

# GCSE science revision pack

## Selfie competition

Do you have a great way/place to revise?

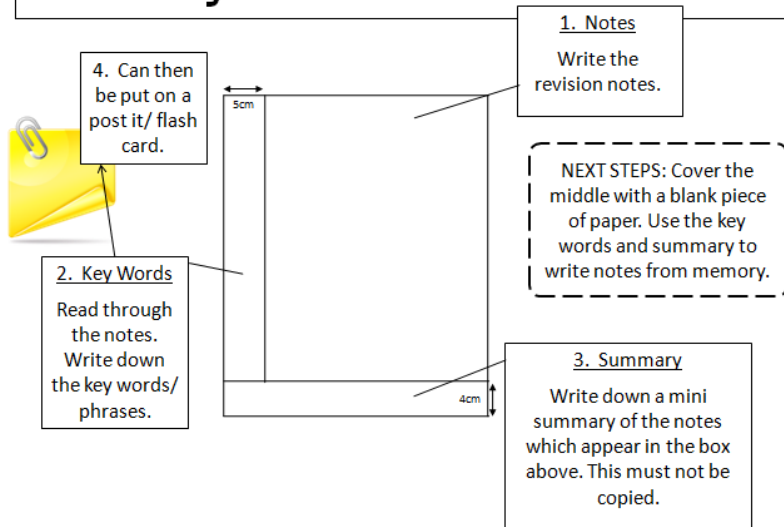
On the tube, at the gym, in Mcdonalds, on a run in the park... Maybe even in your onsie (only appropriate photos!)

If you do take a selfie of yourself revising and email it to:

[selfie@chestnutgrove.wandsworth.sch.uk](mailto:selfie@chestnutgrove.wandsworth.sch.uk)

The best selfie revision photo will win a bunch of PROUD points & a personal prize.

## Cornell System



## What NOT to do:

- read/copy notes

## Revise actively:

- Look cover write check
- The Cornell system
- Making & using Q&A cards
- Mind maps
- Past exam questions on AQA
- Activities on the school website in the science department section

## Q&A Cards

- Use small pieces of card or paper to write questions on a particular topic. The answer should be written on the other side.

*Animal & plant Cells*

1. what is the job of the nucleus?
2. what are 7 organelles in a plant cell?
3. what is the cell wall made from?
4. what is the function of the vacuole?

*Animal & plant Cells*

1. Contains genetic information
2. Vacuole, nucleus, cell wall, cell membrane, cytoplasm, mitochondria, chloroplast
3. Cellulose
4. To keep the cell shape & to store sugars

Excellent for on the bus or tube!



Keep simple. Cover the areas that you are less confident with.

Check answers by flipping over cards and repeat as much as possible.

If required, flash cards can be obtained from the Science teacher or from the Science technician.

## The exam

	Combined Science Details for each paper	<i>Triple Science Details for each paper</i>
Biology paper 1	1hr 15 mins 70 marks 16.7% of GCSE Multiple choice, structures, closed short answer & open response Qs	<i>1hr 45 mins 100 marks 50% of respective GCSE Multiple choice, structures, closed short answer &amp; open response Qs</i>
Biology paper 2		
Chemistry paper 1		
Chemistry paper 2		
Physics paper 1		
Physics paper 2		

Biology		
Module	Year taught	Test paper
1. Cell Biology	9	1
2. Organisation	9	1
3. Infection & response	10	1
4. Bioenergetics	10	1
5. Homeostasis	10	2
6. Inheritance, variation & evolution	11	2
7. Ecology	11	2

Chemistry		
Module	Year taught	Test paper
1. Atomic structure & the periodic table	9	1
2. Bonding, structure, and the properties of matter	9	1
3. Quantitative Chemistry	11	1
4. Chemical changes	11	1
5. Energy changes	11	1
6. The rate & extent of chemical change	10	2
7. Organic chemistry	10	2
8. Chemical analysis	10	2
9. Chemistry of the atmosphere	10	2
10. Using resources	10	2

Physics		
Module	Year taught	Test paper
1. Energy	10 (11)	1
2. Electricity	10/11	1
3. Particle model of matter	9 (10)	1
4. Atomic structure	9 (10)	1
5. Forces	10 (9)	2
6. Waves	11	2
7. Magnetism & electromagnetism	11	2
8. <i>Space (triple only)</i>	10	2

