

GCSE Sciences

How to support your child.

AQA
Building potential

GCSE
BIOLOGY
(8461)

Specification
For teaching from September 2016 onwards.
For exams in 2018 onwards.

Version 1.0 (24 April 2016)

GCSE
BIOLOGY
(8461)

Specifications
For teaching from September 2016 onwards
For exams in 2018 onwards

Version: 1.0 (1 April 2018)

GCSE
CHEMISTRY
(BA62)

Specification
For teaching from September 2016 onwards
For exams in 2018 onwards

Version: 1.00 (20 April 2018)

GCSE
PHYSICS
(8463)

Specification
For teaching from September 2016 onwards.
For exams in 2018 onwards.

Manuscript received 14 April 2011

this qualification is three. Linear means that students will sit all six tests at the end of the course.

1. [How to write a business plan](#) (page 10)
2. [How to write a business plan](#) (page 24)
3. [How to write a business plan](#) (page 31)
4. [How to write a business plan](#) (page 37)
5. [How to write a business plan](#) (page 47)
6. [How to write a business plan](#) (page 57)
7. [How to write a business plan](#) (page 67)
8. [How to write a business plan](#) (page 77)

Phase 1	Phase 2
<p>write's assignment</p> <p>topic 1 – e.g. ecology, organisation, mutation and response, and interrelationships.</p>	<p>write's assignment</p> <p>topic 1 – e.g. homeostasis and response, mutation, evolution and ecology, and ecology.</p>
<p>how it's assessed</p> <ul style="list-style-type: none"> • written answer: 1 hour at a time • foundation and higher tier • 100 marks • none of social 	<p>how it's assessed</p> <ul style="list-style-type: none"> • written answer: 1 hour at a time • foundation and higher tier • 100 marks • none of social
<p>classroom</p> <p>multiple choice, structures, crosses short answer and open response.</p>	<p>classroom</p> <p>multiple choice, structures, crosses short answer and open response.</p>

the periodic table provides students with a structured organization of the known chemical elements from which they can make sense of their properties and chemical properties. The historical development of the periodic table and reasons of atomic structure provide good examples of how scientific ideas are developed over time to new evidence, examples. The arrangement of elements in the modern periodic table can be explained in terms of atomic structure which provides evidence for the model of nuclear atom with electrons in energy levels.

4.1.1.1 Acids, elements and compounds

Atoms or each element are represented by a chemical symbol, e.g. C represents an atom of carbon, Na represents an atom of sodium.

compounds are formed from elements by chemical reactions. chemical reactions always involve the formation of one or more new substances, and often involve a collection of energy changes. compounds contain two or more elements chemically combined in fixed proportions and can be represented by formulas using the symbols of the elements from which they were formed. compounds can only be separated into elements by chemical reactions.

- use the names and symbols of the first 20 elements in the periodic table, the elements in groups 1 and 7, and other elements in this second booklet.

- name compounds or base elements that given formulas or symbols represent
- write word equations for the reactions in this specification
- write formulas and balanced chemical equations for the reactions in this specification.

pH only with oxoacids not equilibria and ionic equations where appropriate.

The parabolic moon is widely used to predict the behavior of solids, liquids and gases and has many applications in everyday life. It helps us to explain a wide range of observations and engineers use these principles when designing vessels to withstand high pressures and temperatures, such as submarines and spacecraft. It also explains why it is difficult to make a good cup or tea sign up a mountain.

4.3.1.1 Density of materials

the density of a material is defined by the equation:	density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$ $[\rho = \frac{kg}{m^3}]$	skills development MX 1A, D, C, 3D, C students should be able to know and apply this equation to calculate when mass is known
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densità ρ in kilogrammi per metro cubo, kg m^{-3}
 massa m in kilogrammi, kg
 volume V in metri cubi, m^3

- the pitot probe can be used to measure:
 - the stream static or total
 - difference in density

atoms around an axis to recognize the simple diagrams to mean the difference between solids, liquids and gases.	WSI 1.2
atoms around an axis to explain the differences in density between the different states or matter in terms of the arrangement of atoms or molecules.	WSI 1.2

require practice activity is use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids, volume areas or cross-sections of the elements of regular and irregular objects, and by a displacement technique for irregular objects; dimensions to be measured using appropriate apparatus such as a ruler, micrometer or vernier caliper.

