



**TOTTINGTON  
HIGH SCHOOL**  
Excellence Through Partnership

# Year 10 Information Evening

## SCIENCE



We believe, you achieve

## Combined science Trilogy year 10

### Biology Specification Units

1. Cell Biology
2. Organisation
3. Infection and response
4. Bioenergetics

### Paper 1

#### What's assessed?

Specification Units 1-4

#### Required practicals

1. Microscopes
2. Effects of osmosis on plant tissue
3. Food tests
4. Effect of pH on amylase
5. Photosynthesis

### Chemistry Specification Units

1. Atomic structure and the periodic table
2. Bonding, structure and properties of matter
3. Quantitative chemistry
4. Chemical changes
5. Energy changes

### Paper 1

#### What's assessed?

Specification Units 1-5

#### Required practicals

1. Making soluble salts
2. Electrolysis
3. Temperature changes

### Physics Specification Units

1. Energy
2. Electricity
3. Particle model of matter
4. Atomic structure

### Paper 1

#### What's assessed?

Specification Units 1-4

#### Required practicals

1. Specific heat capacity
2. Resistance
3. Current/PD characteristics
4. Density

### 3 PAPERS IN TOTAL

1 BIOLOGY  
1 CHEMISTRY  
1 PHYSICS

### Each paper

#### How it's assessed

Written exam: 1 hour 15 minutes per paper

Foundation and higher tier

70 marks, 16.7% of GCSE per paper

#### Questions

Multiple choice, structured, closed short answer and open response

## Triple/Separate Science year 10

### Biology Specification Units

1. Cell Biology
2. Organisation
3. Infection and response
4. Bioenergetics

### Paper 1

### What's assessed?

Specification Units 1-4

### Required practicals

1. Microscopes
2. Effects of osmosis on plant tissue
3. Food tests
4. Effect of pH on amylase
5. Photosynthesis

### Chemistry Specification Units

1. Atomic structure and the periodic table
2. Bonding, structure and properties of matter
3. Quantitative chemistry
4. Chemical changes
5. Energy changes

### Paper 1

### What's assessed?

Specification Units 1-5

### Required practicals

1. Making soluble salts
2. Electrolysis
3. Temperature changes

### Physics Specification Units

1. Energy
2. Electricity
3. Particle model of matter
4. Atomic structure

### Paper 1

### What's assessed?

Specification Units 1-4

### Required practicals

1. Specific heat capacity
2. Resistance
3. Current/PD characteristics
4. Density

### 3 PAPERS IN TOTAL

1 BIOLOGY  
1 CHEMISTRY  
1 PHYSICS

### Each paper

### How it's assessed

Written exam: 1 hour 45 minutes per paper  
Foundation and higher tier  
100 marks per paper, 16.7% of GCSE per paper

### Questions

Multiple choice, structured, closed short answer and open response

# Exam board and specification

- **Combined Science - AQA Trilogy (8464)**
- **AQA Biology (8461)**
- **AQA Chemistry (8462)**
- **AQA Physics (8463)**

<https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464>

<https://www.aqa.org.uk/subjects/science/gcse/biology-8461>

<https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462>

<https://www.aqa.org.uk/subjects/science/gcse/physics-8463>

# Assessment objectives

- AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.
- AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.
- AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.

## 7.2.1 Assessment objective weightings for GCSE Combined Science: Trilogy

Assessment objectives (AOs)	Component weightings (approx %)						Overall weighting (approx %)
	Biology Paper 1	Biology Paper 2	Chemistry Paper 1	Chemistry Paper 2	Physics Paper 1	Physics Paper 2	
AO1	37–43	37–43	37–43	37–43	37–43	37–43	40
AO2	37–43	37–43	37–43	37–43	37–43	37–43	40
AO3	17–23	17–23	17–23	17–23	17–23	17–23	20
Overall weighting of components	16.6	16.6	16.6	16.6	16.6	16.6	100

- Each separate science

Assessment objectives (AOs)	Component weightings (approx %)		Overall weighting (approx %)
	Paper 1	Paper 2	
AO1	37–43	37–43	40
AO2	37–43	37–43	40
AO3	17–23	17–23	20
Overall weighting of components	50	50	100

Students will be required to demonstrate the following mathematics skills in GCSE Combined Science assessments.

<b>1</b>	<b>Arithmetic and numerical computation</b>
a	Recognise and use expressions in decimal form
b	Recognise and use expressions in standard form
c	Use ratios, fractions and percentages
d	Make estimates of the results of simple calculations
<b>2</b>	<b>Handling data</b>
a	Use an appropriate number of significant figures
b	Find arithmetic means
c	Construct and interpret frequency tables and diagrams, bar charts and histograms
d	Understand the principles of sampling as applied to scientific data (biology questions only)
e	Understand simple probability (biology questions only)
f	Understand the terms mean, mode and median
g	Use a scatter diagram to identify a correlation between two variables (biology and physics questions only)
h	Make order of magnitude calculations
<b>3</b>	<b>Algebra</b>
a	Understand and use the symbols: =, <, <<, >>, >, $\propto$ , ~
b	Change the subject of an equation
c	Substitute numerical values into algebraic equations using appropriate units for physical quantities (chemistry and physics questions only)
d	Solve simple algebraic equations (biology and physics questions only)



