



At St Cenydd...

- We believe homework is a key part of school life. It allows students to develop their skills and knowledge independently and can be the difference between good and excellent progress.
- We strive for all of the homework we set to be engaging and challenging, but above all worthwhile.
- We expect students to complete all their homework and contact their teachers if they have a problem with their homework.

**You must complete either the core homework OR the challenge homework.**

	Core Gwaith Cartref	Challenge Gwaith Cartref											
Space Homework 1	Title: <b>Literacy</b> - Spelling test	Title: <b>Literacy challenge</b>											
	Details: Learn the key words below ready for a spelling test. Write out each word 5 times, ready for a test next lesson: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th><i>Easier</i></th> <th><i>Harder</i></th> </tr> </thead> <tbody> <tr> <td>Orbit</td> <td>Satellite</td> </tr> <tr> <td>Planet</td> <td>Lunar Eclipse</td> </tr> <tr> <td>Uranus</td> <td>Nuclear Fusion</td> </tr> <tr> <td>Meteor</td> <td>International</td> </tr> <tr> <td>Galaxy</td> <td>Nebula</td> </tr> </tbody> </table>	<i>Easier</i>	<i>Harder</i>	Orbit	Satellite	Planet	Lunar Eclipse	Uranus	Nuclear Fusion	Meteor	International	Galaxy	Nebula
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Space Homework 2	Title: <b>Data analysis / numeracy</b> - Space: interpreting graphs Details: Click on the following link to access the core and challenge tasks. <a href="https://docs.google.com/document/d/1pa7StCiB_s0PJHRXMX90HVdVhJdjvQfkIMKntCclOnk">https://docs.google.com/document/d/1pa7StCiB_s0PJHRXMX90HVdVhJdjvQfkIMKntCclOnk</a>												
Heat transfer	Title: <b>Literacy</b> - Explaining conduction	Title: <b>Literacy</b> - Hot and cold											

Homework 3	<p>Details: Explain why solids are usually the best conductors of heat, whereas gases are usually the worst. Include diagrams of particle models to help you explain your answer.</p>	<p>Details: Create a summary poster which explains why vacuum flasks can be used to keep hot drinks hot <u>and</u> keep cold drinks cold.</p>														
Heat transfer Homework 4	<p>Title: <b>Data Analysis / Science in the News</b></p>	<p>Title: <b>Numeracy - Payback time</b></p>														
	<p>Details: Heat loss in the home. Use the following bbc link. <a href="http://www.bbc.co.uk/news/business-15431389">http://www.bbc.co.uk/news/business-15431389</a> Use skimming and scanning skills to find the answers to the following questions: 1. How much could the average household save by becoming more energy efficient? 2. What percentage of heat is lost from the windows? 3. How much would you save in total if you installed wall insulation, loft insulation, and draught proofing?</p>	<p>Details: Payback time measures how cost-effective an energy-saving measure is. The lower the payback time, the more cost effective it is. The equation is: <math display="block">\text{Payback time} = \frac{\text{cost of installation}}{\text{saving per year}}</math></p> <table border="1" data-bbox="912 1122 1386 1680"> <thead> <tr> <th>Measure</th> <th>Total cost (£)</th> <th>Saving per year (£)</th> </tr> </thead> <tbody> <tr> <td>Double glazing</td> <td>3960</td> <td>180</td> </tr> <tr> <td>Loft insulation</td> <td>288</td> <td>36</td> </tr> <tr> <td>Cavity wall insulation</td> <td>2660</td> <td>133</td> </tr> <tr> <td>Boiler jacket</td> <td>663</td> <td>39</td> </tr> </tbody> </table> <p>Which of the above measures have the longest and shortest payback times?</p>	Measure	Total cost (£)	Saving per year (£)	Double glazing	3960	180	Loft insulation	288	36	Cavity wall insulation	2660	133	Boiler jacket	663
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Light Homework 5	Title: <b>Literacy - Spelling Test</b>	Title: <b>Literacy Challenge</b>											
	<p>Details: Learn the key words below ready for a spelling test. Write out each word 5 times, ready for a test next lesson:</p> <table border="1"> <thead> <tr> <th><i>Easier</i></th> <th><i>Harder</i></th> </tr> </thead> <tbody> <tr> <td><b>Cones</b></td> <td><b>Transparent</b></td> </tr> <tr> <td><b>Colour</b></td> <td><b>Translucent</b></td> </tr> <tr> <td><b>Reflection</b></td> <td><b>Refraction</b></td> </tr> <tr> <td><b>Plane</b></td> <td><b>Dispersion</b></td> </tr> <tr> <td><b>Optic</b></td> <td><b>Convex lens</b></td> </tr> </tbody> </table>	<i>Easier</i>	<i>Harder</i>	<b>Cones</b>	<b>Transparent</b>	<b>Colour</b>	<b>Translucent</b>	<b>Reflection</b>	<b>Refraction</b>	<b>Plane</b>	<b>Dispersion</b>	<b>Optic</b>	<b>Convex lens</b>
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Light Homework 6	<p>Title: <b>Digital Task - A dark, dark world...</b></p> <p>Details: Imagine that there is no light from the Sun, only heat. Light bulbs have not yet been invented.</p> <p>Your task is to produce a digital diary entry about a world with no daylight or artificial light. Remember to include as much scientific information as possible.</p>												
Inheritance Homework 7	Title: <b>Literacy - PISA question</b>	Title: <b>Literacy - PISA question</b>											
	<p>Details:</p> <p>Attempt questions 1, 2, and 3.</p> <p><a href="https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owNkINdFhRT2ROVzA/view?usp=sharing">https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owNkINdFhRT2ROVzA/view?usp=sharing</a></p>	<p>Details:</p> <p>Attempt questions 1, 2, 3, 4, 5 and 6.</p> <p><a href="https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owNkINdFhRT2ROVzA/view?usp=sharing">https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owNkINdFhRT2ROVzA/view?usp=sharing</a></p>											
Inheritance	Title: <b>Digital - Research Task</b>	Title: <b>Digital - Research Task</b>											

