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Headteacher: Mr M Wignall

September 2018

Dear Parent/Carer

Please find below some important information about how you can support your daughter/son in Science in Year 11 as we move towards the GCSEs next summer.

### Important Dates

3 October 2018

One answer knowledge test in Biology, Chemistry and Physics. If students learn key points on kerboodle for Paper 1 they should get 100%

29, 30 and 31 October

Pre-assessment on Paper 1. This is important as it gives us and colleges an indication of where students are working.

### Preparation

- The following are optional resources that have been carefully selected to help students with their study and examination preparation. **If you would like to order from the school, please pay on-line (via Scopay).** Students must then take a copy of the receipt (which may be a photograph on their phone) to the Science Technicians to collect the book.

Resources	Description	Cost Summary
CGP Exam Practice Workbook (online: All Triple Practice papers/ KS4 Triple Sci Book)	An invaluable resource for revision - £8 each with answer booklets for Trilogy (combined) Science. £13 for Separate Sciences. Ensure you get the correct tier. Please pay online via Scopay and collect from the science technicians. All Separate Science students need to buy a separate one for biology, chemistry and physics - £13 in total.	Triple Science - £9 Separate Sciences – total of £13 (for all three sciences)
Combined Science Lab Book	We strongly advise student purchase this book as it is a way of keeping the 21 required practicals for the GCSE together. They are £3 each and cover the required practicals that students are examined on. Please pay online via Scopay and collect from the science technicians.	£3 each
AQA Flashcards	AQA Flashcards contain lots of short questions to help test your knowledge recall. Perfect to dot around the house, read in the car/bus/train or ask someone to test you. Trilogy set £3.10. Separate Science set £4.20. Please pay online via Scopay and collect from the science technicians.	Triple Science - £3.10 Separate Science - £4.20
CGP Essential Maths Skills for GCSE Science	This book may help if you struggle with maths practice in science – £3 Please pay online via Scopay and collect from the science technicians. .	£3

- Equipment

It is important that students have the correct equipment for both lessons and examinations. Students should have a scientific calculator, two black pens, pencil, rubber, protractor and a ruler



- Content of Paper 1 and Paper 2

#### AQA Exam papers

Biology	Chemistry	Physics
<b>Paper 1</b> 1. Cell biology 2. Organisation 3. Infection and response 4. Bioenergetics	<b>Paper 1*</b> 8. Atomic structure and the periodic table 9. Bonding, structure, and the properties of matter 10. Quantitative chemistry 11. Chemical changes 12. Energy changes	<b>Paper 1</b> 18. Energy 19. Electricity 20. Particle model of matter 21. Atomic structure
<b>Paper 2</b> 5. Homeostasis and response 6. Inheritance, variation and evolution 7. Ecology	<b>Paper 2</b> 13. The rate and extent of chemical change 14. Organic chemistry 15. Chemical analysis 16. Chemistry of the atmosphere 17. Using resources	<b>Paper 2</b> 22. Forces 23. Waves 24. Magnetism and electromagnetism

### Diagnosis

PLCs - This Personal Learning Checklists should be the basis of your son/daughter's revision. They RAG all topics they have covered. RAG stands for Red, Amber, Green or Raise a Grade. They will be given a sheet in class with all topics on it. They highlight it in the three colours

**Red = Don't know the topic**

**Amber = OK**

**Green = Know the topic and don't need to revise it**

Students then need to apply some 'Therapy' to these areas by using the materials below to revise those areas in red and then those in amber until all topics are in green.

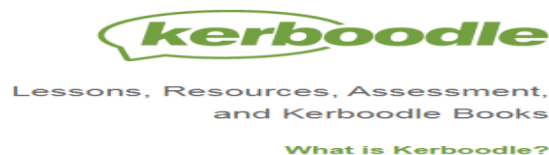
### Therapy

The following resources can be used:

- **Moodle:** This is invaluable. Students need to log onto moodle and go to the GCSE Science course. Then go to the GCSE combined science trilogy course. Here students will find:-
  - The specification
  - Exam command words
  - Subject specific vocab

Now go to the box that says 'practice makes perfect'. In here, you will find:

- **Flash cards:** a very valuable resource containing key facts, keywords and equations. They can be printed at home.
- **Placemats** which help start revision by making you research the knowledge – also very helpful
- **Kerboodle:** This is our on line text book and is accessible to all. This can be used to reinforce work not covered in class or to make revision notes from. Students have their own password for this.