As value increases by his productive activity, AV 1.

risks practice activity and provides opportunities to develop wit and wit. [debts are also an issue](#)

Students will be completing the Required Practicals, they should be able to describe and explain these!

4.3 Particle model of matter

The particle model is widely used to predict the behaviour of solids, liquids and gases and this has many applications in everyday life. It helps us to explain a wide range of observations and engineers use these principles when designing vessels to withstand high pressures and temperatures, such as submarines and spacecraft. It also explains why it is difficult to make a good cup of tea high up a mountain!

4.3.1 Changes of state and the particle model

4.3.1.1 Density of materials

Content	Key opportunities for skills development
<p>The density of a material is defined by the equation:</p> $\text{density} = \frac{\text{mass}}{\text{volume}}$ <p>[$\rho = \frac{m}{V}$]</p> <p>density, ρ, in kilograms per metre cubed, kg/m³</p> <p>mass, m, in kilograms, kg</p> <p>volume, V, in metres cubed, m³</p> <p>The particle model can be used to explain</p> <ul style="list-style-type: none"> the different states of matter differences in density. <p>Students should be able to recognise/draw simple diagrams to model the difference between solids, liquids and gases.</p> <p>Students should be able to explain the differences in density between the different states of matter in terms of the arrangement of atoms or molecules.</p>	<p>MS 1a, b, c, 3b, c</p> <p>Students should be able to recall and apply this equation to changes where mass is conserved.</p> <p>WS 1.2</p> <p>WS 1.2</p>

Required practical activity 5: use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids. Volume should be determined from the dimensions of regularly shaped objects, and by a displacement technique for irregularly shaped objects. Dimensions to be measured using appropriate apparatus such as a ruler, micrometer or Vernier callipers.

AT skills covered by this practical activity: AT 1.

This practical activity also provides opportunities to develop WS and MS. Details of all skills are given in [Key opportunities for skills development](#).

4.4.2.5 Titrations (chemistry only)

Content	Key opportunities for skills development
<p>The volumes of acid and alkali solutions that react with each other can be measured by titration using a suitable indicator.</p> <p>Students should be able to:</p> <ul style="list-style-type: none"> describe how to carry out titrations using strong acids and strong alkalis only (sulfuric, hydrochloric and nitric acids only) to find the reacting volumes accurately (HT Only) calculate the chemical quantities in titrations involving concentrations in mol/dm³ and in g/dm³. 	

Required practical 2: (chemistry only) determination of the reacting volumes of solutions of a strong acid and a strong alkali by titration.

(HT only) determination of the concentration of one of the solutions in mol/dm³ and g/dm³ from the reacting volumes and the known concentration of the other solution.

AT skills covered by this practical activity: 1 and 8.

This practical activity also provides opportunities to develop WS and MS. Details of all skills are given in [Key opportunities and skills development](#).

4.4.2.6 Strong and weak acids (HT only)

Content	Key opportunities for skills development
<p>A strong acid is completely ionised in aqueous solution. Examples of strong acids are hydrochloric, nitric and sulfuric acids.</p> <p>A weak acid is only partially ionised in aqueous solution. Examples of weak acids are ethanoic, citric and carbonic acids.</p> <p>For a given concentration of aqueous solutions, the stronger an acid, the lower the pH.</p> <p>As the pH decreases by one unit, the hydrogen ion concentration of the solution increases by a factor of 10.</p> <p>Students should be able to:</p> <ul style="list-style-type: none"> use and explain the terms dilute and concentrated (in terms of amount of substance), and weak and strong (in terms of the degree of ionisation) in relation to acids describe neutrality and relative acidity in terms of the effect on hydrogen ion concentration and the numerical value of pH (whole numbers only). 	<p>AT 8</p> <p>An opportunity to measure the pH of different acids at different concentrations.</p> <p>MS 2h</p> <p>Make order of magnitude calculations.</p>



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AQA GCSE Sciences (9-1)

0 Due this week
0 For manual marking

P8.2 Interactive: Forces between objects

Kerboodle allows the students to access the textbooks as well as animations and further resources to support them with their work.



