

Class of 2022  
 Excellence in Triple Science

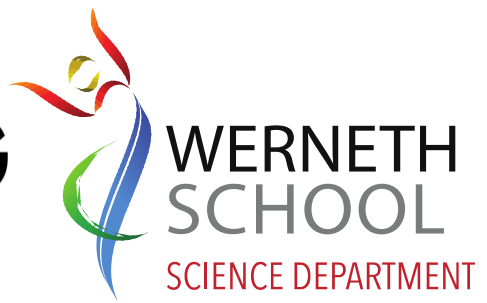


76 % of students achieved at least 3 grade 5's!  
 25 % of students achieved at least 3 grade 7's!

<b>Alexa Cross</b> 9 8 8	<b>Claudia Cross</b> 9 9 8	<b>Adam Reeves</b> 9 9 9
<b>Daheem Khan</b> 9 8 8	<b>Paige Walters</b> 8 8 8	<b>James Cooper</b> 7 7 7
<b>Jess Sellers</b> 8 8 7	<b>Eleanor Whitelegg</b> 8 8 8	<b>Ellie Dean</b> 8 7 7
<b>Alyssa Bate</b> 7 6 6	<b>Max Green</b> 8 8 6	<b>Charlotte Moffett</b> 7 6 6
<b>Luke Waddington</b> 8 7 7	<b>Connor Feeney</b> 7 7 6	<b>Luke Noon</b> 7 6 6



# Welcome to Science



- Resilience**
- Respect**
- Ambition**

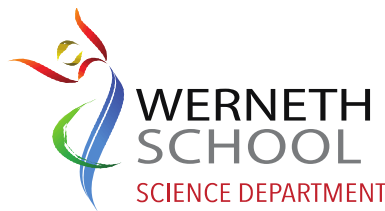
# Science 2022/23

**Mr. Brighton (Director of Science)**

**Mrs. McLaughlin (Second in Department)**

**Dr. Burrows (GCSE Transition Co-Ordinator)**

**Miss. Wicks (KS3 Co-Ordinator)**



## Expectations of students in EVERY lesson:

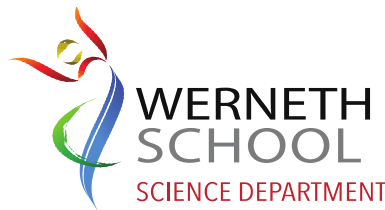
1. High Five (pen, pencil, rubber, ruler, sharpener – and spares!) ready to use EVERY lesson
2. Correct Uniform must be worn at all times
3. Sit in allocated seat
4. Register conducted in silence, answered 'Yes/Here Miss/Sir'
5. No mobile phones (ensure students have a proper scientific calculator)
6. No eating EVER, or drinking without permission
7. Orderly dismissal (standing behind seats with masks on)

Non-  
Negotiable

## Moving around school

### **Students must follow the one way system**

- Year 11: HART staircase
- Year 10: front stair case near the student entrance
- Year 8 & 9: middle back staircase
- Years 7: back corner staircase



Areas of Study

Topic	Areas of Study	The Bigger Picture
Biology 1	Cells, specialised cells, microscopes and reproduction	Cells are the building blocks of life. All organisms are built up of cells and some are specialised to carry out their functions
Chemistry 1	Particles, changes of state and the properties of different states of matter. Separating mixtures	Particles make up everything around us and even you! The world is full of mixtures from a packet of smarties to crude oil.
Physics 1	Forces, non-contact and contact forces, balanced and unbalanced forces	Forces cannot be seen but the effect of forces can. Forces explain the movement of objects
Biology 2	Ecosystems, plants and photosynthesis	Without plants and photosynthesis there would be no life on Earth!
Chemistry 2	Acids, alkalis, the pH scale, neutralisation and making salts	Have you ever wondered why placing vinegar on a wasp sting eases the pain?
Physics 2	Electricity, series and parallel circuits, circuit symbols, voltage and current	Electricity is pivotal to modern life. Why do we have different circuit types?