Homework 8	<p>Details: Extinction</p> <p>Research the causes of extinction. You can present your findings in any format that you wish; a poster, a table, a graphic organiser, a cartoon strip.</p>	<p>Details: Extinction</p> <p>Research the causes of extinction <b>and</b> suggest ways in which we can prevent more species from becoming extinct. You can present your findings in any format that you wish; a poster, a table, a graphic organiser, a cartoon strip.</p>									
Drugs Homework 9	<p>Title: <b>Numeracy</b> - Number of units</p>	<p>Title: <b>PISA Numeracy</b> - Drug testing</p>									
	<p>Details: Number of units in alcoholic drinks.</p> <p>Number of units = (volume of drink in cm<sup>3</sup> x % concentration of alcohol) / 1000</p> <p>Calculate the number of units in each of the following drinks:            A) a 175cm<sup>3</sup> glass of 12% wine            B) a 330cm<sup>3</sup> bottle of 4.8% alcopop            C) a single measure (25cm<sup>3</sup>) of 40% gin</p>	<p>Details: Answer the questions on the following sheet:</p> <p><a href="https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owTFBEUUx5TElnMjA/view?usp=drivesdk">https://drive.google.com/a/stcenydd.co.uk/file/d/0B2xVI5ufY9owTFBEUUx5TElnMjA/view?usp=drivesdk</a></p> <p>This is all about an infamous drug that was used incorrectly. The questions are in a PISA style.</p> <p>Please use mark scheme to self check your work!</p>									
Drugs Homework 10	<p>Title: Literacy - Spelling</p>	<p>Title: Literacy - Glossary</p>									
	<p>Details: Learn the key words below ready for a spelling test. Write out each word 5 times, ready for a test next lesson:</p> <table border="1" data-bbox="411 1574 890 1906"> <thead> <tr> <th><i><b>Easier</b></i></th> <th><i><b>Harder</b></i></th> </tr> </thead> <tbody> <tr> <td><b>Alcohol</b></td> <td><b>Hallucinogens</b></td> </tr> <tr> <td><b>Medicine</b></td> <td><b>Amphetamine</b></td> </tr> <tr> <td><b>Nicotine</b></td> <td><b>Depressant</b></td> </tr> <tr> <td><b>Drugs</b></td> <td><b>Antibiotics</b></td> </tr> </tbody> </table>	<i><b>Easier</b></i>	<i><b>Harder</b></i>	<b>Alcohol</b>	<b>Hallucinogens</b>	<b>Medicine</b>	<b>Amphetamine</b>	<b>Nicotine</b>	<b>Depressant</b>	<b>Drugs</b>	<b>Antibiotics</b>
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Illegal	Ecstasy			
Microbes Homework 11	Title: <b>Science in the news</b> - the Ebola virus	Title: <b>Science in the news</b> - the Ebola virus		
	Details: Click on the following link: <a href="http://www.bbc.co.uk/news/world-africa-28755033">http://www.bbc.co.uk/news/world-africa-28755033</a>  Questions to answer: <ol style="list-style-type: none"> <li>1. When was the Ebola virus discovered?</li> <li>2. Of the six countries in which people have died from the Ebola virus, one is not in Africa. Which one?</li> <li>3. What are three of the symptoms of Ebola virus infection?</li> </ol>	Details: Click on the following link: <a href="http://www.bbc.co.uk/news/world-africa-28755033">http://www.bbc.co.uk/news/world-africa-28755033</a>  Questions to answer: <ol style="list-style-type: none"> <li>1. 60% of the 3955 people who died in Sierra Leone were female. How many females died altogether?</li> <li>2. When was Liberia declared to be Ebola free?</li> <li>3. In which country is Meliandou, where a two-year-old toddler was believed to be the source of an outbreak in the area?</li> </ol>		
Microbes Homework 12	Title: <b>Literacy Task</b> - Spelling mistakes	Title: <b>Reflection</b> - How the body protects itself		
	Details: Lymphocytes.  Correct the 12 spelling mistakes in the paragraph below. Write out a correct version of this paragraph in your book.  Lymphocytes make chemicals called antibody. Antibody kill microbes, or make them clump together, so that the phagocytes engulf many microbes at the same time. Some of this type of white blood cell, called memory	Details: Using your knowledge of the human immune system, draw a flowchart which shows how lymphocytes and phagocytes work together to fight infection.		