# Recall Physics equations

Equation number	Word equation	Symbol
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	$F = m a$
8	kinetic energy = $0.5 \times \text{mass} \times (\text{speed})^2$	$E_k = \frac{1}{2} m v^2$
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 = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$
7 Higher	momentum = mass × velocity	$p = m v$
23 Triple	moment of a force = force × distance (normal to direction of force)	$M = F d$
24 Triple	pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$P = \frac{F}{A}$

Required practicals

<b>Biology Practicals</b>	<b>Paper</b>
1. Microscopy	1
2. Osmosis	1
3. Enzymes	1
4. Food Tests	1
5. Photosynthesis	1
6. Reaction times	2
7. Field Observations	2
8. <i>Microbiology (Triple only)</i>	1
9. <i>Germination (Triple only)</i>	2
10. <i>Decay (Triple only)</i>	2

<b>Chemistry Practicals</b>	<b>Paper</b>
1. Making salts	1
2. Electrolysis	1
3. Temperature change	1
4. Water purification	2
5. Chromatography	2
6. Rates of reaction	2
7. <i>Neutralisation (Triple only)</i>	1
8. <i>Identifying ions (Triple only)</i>	2

<b>Physics Practicals</b>	<b>Paper</b>
1. Density	1
2. Specific heat capacity	1
3. Resistance	1
4. IV characteristics	1
5. Force and extension	2
6. Acceleration	2
7. Waves	2
8. Radiation and absorption	2
9. <i>Thermal insulation (Triple only)</i>	1
10. <i>Light (Triple only)</i>	2
















Required practicals video links

Topic & Paper		Chemistry			
Water purification	2	<a href="https://www.youtube.com/watch?v=N0f73tbGCRE">https://www.youtube.com/watch?v=N0f73tbGCRE</a>			
Chromatography	2	<a href="https://www.youtube.com/watch?v=kxrjvLvbY28">https://www.youtube.com/watch?v=kxrjvLvbY28</a>		<a href="https://www.youtube.com/watch?v=-XCPPB-sBFU">https://www.youtube.com/watch?v=-XCPPB-sBFU</a>	
Rate of reaction	2	<a href="https://www.youtube.com/watch?v=WlitM81qGqE">https://www.youtube.com/watch?v=WlitM81qGqE</a>		<a href="https://www.youtube.com/watch?v=wJXoUrBV6rk&amp;index=3&amp;list=PLDB8KPHmXFyc14g6QuLodbPgddhKYGA4o">https://www.youtube.com/watch?v=wJXoUrBV6rk&amp;index=3&amp;list=PLDB8KPHmXFyc14g6QuLodbPgddhKYGA4o</a>	
Making salts	1	<a href="https://www.youtube.com/watch?v=qIOMlwBoe4">https://www.youtube.com/watch?v=qIOMlwBoe4</a>		<a href="https://www.youtube.com/watch?v=B1oS1_vDmUk">https://www.youtube.com/watch?v=B1oS1_vDmUk</a>	
Electrolysis	1	<a href="https://www.youtube.com/watch?v=pW8oBf-UCWQ">https://www.youtube.com/watch?v=pW8oBf-UCWQ</a>		<a href="https://www.youtube.com/watch?v=KvW-g1FQV9E">https://www.youtube.com/watch?v=KvW-g1FQV9E</a>	
Temperature change	1	<a href="https://www.youtube.com/watch?v=xO7QL0S90e8">https://www.youtube.com/watch?v=xO7QL0S90e8</a>		<a href="https://www.youtube.com/watch?v=htiSN2qGuGc">https://www.youtube.com/watch?v=htiSN2qGuGc</a>	
TRIPLE ONLY Identifying ions	2	<a href="https://www.youtube.com/watch?v=2vCU9pVAyVE">https://www.youtube.com/watch?v=2vCU9pVAyVE</a>		<a href="https://www.youtube.com/watch?v=OVbW72RnzXQ">https://www.youtube.com/watch?v=OVbW72RnzXQ</a>	
TRIPLE ONLY Neutralisation	1	<a href="https://www.youtube.com/watch?v=8yHYoENtCEY">https://www.youtube.com/watch?v=8yHYoENtCEY</a>			