How will I be assessed?

- Every topic has an open book mid-point assessment. The assessment includes multiple choice questions and open-ended questions where you will be expected to apply your knowledge.
- At the end of every topic there is a closed book exam. The exam will test all elements of the studied topic.

# Learning Guide

**Students are issued with learning guides at the start of the year to tell them about:**

- **What** topics will be studied this year
- **Why** students are studying the selected topics
- **How** students will be assessed?

# What will students study?

YEAR 7		
Biology	Chemistry	Physics
Cells and Reproduction	Particles	Forces
Ecosystems and Plants	Acids and Alkalis	Electricity
Scientific Skills		

YEAR 8		
Biology	Chemistry	Physics
Microbes and Disease	Elements	Energy
Organ Systems	Chemical Reactions	Space and Waves
Scientific Skills		

# What will students study?

- Every unit of work at KS3 generally consists of approx. 10 lessons
- This will include content lessons (theory and practical based), a revision lesson and 2 assessment lessons
- The mid topic assessment is completed in exam conditions, but students may use their books to help
- The end of unit assessment is a traditional style test, also completed in exam conditions
- Following an assessment, students will be provided with an opportunity to reflect on and improve their work using teacher feedback

## Example learning journey for a topic studied:

States of Matter

Changes of State

BP/MP Practical

Chemical vs. Physical

Changes

### **Mid Topic Assessment**

Elements, Compounds & Mixtures

Pure/Impure Practical

Separation Techniques

Filtration Practical

Evaporation Practical

Distillation Practical

Chromatography

Practical

*Revision*

### **End of Unit Assessment**

# How will students be assessed?

## Year 7 Biology 1 - Cells & Reproduction

Mid-Point Assessment - To be completed in test conditions but you may use your books. Your teacher will provide feedback, which you will then use to improve your answers.

### **Multiple Choice Questions: To be completed on the sheet, circle one answer per question.**

1. Which structure is found only in a plant cell?  
a) Nucleus      b) Chloroplast      c) Cell membrane      d) Cytoplasm
2. What is an adaptation of a muscle cell?  
a) Many mitochondria      b) No nucleus      c) A tail      d) Large surface area
3. What do you use to make the image clearer on a microscope?  
a) Eyepiece      b) Objective Lens      c) Coarse Focus      d) Fine focus
4. Which of the following cells is the odd one out?  
a) Animal      b) Plant      c) Prokaryotic      d) Eukaryotic
5. Mitosis produces cells that are...?  
a) Identical      b) Similar      c) Completely Different      d) Random

### **Extended Writing: To be completed in your book on the opposite page**

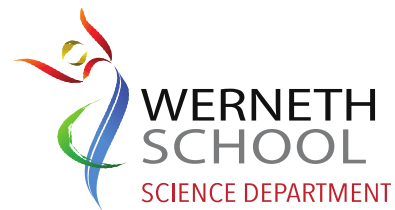
1. Describe the similarities and differences between animal and plant cells. Explain why some structures are only present in one type of cell.
2. Describe the steps you should take to prepare an onion slide for viewing and how to set up the microscope.
3. Name a specialised cell and explain how it is adapted to its function.
4. Describe how new cells are made by mitosis. Explain why it is an important process.

Teacher Feedback: Date:..... Teacher:.....

### Presentation Standards:

- Dates and Titles
- Underlining with a ruler
- Sheets glued in
- Pencil and ruler for diagrams
- Blue or Black ink only
- Does presentation illustrate pride in your work?
- Is homework completed?

Actions needed:  
.....  
.....