	<p>cells, stay in the blood after the infection. If the same type of micro-organism infects the body again, the memory cells are ready to act quickly, and you do not get any symptoms. You have immunity to that infection.</p>	
<p>Reaction of Acids Homework 13</p>	<p>Title: <b>Reflection - Word equations</b></p>	<p>Title: <b>Reflection and Numeracy - Symbol equations</b></p>
	<p>Details: Using the attached information sheet, write the word equations for the following reactions:</p> <p><a href="https://docs.google.com/document/d/1qiswkUjRmAmDjXhaIMYSY_j24XbsKOUD6IsoStYxMLU/edit?usp=sharing">https://docs.google.com/document/d/1qiswkUjRmAmDjXhaIMYSY_j24XbsKOUD6IsoStYxMLU/edit?usp=sharing</a></p> <ol style="list-style-type: none"> <li>1. Lithium and hydrochloric acid</li> <li>2. Sodium and hydrochloric acid</li> <li>3. Magnesium and Sulfuric acid</li> <li>4. Potassium and nitric acid</li> </ol>	<p>Details: Using the attached information sheet, write balanced symbol equations for the following reactions:</p> <p><a href="https://docs.google.com/document/d/1qiswkUjRmAmDjXhaIMYSY_j24XbsKOUD6IsoStYxMLU/edit?usp=sharing">https://docs.google.com/document/d/1qiswkUjRmAmDjXhaIMYSY_j24XbsKOUD6IsoStYxMLU/edit?usp=sharing</a></p> <ol style="list-style-type: none"> <li>1. Lithium and hydrochloric acid</li> <li>2. Sodium and hydrochloric acid</li> <li>3. Magnesium and Sulfuric acid</li> <li>4. Potassium and nitric acid</li> </ol>
<p>Reaction of Acids Homework 14</p>	<p>Title: <b>Reflection and Literacy - Making a pure salt</b></p>	<p>Title: <b>Reflection and Literacy - Making a pure salt.</b></p>
	<p>Details: In a lab it is possible to make a pure sample of copper sulphate crystals.</p> <p>Using your knowledge and experiences in lessons, draw a diagram of how you would set up the equipment for this experiment. Remember to label the apparatus. Your spelling of the apparatus is important!</p> <p>HINT: You may need to draw several steps.</p>	<p>Details: In a lab it is possible to make a pure sample of copper sulphate crystals.</p> <p>Write a detailed method of how to carry out the experiment.</p> <p>Include the key words below:            Copper oxide            Sulphuric acid            Copper sulphate            Filter            Evaporate</p>