Topic & Paper		Physics			
Density	1	<a href="https://www.youtube.com/watch?v=F7uto-YfSRc">https://www.youtube.com/watch?v=F7uto-YfSRc</a>		<a href="https://www.youtube.com/watch?v=lh4W-cXcsBQ">https://www.youtube.com/watch?v=lh4W-cXcsBQ</a>	
		<a href="https://www.youtube.com/watch?v=Ypg6mRbEhWs">https://www.youtube.com/watch?v=Ypg6mRbEhWs</a>			
Specific heat capacity	1	<a href="https://www.youtube.com/watch?v=jW2ANwnfsUY">https://www.youtube.com/watch?v=jW2ANwnfsUY</a>		<a href="https://www.youtube.com/watch?v=ZYSDBU0pLvc">https://www.youtube.com/watch?v=ZYSDBU0pLvc</a>	
Resistance	1	<a href="https://www.youtube.com/watch?v=ZJKmovo-MoM">https://www.youtube.com/watch?v=ZJKmovo-MoM</a>		<a href="https://www.youtube.com/watch?v=m3JrA-sDEg">https://www.youtube.com/watch?v=m3JrA-sDEg</a>	
		<a href="https://www.youtube.com/watch?v=XSukRnxGy5c">https://www.youtube.com/watch?v=XSukRnxGy5c</a>		<a href="https://www.youtube.com/watch?v=1DI0By1Osrc">https://www.youtube.com/watch?v=1DI0By1Osrc</a>	
IV characteristics	2	<a href="https://www.youtube.com/watch?v=1QtI15E-GMU">https://www.youtube.com/watch?v=1QtI15E-GMU</a>			
Force & extension	2	<a href="https://www.youtube.com/watch?v=XoukVo6MR40">https://www.youtube.com/watch?v=XoukVo6MR40</a>		<a href="https://www.youtube.com/watch?v=QQCJeAqBumE">https://www.youtube.com/watch?v=QQCJeAqBumE</a>	
Acceleration	2	<a href="https://www.youtube.com/watch?v=gaKXmWdmeVQ&amp;list=PLM2vhNffrPZf2tUarsQounK6plAUim2z9">https://www.youtube.com/watch?v=gaKXmWdmeVQ&amp;list=PLM2vhNffrPZf2tUarsQounK6plAUim2z9</a>		<a href="https://www.youtube.com/watch?v=nRajd59oolE">https://www.youtube.com/watch?v=nRajd59oolE</a>	
Waves	2	<a href="https://www.youtube.com/watch?v=kgL-hOBvQcc">https://www.youtube.com/watch?v=kgL-hOBvQcc</a>		<a href="https://www.youtube.com/watch?v=HANMKi6-Guk">https://www.youtube.com/watch?v=HANMKi6-Guk</a>	
Radiation & absorption	2	<a href="https://www.youtube.com/watch?v=ClRrU6JuBOc">https://www.youtube.com/watch?v=ClRrU6JuBOc</a>		<a href="https://www.youtube.com/watch?v=4Pz8xcEQtMU">https://www.youtube.com/watch?v=4Pz8xcEQtMU</a>	

TRIPLE ONLY – Thermal insulation	1	<a href="https://www.youtube.com/watch?v=RZfSA2Xa6SU">https://www.youtube.com/watch?v=RZfSA2Xa6SU</a>			
TRIPLE ONLY – Light	2	<a href="https://www.youtube.com/watch?v=XTMbYDrMr0w">https://www.youtube.com/watch?v=XTMbYDrMr0w</a>		<a href="https://www.youtube.com/watch?v=4VKtq6GMbDA&amp;index=5&amp;list=PLM2vhNffrPZf2tUarsQounK6pIAUim2z9">https://www.youtube.com/watch?v=4VKtq6GMbDA&amp;index=5&amp;list=PLM2vhNffrPZf2tUarsQounK6pIAUim2z9</a>	