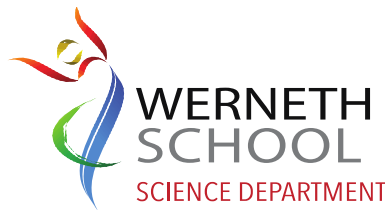


- Mid Unit assessments are made up of 5 multiple choice questions, and 4 extended writing tasks



# Presentation of work

- All students are expected to show pride in the way they present their classwork
- Dates and titles should be clear and underlined to show the learning journey
- Worksheets should be glued in
- Mistakes should be carefully erased/crossed out
- There should be no graffiti on classwork or homework



# Presentation of Work

4/9/18

**1** Making Ammonia

Reaction

Ammonia -  $\text{NH}_3$  key ingredient in fertiliser.

Nitrogen + hydrogen  $\rightleftharpoons$  Ammonia  
 $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$

**2**

• The higher the temperature, the higher the percentage yield.  
• Yield increases as pressure increases

$\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$

4 moles (higher pressure)  $\rightleftharpoons$  2 moles  
Exothermic reaction

↑ temperature, system  $\rightleftharpoons$  position of Equilibrium (left)  
 $\text{NH}_3 \downarrow$  low temp = higher yield  
Bad for rate of  
Pressure ↑

**3**

Explain the conditions used in the Haber process:  
The iron catalyst used to speed up the reaction does not affect % yield. A temperature of 450°C is used in the Haber process because if the temperature increases, the system will try to counteract the increase by shifting to the left because it is an exothermic reaction. So the position of equilibrium is to the left, decreasing the amount of  $\text{NH}_3$ . If the temperature is too low, it will increase the yield however the reaction will be too slow.  
The pressure of the reaction is at 200 atm, this is because if the pressure is too high, it will be dangerous. But high pressure increases the percentage yield of ammonia so a compromise of 200 is used.

**4**

Pressure	Yield (%) - High Temp	Yield (%) - Medium-High Temp	Yield (%) - Medium-Low Temp	Yield (%) - Low Temp
0	0	0	0	0
100	~15	~25	~35	~45
200	~25	~35	~45	~55

**5**

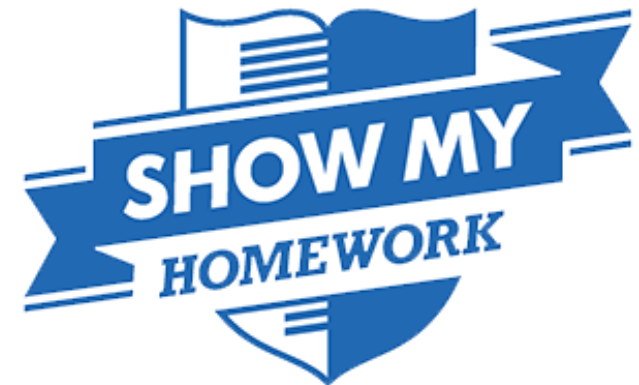
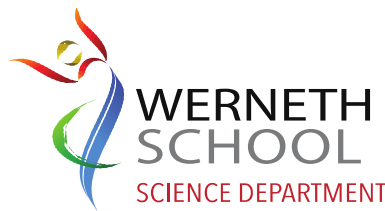
Explain the position in terms of equilibrium using the equation above. P.O.E moves right

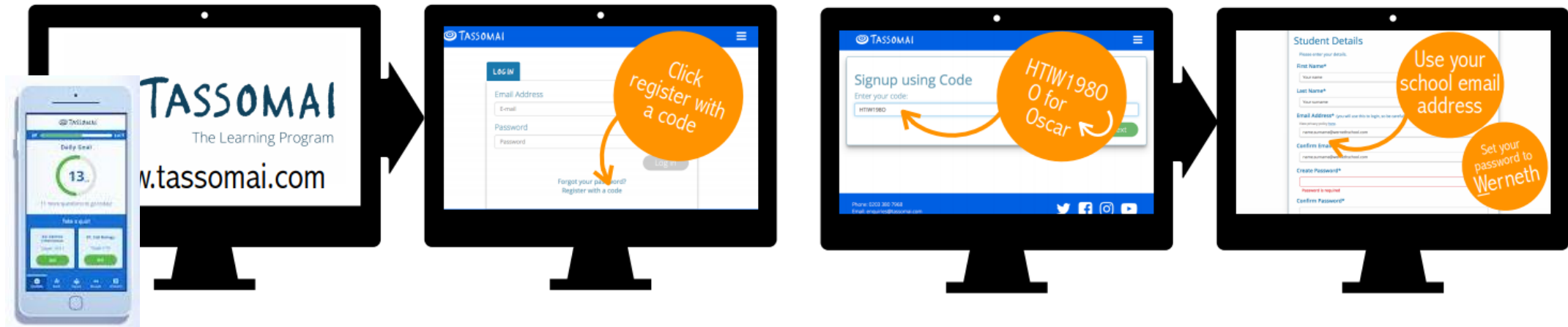
1. Dates and titles written and underlined
2. Worksheets complete and glued in
3. Subheadings used where appropriate
4. Notes in blue/black ink and diagrams in pencil
5. Student improvements based on teacher marking