AQA GCSE Chemistry Student checklist

C1

Name	Class	Date				
Atomic structure						
Lesson	Aiming for 4	Aiming for 6	Aiming for 8			
C1.1 Atoms	I can define the word 'element'.	<input type="checkbox"/>	I can describe the basic structure of an atom.	<input type="checkbox"/>	I can use chemical symbols of atoms to produce the chemical formulae of a range of elements and compounds.	<input type="checkbox"/>
	I can classify familiar substances as elements or compounds.	<input type="checkbox"/>	I can explain in detail, including diagrams, the difference between a pure element, mixture and compound.	<input type="checkbox"/>	I can explain the significance of chemical symbols used in formulae and equations.	<input type="checkbox"/>
	I can use the periodic table to find the symbols or names of given elements.	<input type="checkbox"/>	I can name and give the chemical symbol of the first 20 elements in the periodic table.	<input type="checkbox"/>	I can justify in detail how mass may appear to change in a chemical reaction.	<input type="checkbox"/>
	I can describe familiar chemical reactions in word equations.	<input type="checkbox"/>	I can explain why mass is conserved in a chemical reaction.	<input type="checkbox"/>	I can describe unfamiliar chemical reactions with more complex balanced symbol equations, including state symbols.	<input type="checkbox"/>
C1.2 Chemical equations	I can state that mass is conserved in a chemical reaction.	<input type="checkbox"/>	I can describe familiar chemical reactions with balanced symbol equations including state symbols.	<input type="checkbox"/>	I can write balanced symbol equations.	<input type="checkbox"/>
		<input type="checkbox"/>	I can balance given symbol equations.	<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
C1.3 Separating mixtures	I can define the word 'mixture'.	<input type="checkbox"/>	I can explain the difference between a compound and a mixture.	<input type="checkbox"/>	I can use experimental data to explain the classification of a substance as a compound or a mixture.	<input type="checkbox"/>
	I can identify a mixture and a compound.	<input type="checkbox"/>	I can explain how the chemical properties of a mixture relate to the chemical it is made from.	<input type="checkbox"/>	I can suggest an appropriate separation or purification technique for an unfamiliar mixture.	<input type="checkbox"/>
	I can list different separation techniques.	<input type="checkbox"/>	I can describe different separation techniques.	<input type="checkbox"/>	I can explain in detail how multi-step separation techniques work.	<input type="checkbox"/>



Make use of FROG...

We have resources on here to support students with their work and their revision.
This will migrate to TEAMS during the year!



Chemistry

Subject Leader: Mr Downing

Home | Year 9 | **GCSE** | A-Level | Staff



Year 10 Chemistry Curriculum

Information on areas of study



Year 11 Chemistry Curriculum

Information on areas of study



Kerboodle online textbook



BBC Bitesize Chemistry



MY GCSE Science: free online videos



THE KING'S SCHOOL
GRANTHAM

Isaac Newton's School

Chemistry

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Module 1 C1

Module 2 C2

Module 3 C3

Revision

Topic Questions

EXAM WEEK REVISION TERM 5
(CAT 4)

Topic Questions

Revision Videos

The two sub-sections contain a

The revision videos section is
change the privacy of their ma

The second section contains a

In the run up to the examinations you should be revising at least one topic each week. This will ensure that you do not need to cram/panic just before the examinations.

disappear from time-to-time as and when external providers

estions broken down by topic.