Topic & Paper		Biology			
Microscopy	1	<a href="https://www.youtube.com/watch?v=XKPdnE6BGew">https://www.youtube.com/watch?v=XKPdnE6BGew</a>		<a href="https://www.youtube.com/watch?v=DyL6s15WeqY">https://www.youtube.com/watch?v=DyL6s15WeqY</a>	
		<a href="https://www.youtube.com/watch?v=GXqrbp91JPg">https://www.youtube.com/watch?v=GXqrbp91JPg</a>		<a href="https://www.youtube.com/watch?v=J3HfSss5YPS">https://www.youtube.com/watch?v=J3HfSss5YPS</a>	
Osmosis	1	<a href="https://www.youtube.com/watch?v=oieXYuQm_xE">https://www.youtube.com/watch?v=oieXYuQm_xE</a>		<a href="https://www.youtube.com/watch?v=aA_UvVeQbww&amp;t=32s">https://www.youtube.com/watch?v=aA_UvVeQbww&amp;t=32s</a>	
Food tests	1	<a href="https://www.youtube.com/watch?v=sLP8dcnWnjg">https://www.youtube.com/watch?v=sLP8dcnWnjg</a>		<a href="https://www.youtube.com/watch?v=81SpohOUHjA">https://www.youtube.com/watch?v=81SpohOUHjA</a>	
Enzymes	1	<a href="https://www.youtube.com/watch?v=7wJltifm9Ws">https://www.youtube.com/watch?v=7wJltifm9Ws</a>		<a href="https://www.youtube.com/watch?v=8Yqbu56lmXk&amp;t=11s">https://www.youtube.com/watch?v=8Yqbu56lmXk&amp;t=11s</a>	
Photosynthesis	1	<a href="https://www.youtube.com/watch?v=yg8vqsBOFMw&amp;t=6s">https://www.youtube.com/watch?v=yg8vqsBOFMw&amp;t=6s</a>		<a href="https://www.youtube.com/watch?v=6xEEDZAItME">https://www.youtube.com/watch?v=6xEEDZAItME</a>	
		<a href="https://www.youtube.com/watch?v=yg8vqsBOFMw&amp;t=6s">https://www.youtube.com/watch?v=yg8vqsBOFMw&amp;t=6s</a>			

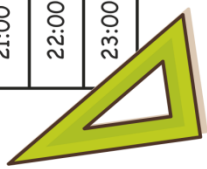


Reaction time	5	<a href="https://www.youtube.com/watch?v=81IPJtAp5Sc">https://www.youtube.com/watch?v=81IPJtAp5Sc</a>		<a href="https://www.youtube.com/watch?v=3XM-4Qavh5k">https://www.youtube.com/watch?v=3XM-4Qavh5k</a>	
Field investigations	5	<a href="https://www.youtube.com/watch?v=UDp3I07Wcrg">https://www.youtube.com/watch?v=UDp3I07Wcrg</a>		<a href="https://www.youtube.com/watch?v=lKyj7gEAAS8&amp;t=53s">https://www.youtube.com/watch?v=lKyj7gEAAS8&amp;t=53s</a>	
TRIPLE ONLY Microbiology	1	<a href="https://www.youtube.com/watch?v=6SbIFQHRnRY&amp;list=PLyLdDAgC3ROjaTKJF1sORxcSZSdxvczq9&amp;index=2">https://www.youtube.com/watch?v=6SbIFQHRnRY&amp;list=PLyLdDAgC3ROjaTKJF1sORxcSZSdxvczq9&amp;index=2</a>		<a href="https://www.youtube.com/watch?v=sZueyuUQeFc">https://www.youtube.com/watch?v=sZueyuUQeFc</a>	
TRIPLE ONLY Decay	2	<a href="https://www.youtube.com/watch?v=FVrOIMmmBQE">https://www.youtube.com/watch?v=FVrOIMmmBQE</a>			
TRIPLE ONLY Germination	2	<a href="https://www.youtube.com/watch?v=2TCu8GHS2nc">https://www.youtube.com/watch?v=2TCu8GHS2nc</a>		<a href="https://www.youtube.com/watch?v=pCFstSMvAMl">https://www.youtube.com/watch?v=pCFstSMvAMl</a>	

## Revision timetable

Combined Science is worth 2 GCSEs

- 24(25) topics to revise
- 10 weeks = 2-3 topics a week
- 2-3 hours revision a week

# Revision Timetable



Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
07:00							
08:00							
09:00							
10:00							
11:00							
12:00							
13:00							
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