Username/Email

Password

Institution Code

Remember me

[Trouble logging in?](#)

- **Tassomai:** An optional online learning resource which provides students with daily revision practice for their science GCSE. For more information <https://www.tassomai.com/how/> Subscription for the academic year costs £20.50. Please pay online via Scopay. **We will close Scopay orders on 5 October** to allow accounts to be activated before half term. Please contact us if you would like more information.
- **Useful websites are:-** [Freesciencelessons.co.uk](http://Freesciencelessons.co.uk)  
[My GCSE Science](#)  
[BBC Bitesize](#)



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### Testing

- **Doddle:** An excellent way to cover content. It is more important to repeat these until you have a high score. Better to complete one quiz and get 80% than do 3 and have 40% in each.  
<https://www.doddlelearn.co.uk/>
- **Practice Exam Questions:** Invaluable are the example questions on every topic in the 3 subjects in Moodle. If you click the link, about 12 questions come up for every topic. The answers can also be obtained from here.
- **Past Exam papers:** Please pay for these online and collect from the Science technicians on proof of purchase. £3 for a set. £9 for Triple Science.
- **Revision Book:** We hope every student has bought this.
- **Maths in Science:** This is a large component of the GCSE. Again if students need practice in this area these are available from the science technicians.

### Help

<p><b>Science Workshops:-</b>  <b>When:-</b> Every Tuesday  <b>Where:-</b> S2  <b>Time:-</b> 3.05pm – 4.00pm</p>	<p><b>Revision Bites:-</b>  <b>When:-</b> Every Tuesday  <b>Where:-</b> S7  <b>Time:-</b> 1.20 – 1.40pm</p>	<p><b>Morning Doddle:-</b>  <b>When:-</b> Every Thursday  <b>Where:-</b> C3  <b>Time:-</b> 8.00am – 8.40am</p>	<p><b>1:1 Tutoring</b>          There is a signup sheet on the science office door where you can book 1 to 1 help in a lunchtime session.</p>	
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### Homework:-

Every week students will be expected to complete 3 Doddle quizzes set on Monday for the following Monday.

Yours faithfully

Mrs C Davies  
Assitant Headteacher Science



# Combined Science Equations to learn

Equations required for Higher Tier papers only are indicated by HT in the left-hand column.

Equation number	Word equation	Symbol equation
1	weight = mass × gravitational field strength ( $g$ )	$W = m g$
2	work done = force × distance (along the line of action of the force)	$W = F s$
3	force applied to a spring = spring constant × extension	$F = k e$
4	distance travelled = speed × time	$s = v t$
5	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
6	resultant force = mass × acceleration	$F = m a$
7 HT	momentum = mass × velocity	$p = m v$
8	kinetic energy = 0.5 × mass × (speed) <sup>2</sup>	$E_k = \frac{1}{2} m v^2$
9	gravitational potential energy = mass × gravitational field strength ( $g$ ) × height	$E_p = m g h$
10	power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
11	power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
12	efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
13	efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
14	wave speed = frequency × wavelength	$v = f \lambda$
15	charge flow = current × time	$Q = I t$
16	potential difference = current × resistance	$V = I R$
17	power = potential difference × current	$P = V I$
18	power = (current) <sup>2</sup> × resistance	$P = I^2 R$
19	energy transferred = power × time	$E = P t$
20	energy transferred = charge flow × potential difference	$E = Q V$
21	density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$



## Separate Physics Equations

Equation number	Word equation	Symbol equation
1	weight = mass × gravitational field strength ( $g$ )	$W = m g$
2	work done = force × distance (along the line of action of the force)	$W = F s$
3	force applied to a spring = spring constant × extension	$F = k e$
4	moment of a force = force × distance (normal to direction of force)	$M = F d$
5	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
6	distance travelled = speed × time	$s = v t$
7	acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$
8	resultant force = mass × acceleration	$F = m a$
9 HT	momentum = mass × velocity	$p = m v$
10	kinetic energy = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
11	gravitational potential energy = mass × gravitational field strength ( $g$ ) × height	$E_p = m g h$
12	power = $\frac{\text{energy transferred}}{\text{time}}$	$P = \frac{E}{t}$
13	power = $\frac{\text{work done}}{\text{time}}$	$P = \frac{W}{t}$
14	efficiency = $\frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
15	efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
16	wave speed = frequency × wavelength	$v = f \lambda$
17	charge flow = current × time	$Q = I t$
18	potential difference = current × resistance	$V = I R$
19	power = potential difference × current	$P = V I$
20	power = (current) <sup>2</sup> × resistance	$P = I^2 R$
21	energy transferred = power × time	$E = P t$
22	energy transferred = charge flow × potential difference	$E = Q V$
23	density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$

