

Wednesday, 18 July 2018



2018

ISAAC NEWTON  
ACADEMY



# Summer IL Year 7 (into 8)



**Type:** Preparation

**Due:** For the first lesson back with your new teacher

- Over the summer you should create **by hand** a concept map/revision notes/revision posters/flash cards on the first topics you will encounter next year
- You can use BBC Bitesize or other websites/textbooks to help you with this
- Use the concepts list on the next slide to guide your preparation: Choose at least 5 points from the TOPIC OUTCOMES (on the next slide) and include them in your revision resource

## Year 7 into Year 8

Diet & Health

Electricity & Magnetism

## Key Science concepts covered (general learning objectives) for DIET AND HEALTH

1. To describe a balanced diet
2. To describe how diets can differ depending on lifestyles
3. To explain the roles of the essential nutrients
4. To Describe & Calculate BMI & Fitness
5. To describe how to test for certain essential nutrients
6. To outline the roles of the digestive organs in digestion e.g. villi
7. To describe the role of enzymes with examples
8. To explain how different factors effect enzyme action
9. To describe in detail the circulatory & respiratory systems.
10. To explain respiration using a word equation
11. To outline the use of BMI & BER in health
12. To describe the damage smoking can cause
13. To explain how the ingredients in cigarettes can harm your health
14. To explain the effects of alcohol
15. To outline the effects of illegal drugs under the four effect categories
16. To present to an audience with a clear speaking voice
17. To conduct scientific research online without plagiarising

## **Key Science concepts covered (general learning objectives) for ELECTRICITY AND MAGNETISM**

1. Recognise the differences between series and parallel circuits
2. Explain the rate of flow of charge and voltage in terms of the pressure driving charge around a circuit
3. Explain what a voltmeter measures and how it is used
4. Explain how voltage is shared by components in a circuit
5. Explain what electrical resistance is
6. Describe the factors affecting resistance in circuits
7. HSW Describe how electrical circuits work
8. Recognise the relationship between current and voltage
9. Describe some of the advantages of using electrical energy
10. Evaluate uses and benefits of scientific developments
11. Explain how improving the efficiency of appliances reduces energy consumptions and increases the sustainability of energy resources
14. Modelling energy transfer and explain the use of quantitative measures of energy.
15. Identify the difference between magnetic materials and non-magnetic materials
16. Describe some of the uses of permanent magnets
17. Explain how a magnetic field goes around the Earth
18. Explain what causes this magnetic field and some of its effects
19. Describe how to remove magnetism from magnetic materials
20. Explain magnetism using the domain theory
21. Recognise the link between magnetism and electricity
22. Describe how to change the strength of an electromagnet
23. Describe some of the uses of electromagnets
24. Explain how an electric bell and a relay work.
25. Understand about Michael Faraday and his discovery of the motor effect
26. Understand how magnetism can be used to generate electricity

# Summer IL Year 8 (into 9)



**Type:** Preparation

**Due:** For the first lesson back with your new teacher

- Over the summer you should create **by hand** a concept map/revision notes/revision posters/flash cards on the first topics you will encounter next year
- You can use BBC Bitesize or other websites/textbooks to help you with this
- Use the concepts list on the next slide to guide your preparation: Choose at least 5 points from the TOPIC OUTCOMES (on the next slide) and include them in your revision resource

## Year 8 into Year 9

Inheritance & Disease

Forensic Science

**Key Science concepts covered (General Learning Objectives) for INHERITANCE & DISEASE:**

- 1) Describe the history leading to the discovery of DNA naming the key scientists involved
- 2) Describe the structure of DNA (basic double helix) & Nucleotides (A-T , G-C)
- 3) Explain simple Mendelian inheritance patterns
- 4) Describe the difference between Dominant, Recessive genes and how they are inherited.
- 6) To describe species variation through genetics (e.g. the benefit of sexual reproduction) and its importance
- 7) To work out simple genetic crosses using punnets square.
- 8) To describe the effects and inheritance of some simple genetic diseases e.g. cystic fibrosis/muscular dystrophy/ downs syndrome & male pattern baldness.
- 9) To describe bacteria, fungi & viruses
- 10) To be able to describe & explain pathogen transmission routes
- 11) To describe (simply) the actions of white blood cells to defend against disease
- 12) To describe & explain how vaccines work
- 13) To describe some positive uses of bacteria
- 14) To name key bones of the body
- 15) to describe the action of the major joints
- 16) to simply describe the roles of the three main muscle types
- 17) To describe the role of bones in blood production
- 18) to outline How cancer forms and its effect on the body
- 19) To describe simply how cloning works
- 20) To give other uses of biotechnology, e.g. insulin production.

## **Key Science concepts covered (General Learning Objectives) for FORENSIC SCIENCE:**

1. To describe what Forensic science is
2. To describe the types of human fingerprint and explain why they can be used for identification purposes
3. To describe what causes static electricity and its effects.
4. To describe refraction and how refractive index can be used to identify glass
5. To label the parts of the microscope
6. To make scientific observations comparing fibres under the microscope
7. To describe flame tests for positive ions and use them to identify unknown compounds
8. To describe the precipitate test and use them to test for unidentified compounds
9. To describe methods of purifying substances
10. To describe the forces involved in motion and the symmetry of projectile motion.
11. To state what tensile strength is and design experiments to test this.
12. To describe and explain the properties of Metals, ceramics, polymers and composites.
13. To describe the action of levers
14. To calculate moments
15. To complete a forensic report summarising the results of multiple chemical tests.

