

## Subject: Science

Childwall Sports and Science Academy has a mission statement of 'Learning without Limits'. This means that we seek to engage students in the best possible learning experiences in order to enable them to achieve their potential. 'Be Ambitious' activities are those that take your regular curriculum further. They take the subjects you study in the classroom beyond that which your teacher has taught you or what you've done for home learning. For example, you may go into more depth on something you picked up in the classroom or learn about a new topic altogether. These activities are normally in the form of extra reading, but they can take many other forms, like watching videos online, downloading podcasts, attending lectures, visiting museums or entering academic competitions.

Engaging in be ambitious activities will help you develop a love for your favourite subject or subjects. In this booklet, there are a range of activities, suggested by your teachers. They are by no means exhaustive lists but should get you started. We would encourage you to share ideas and opportunities you come across with your teachers so that, over time, the recommended activities in this booklet can grow.

In the future, employers or universities will be interested to hear about what Be ambitious activities you have engaged in; they will be interested in what you have learnt and impressed by your efforts.

We wish you well in your pursuit of be ambitious activities!

**Be Ambitious – Key Stage 3**  
**Subject: SCIENCE**

Biology	Chemistry	Physics
 Grow a plant from seed	 Make indicator out of red cabbage and test household liquids. <a href="https://www.youtube.com/watch?v=R1HlygnUFEY">https://www.youtube.com/watch?v=R1HlygnUFEY</a>	 Make a string telephone. <a href="https://www.sciencekids.co.nz/projects/stringphone.html">https://www.sciencekids.co.nz/projects/stringphone.html</a>
 Delamere forest nature trail, Cheshire	 Catalyst Science Discovery Centre and Museum, Widnes	 Manchester Museum of Science and Industry
 Write a news report about what you think is the most important scientific discovery	 Women in Science: 50 Fearless Pioneers Who Changed the World – Rachel Ignotofsky	 Download Sky Maps (Google apps) or Sky View Lite (iOS). Identify three constellations and write a brief summary of them.
 <b>Operation Ouch!</b> Dr Chris, Dr Xand and Dr Ronx explore the ins and outs of the human body in a variety of eye-opening experiments.  <a href="https://www.bbc.co.uk/cbbc/shows/operation-ouch">https://www.bbc.co.uk/cbbc/shows/operation-ouch</a>	 Llechwedd Deep Mine Tour, Snowdonia (longer trip). <a href="https://www.visitwales.com/things-to-do/attractions/cave-mining-attractions">https://www.visitwales.com/things-to-do/attractions/cave-mining-attractions</a>	 <a href="https://www.bbc.co.uk/iplayer/episode/p06qj215/the-planets-series-1-1-a-moment-in-the-sun-the-terrestrial-planets">https://www.bbc.co.uk/iplayer/episode/p06qj215/the-planets-series-1-1-a-moment-in-the-sun-the-terrestrial-planets</a>
 Blue planet aquarium. Cheshire Oaks. (££)	 Make a volcano! <a href="https://www.youtube.com/watch?v=9b_gltKtERY">https://www.youtube.com/watch?v=9b_gltKtERY</a>	 <a href="https://phet.colorado.edu/en/simulations/filter?subjects=physics&amp;type=html&amp;sort=alpha&amp;view=grid">https://phet.colorado.edu/en/simulations/filter?subjects=physics&amp;type=html&amp;sort=alpha&amp;view=grid</a>

	Reading task		Writing task
	Listening task		Watching task
	Research task		Trip or visit



Creative task



Student-led task

**Be Ambitious – Key Stage 4**

Biology	Chemistry	Physics
 Museum of Liverpool. <a href="#">Directions</a>	 Research the uses of different isotopes of the same element. E.g. Hydrogen (H-1), Deuterium (H-2) and Tritium (H-3). Create a poster on the differences between them.	  A Short History of Nearly Everything (Bill Bryson)
 Find the 'Teach me Biology' or 'Revise GCSE Biology' podcast on Spotify.	 NileRed YouTube video series. Interesting and unusual chemistry experiments. <a href="https://www.youtube.com/user/TheRedNile">https://www.youtube.com/user/TheRedNile</a>	  Research alternatives to fossil fuels and produce a poster explaining the dangers of global warming.
 Watch a David Attenborough documentary <a href="https://www.bbc.co.uk/iplayer/group/p03szck8">https://www.bbc.co.uk/iplayer/group/p03szck8</a>	 Listen to the story of Fritz Haber, "The Chemist of Life and Death" <a href="https://www.bbc.co.uk/programmes/b01062gy">https://www.bbc.co.uk/programmes/b01062gy</a>	 Jodrell Bank Discovery Centre <a href="https://www.jodrellbank.net/">https://www.jodrellbank.net/</a>
 Create a model of mitosis with paper plates and pipe cleaners	 Watch the Royal Institution Christmas Lectures, starting with the 2012 series, the Modern Alchemist: <a href="https://www.rigb.org/christmas-lectures/watch/2012/the-modern-chemist">https://www.rigb.org/christmas-lectures/watch/2012/the-modern-chemist</a>	 A huge selection of thoroughly entertaining physics debates. <a href="https://www.ted.com/topics/physics">https://www.ted.com/topics/physics</a>
 Research jobs that include Biology. See which one's interest you and then use university websites to gain more information	 Create a song, a rap or a mnemonic to help you to remember the order of metals in the Reactivity Series	 <a href="https://phet.colorado.edu/en/simulations/filter?subjects=physics&amp;type=html&amp;sort=alpha&amp;view=grid">https://phet.colorado.edu/en/simulations/filter?subjects=physics&amp;type=html&amp;sort=alpha&amp;view=grid</a>



Reading task



Writing task



Listening task



Watching task



Research task



Trip or visit



LYDIATE  
LEARNING  
TRUST

ENGAGE, ENABLE,  
EMPOWER



Creative task



Student-led task



CHILDWALL  
SPORTS &  
SCIENCE ACADEMY

LYDIATE  
LEARNING TRUST