radiation