# Finding KS3 resources on Fronter



The screenshot shows the Isaac Newton Academy Fronter interface. The top navigation bar includes 'Rooms', 'Tools', 'Staff mail', 'LGfL Resources', 'e-Portal', and 'My Documents'. The user is logged in as 'Ross Mounsey'. The current page is 'Science Y8 > Student Resources'. The left sidebar shows navigation options: Frontpage, Room, Members, Teaching Resou..., Student Resour..., Forum, and News. The main content area displays a list of folders under 'Student Resources':

- Title
- 8 Bohr Half Term IL
- 8 Franklin
- 8-Einstein IL Day 4.6.18
- 8-Fran computer lesson
- Brainpop
- End of Year exam revision materials
- IL Day Learning 14.11.17
- IL Day Learning 19.2.18
- Practice Exam Question Packs
- RMO Year 7 and Year 8 Lesson Power Points
- Science Videos
- Stretch - Badger Task
- Summer Learning 2018**
- Work
- CMB Conduction Badger AFL task.doc

A callout box with a black border and white background contains the following text:

Go to Year 7 or Year 8 Science, then **Student Resources** and look for the “**Summer Learning 2018**” folder

Here you will find:

- A copy of this Power Point with all the key Science outcomes

An arrow points from the callout box to the 'Summer Learning 2018' folder in the list.



# Summer IL Year 9 (into 10)

**Type:** Practice/Preparation

**Due:** For the first lesson back with your new teacher

Bring in **subject revision folders** (one for each Science).

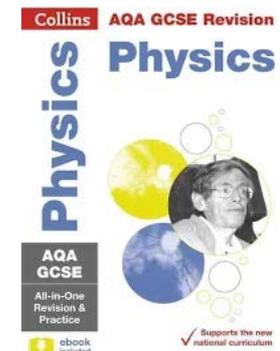
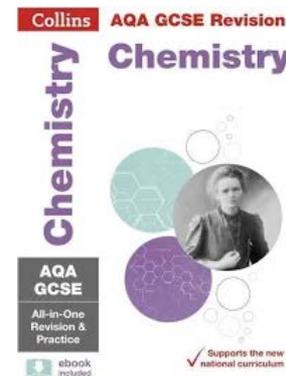
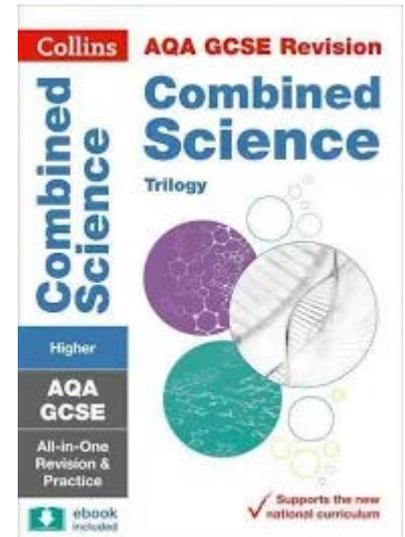
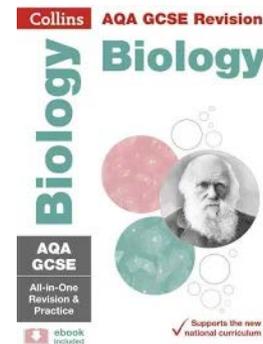
These must include:

- A printed **specification** for each Science:  
<https://www.aqa.org.uk/subjects/science/gcse> (NB: for Combined Science, choose the Trilogy spec)
- A printed and ticked off (where suitable) **GCSE checklist**
- **Revision notes** (e.g. mind-maps) for the learning completed so far (Topic 1 Biology; Topic 1 + 2 Chemistry, Topic 1 Physics)

# Summer IL Year 9 (into 10)



- After the summer, we will be selling (reduced from shop prices!) **revision guides and workbooks**
- Be ready to purchase this extremely valuable resource!



# Summer IL Year 10 (into 11)



**Type:** Practice/Preparation

**Due:** For the first lesson back with your new teacher

Bring in **subject revision folders** (one for each Science).

These must include:

- A printed **specification** for each Science:  
<https://www.aqa.org.uk/subjects/science/gcse> (NB: for Combined Science, choose the Trilogy spec)
- **Revision notes** (e.g. mind-maps) for the learning completed so far
- A printed and ticked off (where suitable) **GCSE checklist**
- Completed exam papers: one Paper 1 completed and marked **from each subject**.
  - <https://www.aqa.org.uk/subjects/science/gcse/biology-8461/assessment-resources>
  - <https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462/assessment-resources>
  - <https://www.aqa.org.uk/subjects/science/gcse/physics-8463/assessment-resources>
  - <https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources>

# Finding KS4 resources on Fronter



Isaac Newton Academy

Ross Mounsey

Search

Today Staff Room Science Y10

You are here: Science Y10 > Student Resources

Search Folders Print

- Frontpage
- Room
- Members
- Teaching Resou...
- Student Resour...
- Forum
- News

- 10-MCK IL (WE week miss ahmed)
- AQA Biology
- AQA Chemistry
- AQA Combined Science Checklists
- AQA Combined Science Trilogy
- AQA Physics
- AQA Physics Revision
- AQA Triple Science Checklists
- Chemistry Revision Resources
- I\_L day 19.2.18
- IL Day Learning 14.11.17
- Physics Revision Resources
- Practice Exam Papers
- Summer Learning 2018
- Required practical results.docx

Go to Year 9 or Year 10 Science, then **Student Resources** and look for the “**Summer Learning 2018**” folder

Here you will find:

- A copy of this Power Point
- All the **check lists** ready to print out