Describing Chemical Reactions Homework 15	Title: <b>Literacy - Spelling test</b>	Title: <b>Literacy - Spelling</b>											
	Details: Learn the key words below ready for a spelling test. Write out each word 5 times, ready for a test next lesson: <table border="1" style="margin: 10px auto; width: 80%;"> <thead> <tr> <th style="text-align: center;"><i><u>Easier</u></i></th> <th style="text-align: center;"><i><u>Harder</u></i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Collide</td> <td style="text-align: center;">Combustion</td> </tr> <tr> <td style="text-align: center;">Conductor</td> <td style="text-align: center;">Decomposition</td> </tr> <tr> <td style="text-align: center;">Exothermic</td> <td style="text-align: center;">Displacement</td> </tr> <tr> <td style="text-align: center;">Endothermic</td> <td style="text-align: center;">Catalyst</td> </tr> <tr> <td style="text-align: center;">Dilute</td> <td style="text-align: center;">Concentration</td> </tr> </tbody> </table>	<i><u>Easier</u></i>	<i><u>Harder</u></i>	Collide	Combustion	Conductor	Decomposition	Exothermic	Displacement	Endothermic	Catalyst	Dilute	Concentration
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Describing Chemical Reactions Homework 16	Title: <b>Numeracy - Graphs to represent rate of reaction</b>	Title: <b>Numeracy - GCSE past paper question - Rates of reaction</b>											
	Details: Sketch graphs for the following; <div style="text-align: center; margin: 10px 0;"> </div> <ol style="list-style-type: none"> <li>1. A graph to show how the rate of reaction changes with temperature. Draw one line for high temperature, draw another line for a low temperature</li> </ol>	Details: Attempt this GCSE exam question! You may find it challenging, but everything you need to answer it has been covered in your lessons! <p style="text-align: center; margin-top: 10px;"> <a href="https://docs.google.com/document/d/1xtX8NLg91LOa-Tci9ofvkTe0uxshBVtjZVWgkADrSbk/edit?usp=sharing">https://docs.google.com/document/d/1xtX8NLg91LOa-Tci9ofvkTe0uxshBVtjZVWgkADrSbk/edit?usp=sharing</a> </p>											