<b>4</b>	<b>Graphs</b>
a	Translate information between graphical and numeric form
b	Understand that $y = mx + c$ represents a linear relationship
c	Plot two variables from experimental or other data
d	Determine the slope and intercept of a linear graph

<b>4</b>	<b>Graphs</b>
e	Draw and use the slope of a tangent to a curve as a measure of rate of change (chemistry and physics questions only)
f	Understand the physical significance of area between a curve and the x-axis and measure it by counting squares as appropriate (physics questions only)

<b>5</b>	<b>Geometry and trigonometry</b>
a	Use angular measures in degrees (physics questions only)
b	Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects (chemistry and physics questions only)
c	Calculate areas of triangles and rectangles, surface areas and volumes of cubes



# Online Revision resources

- <https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources?f.Resource+type%7C6=Question+papers>: This gives access to all the past papers and mark schemes plus examiners feedback. Also command word and different skills guides.
- <https://www.focuselearning.co.uk/> Required practical activities. By visiting: [www.focuselearning.co.uk](http://www.focuselearning.co.uk)


Username: student@tottingtonhighschool32776



Password: 7w0bdmwe3 3. By copying and pasting the cod

- <https://www.bbc.co.uk/bitesize/examspecs/z8r997h>: The website includes lots of relevant information and tasks that are linked to the AQA trilogy specification.
- [www.freesciencelessons.co.uk](http://www.freesciencelessons.co.uk) : Video lectures covering science topics
- <https://senecalearning.com/en-GB/>: Lots of activities and assessments you can use to test your knowledge
- <http://www.s-cool.co.uk/gcse> : Revision resources on all the key topic areas
- [www.schoolphysics.co.uk](http://www.schoolphysics.co.uk) : Click on the 14-16 tab to access GCSE topics
- <https://phet.colorado.edu/> : interactive science simulations
- <http://www.walter-fendt.de/ph14e/> : Physics animations
- <http://learn.genetics.utah.edu/content/cloning/clickandclone/> : interactive genetics simulations
- <http://www.darvill.clara.net/myon.htm> : GCSE sciences revision topics
- <https://www.physicsandmathstutor.com/physics-revision/gcse-aqa/>
- <https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/physics>
- [https://www.youtube.com/playlist?list=PL8hTyfEzPAQZLF7kMHDyeT\\_RcnF4KQhAM](https://www.youtube.com/playlist?list=PL8hTyfEzPAQZLF7kMHDyeT_RcnF4KQhAM)
- <https://www.kerboodle.com/users/login>

Login details are your full name in lower case letters with no spaces e.g. if your name is Joe Bloggs, your username is joebloggs. Your password is the same as your username. The institution code is: iy3


# Seneca


Filters  Clear all (1)


Price  


☒ Free (18)


☐ Premium (28)


Age Group 


Subject 


Exam Board 

Free 

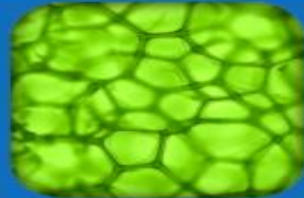
Combined Science Physics: AQA GCSE Foundation 

Combined Science Biology: AQA GCSE Foundation 

Combined Science Biology: AQA GCSE Higher 

Combined Science Chemistry: AQA GCSE Foundation 

# Focus e-learning



Biology Required Practicals



Science Images



Essential Physics KS3



Essential Physics GCSE



Essential Biology



Essential Chemistry



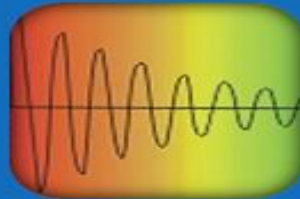
Science Investigations 1



Science Investigations 2



Focus on Physics: Fields



Focus on Physics: Waves



Modern Physics



Biology Video Library



Chemistry Video Library



Physics Video Library



Energy Use and Environment



Energy Trumps



Science Revision Flashcards

# Revision guide we recommend

- Oxford Revise GCSE combined science trilogy.
- Oxford Revise GCSE Biology
- Oxford Revise GCSE Chemistry
- Oxford Revise GCSE Physics
  
- Order via their website:  
<https://global.oup.com/education/content/secondary/key-issues/revise-with-oxford/revise-with-oxford-titles/?region=uk>
- Order via SCOPAY when info is sent out. We can order the revision guides shown below at reduced prices (50% discount). Combined Science £9.

# Tips for revision

- Make quizzes with most of the information in the question and short answers. Glossaries are ideal resources to produce the questions.
- Use the AQA website to find past papers and markschemes - attempt the questions.
- Use the resources on the AQA website to form quizzes or mind-maps based on the science specific vocabulary, command words, maths skills and required practical skills.
- Use online resources including BBC Bitesize AQA, Kerboodle and Seneca to complete the revision activities and mini tests.
- Use the 'Focus eLearning' website to complete activities about required practicals.