Video P29 at www.science-cover.com

Do now task: Wordsearch

Z	J	A	H	N	N	I	H	F	E	G	Y	H	A	R
G	P	F	H	N	E	E	V	F	S	U	A	M	G	Z
A	H	P	L	A	W	A	I	T	A	G	L	T	I	K
I	B	Q	E	P	G	L	T	D	F	Y	S	I	U	F
C	W	Q	S	L	F	U	R	E	R	B	P	S	P	K
W	F	I	H	L	Y	O	C	U	B	O	L	N	C	U
L	K	R	A	D	I	A	T	I	O	N	U	V	L	K
P	Y	H	Y	H	C	H	A	H	J	V	M	M	N	O
S	G	U	V	J	E	A	X	M	V	G	P	T	E	N
N	H	L	P	R	E	R	N	J	W	Y	U	A	G	E
G	A	J	F	D	M	R	B	V	G	X	D	M	X	M
J	N	O	I	T	A	S	I	N	O	I	D	M	N	M
J	R	W	N	H	Y	I	G	R	S	T	I	A	T	L
D	V	B	S	S	Z	L	P	D	M	P	N	G	K	N
B	Y	L	E	F	E	L	I	O	Z	Z	G	E	E	L

Alpha
Halflife
Radiation
Gamma
Plumpudding
Beta
ionisation
Rutherford

Task 1: The history of the atom

1/ Number these events in the order in which they happened:

Event	Order
JJ Thompson discovered the electron and created the plumb pudding model.	
Dalton suggests atoms are like tiny spheres.	
Chadwick discovers the neutron. The nucleus is redrawn to include protons and neutrons as separate particles.	
Democritus states that everything is made from simple building blocks	
Bohr discovers electron shells and draws separate orbitals.	
Earnest Rutherford's scattering experiment helps discover the nucleus. The atom is redrawn with a nucleus at the centre and electrons orbiting in one orbital shell.	

2/ JJ Thomson's discovery of the electron resulted in the creation of the plum pudding model of the atom. Sketch the plumb pudding model:

3/ In the Rutherford scattering experiment

a) What type of particle was fired at the foil? ……

b) What was the foil made from and why? ……

c) Why was the experiment carried out in a vacuum?

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d) What were the results?

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e) What did Rutherford conclude?

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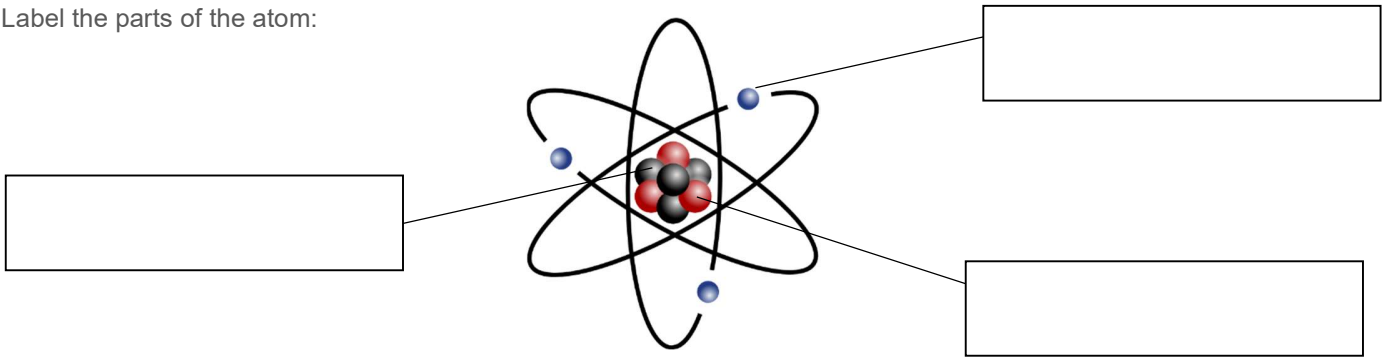
Task 2: The structure of the atom

1/ Label the parts of the atom:



2/ Complete the relative charges for the different particles:

Particle Name	Relative mass	Relative Charge

Task 3: The origin of radiation

1/ What causes the force that pushes the atom apart?

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2/ What causes the force that pulls the nucleus together?

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3/ What happens if there are too many or too few neutrons?

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Notes