	<p>(remember to label these!).</p> <p>2. A graph to show how the rate of a reaction changes with concentration. Draw one line for a high concentration, draw another line for a low concentration (remember to label these!).</p> <p>For each of the graphs you have drawn, write a concluding statement. E.g. the rate of reaction increases/ decreases when the _____ increases/ decreases.</p>																														
<p style="text-align: center;">Earth and Atmosphere Homework 17</p>	<p>Title: <b>Numeracy</b> - how has the Earth's atmosphere changed?</p>	<p>Title: <b>Numeracy</b> - how has the Earth's atmosphere changed?</p>																													
	<p>Details: Look at the following table and answer the questions:</p> <table border="1" data-bbox="411 1093 885 1682"> <thead> <tr> <th>Gas</th> <th>Current atmosphere percentage</th> <th>Earth's atmosphere 4.5 billion years ago</th> </tr> </thead> <tbody> <tr> <td>Nitrogen</td> <td>78</td> <td>3.5</td> </tr> <tr> <td>Oxygen</td> <td>21</td> <td>0</td> </tr> <tr> <td>Carbon dioxide</td> <td>0.035</td> <td>96.5</td> </tr> <tr> <td>Others (including water vapour, noble gases)</td> <td>Less than 1%</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> <li>What is the difference in the percentages of nitrogen between the two atmospheres?</li> <li>Why has the percentage of oxygen in the atmosphere increased?</li> </ol>	Gas	Current atmosphere percentage	Earth's atmosphere 4.5 billion years ago	Nitrogen	78	3.5	Oxygen	21	0	Carbon dioxide	0.035	96.5	Others (including water vapour, noble gases)	Less than 1%	0	<p>Details: Look at the following table and answer the questions:</p> <table border="1" data-bbox="911 1093 1385 1682"> <thead> <tr> <th>Gas</th> <th>Current atmosphere percentage</th> <th>Earth's atmosphere 4.5 billion years ago</th> </tr> </thead> <tbody> <tr> <td>Nitrogen</td> <td>78</td> <td>3.5</td> </tr> <tr> <td>Oxygen</td> <td>21</td> <td>0</td> </tr> <tr> <td>Carbon dioxide</td> <td>0.035</td> <td>96.5</td> </tr> <tr> <td>Others (including water vapour, noble gases)</td> <td>Less than 1%</td> <td>0</td> </tr> </tbody> </table> <ol style="list-style-type: none"> <li>What is the difference in the percentages of nitrogen between the two atmospheres?</li> <li>Why has the percentage of oxygen in the atmosphere increased?</li> </ol>	Gas	Current atmosphere percentage	Earth's atmosphere 4.5 billion years ago	Nitrogen	78	3.5	Oxygen	21	0	Carbon dioxide	0.035	96.5	Others (including water vapour, noble gases)	Less than 1%
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		<ol style="list-style-type: none"> <li>Name two processes which release CO<sub>2</sub> into the atmosphere.</li> <li>Even though CO<sub>2</sub> is being released, why has the percentage of CO<sub>2</sub> in the atmosphere decreased from 4.5 billion years ago?</li> </ol>
<p>Earth and Atmosphere Homework 18</p>	<p>Title: <b>Creative</b> - Cartoon of global warming issues.</p>	<p>Title: <b>Literacy and Numeracy</b> - Global Warming</p>
	<p>Details: Look at the cartoons on the link provided.  <a href="https://docs.google.com/document/d/1_z4Z6vXa2MYxIMkz53pq330gcK7f7YA8x1npU2Nqmb0/edit?usp=sharing">https://docs.google.com/document/d/1_z4Z6vXa2MYxIMkz53pq330gcK7f7YA8x1npU2Nqmb0/edit?usp=sharing</a></p> <p>The cartoons include humour, but contain an important message about global warming. They are an effective way of spreading awareness of global issues. Using the other cartoons as inspiration, create your own cartoon about an aspect of global warming.</p>	<p>Details: Click on the link below and complete the table on the worksheet. Remember to use the graph to support your ideas!</p> <p><a href="https://docs.google.com/document/d/1_3rrYn9G-UU9Vs26E5e3YrtpVK_uL9MjA_ztO8rknF0/edit?usp=sharing">https://docs.google.com/document/d/1_3rrYn9G-UU9Vs26E5e3YrtpVK_uL9MjA_ztO8rknF0/edit?usp=sharing</a></p>
<p>Innovative Materials Homework 19</p>	<p>Title: <b>Science in the news</b> - single-use plastics</p>	<p>Title: <b>Science in the news</b> - single-use plastics</p>
	<p>Details: Watch the following news article about plastic waste in the Caribbean Sea.  <a href="https://www.bbc.co.uk/news/av/world-41866046/the-giant-mass-of-plastic-waste-taking-over-the-caribbean">https://www.bbc.co.uk/news/av/world-41866046/the-giant-mass-of-plastic-waste-taking-over-the-caribbean</a></p> <p>Three of the most common plastic products that are found in seas and oceans are:  i) Drinks bottles</p>	<p>Details: Watch the following news article about plastic waste in the Caribbean Sea and answer the questions that follow:  <a href="https://www.bbc.co.uk/news/av/world-41866046/the-giant-mass-of-plastic-waste-taking-over-the-caribbean">https://www.bbc.co.uk/news/av/world-41866046/the-giant-mass-of-plastic-waste-taking-over-the-caribbean</a></p> <ol style="list-style-type: none"> <li>Polystyrene plates have been found among the waste. What is the</li> </ol>

	<p>ii) Plastic straws iii) Shopping bags. For each of the above, can you suggest an alternative material that can be used to make it? Are there any disadvantages of using the new material?</p>	<p>monomer used to make polystyrene? 2. How many plastic bottles do countries like the UK use per year? 3. What <u>percentage</u> of these are recycled?</p>
<p>Innovative Materials Homework 20</p>	<p>Title: <b>Digital task</b> - “smart” materials</p>	<p>Title: <b>Digital task</b> - “smart” materials</p>
	<p>Details: Many new materials which can be used in science and industry which are described as “smart” materials. From the list below, choose <b>three</b> of these smart materials and produce a presentation (1 slide per material) which explains what the material is and what it can be used for:</p> <ol style="list-style-type: none"> <li>1. Piezoelectric materials</li> <li>2. Smart liquids</li> <li>3. Nanotubes</li> <li>4. Shape memory alloy</li> <li>5. Nanoparticles</li> </ol>	<p>Details: Many new materials which can be used in science and industry which are described as “smart” materials. From the list below, choose <b>four</b> of these smart materials and produce a presentation (1 slide per material) which explains what the material is and what it can be used for:</p> <ol style="list-style-type: none"> <li>1. Piezoelectric materials</li> <li>2. Smart liquids</li> <li>3. Nanotubes</li> <li>4. Shape memory alloy</li> <li>5. Nanoparticles</li> </ol>