# Homework

- Students are expected to complete their daily goals on Tassomai each week. Teachers may set additional tasks if appropriate.
- Each topic studied also has a standard departmental revision task to be completed at home before the final assessment.

**TASSOMAI ACCOUNTS WILL BE SET UP SHORTLY FOR ALL YEAR 7 STUDENTS**





Tassomai is an intelligent learning program (app AND website) that helps students achieve outstanding results.

Tassomai uses multiple choice style micro-quizzes to build knowledge, boost confidence and reduce exam stress.

Students should have set up their account in lessons. Passwords can be reset by emailing the class teacher.

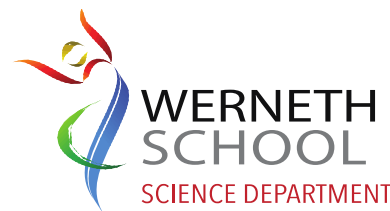
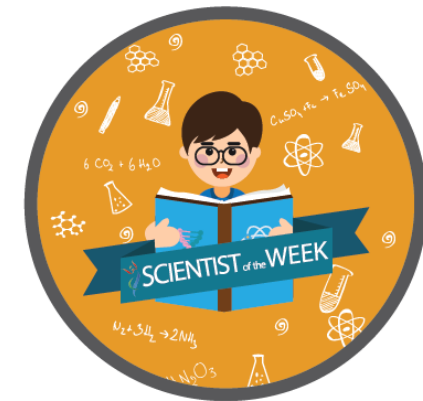
<https://www.tassomai.com/>

# Rewards

- KS3 unit certificates
- Scientist of the week
- Praise postcards
- Positive phone calls
- Rewards events
  - Cake @ break
  - School trips



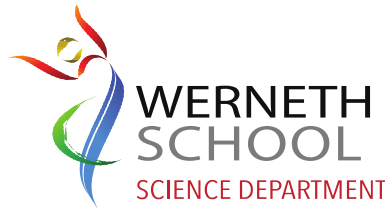
**The Big Bang**  
UK Young Scientists & Engineers Fair



# How do students get rewarded?

All nominations will be made by the class teacher... they will be looking for;

- An excellent attitude to learning
- Well presented class and homework
- Good effort and progress
- A willingness to go the 'extra mile'
- Regularly achieve Tassomai goals and complete all homework



# Pathways

Students will begin studying for their GCSE's in year 9

## Science is a core subject

Triple Science is offered as an option for students who;

- Show a good attitude to learning throughout KS3
- Wish to pursue a career in Science and or Technology
- Wish to study Science at A-Level

Students who study core Science receive two GCSE's (but still study Biology, Chemistry and Physics - usually with two teachers)

Triple Science students receive three GCSE's (Biol, Chem , Phys) and are taught by individual subject specialists in years 10 and 11


# Revision Guides

CGP Key Stage 3  
combined  
revision and work book

Revision of all key topic  
areas

Practice exam questions

£5.60 order through  
parent  
pay or main office



**Take a look**

**Try a demo of the  
Online Edition**



Please don't hesitate to contact us if you still have any questions:

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