



Introduction to Industry – Program Overview Years 9 & 10 Newcastle

The programme is all about self-discovery and how you can use this knowledge to better understand how you fit into the world of industry in Newcastle. Through looking at industrial innovation in your community, you will get an understanding of how the world is moving towards a more sustainable future.

We believe that experiencing things firsthand is the best way to learn, so we will be taking you on two excursions, one to InfraBuild to see how primary steel is manufactured into everyday products such as fencing wire and the production of reinforcing rods for building with concrete. The other excursion is to CSIRO Energy Centre in Mayfield so you can see for yourself how renewable energy can be captured and stored.

You will be putting your new-found knowledge to good use from the InfraBuild wire visit. You will be working on an enquiry project that uses unique computer software to create 3D model replacement parts for parts of the machines you saw in the excursion!

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| Sessions 1-4 | <p>Students will be introduced to the program and their industry mentors. They will use the “Who I am” program, part of King’s Trust Australia Achieve framework to explore their identities. The students will also assess their strengths via a quiz that will determine their competency with key Enterprise Skills (eg problem solving, critical thinking, self-management, etc). This process will assist them in choosing the role that they will be taking on for their group over the course of the inquiry project.</p> <p>Other highlights of this set of sessions will include a speed networking session with several professionals from the local community as well as multiple hands-on mini engineering challenges.</p> |
| Sessions 5-8 | <p>In this block of sessions students will begin the first half of an inquiry project. The project involves posing the students with a problem to solve. In their hypothetical scenario, one of four possible machines used frequently in the Infrabuild business will develop a fault due to a broken part. Students will need to work out how the part looked and what it did, to create a replacement part. They will have to learn how to use Autodesk Fusion 360 to create a model of the part. The part will then be 3D printed and placed into a scale model of the machine to see if it works.</p> <p>In this block of 4 sessions, students will learn how to use Autodesk Fusion 360 as well as go on an excursion to Infrabuild, among other things to see the machines that they will be working on.</p> |
| Sessions 9-12 | <p>Students have been tackling issues at the individual business level, but now it is time for them to understand the impact that they can make at the community and even the global level. Hearing from industry experts and top CSIRO scientists, they will gain an understanding the global benefits of reducing carbon emissions.</p> |

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| Sessions 13-16 | <p>Students continue working on their machine parts designs, with an aim to 3D printing a prototype to test prior to 3D printing their final product.</p> <p>There will also be another excursion during this block of sessions to the CSIRO Energy Centre in West Mayfield.</p> |
| Sessions 17-20 | <p>The students have had the opportunity to gain insights into how their involvement in some local industries could not only help them personally, but also the local community, and even the world. This is an opportunity to reflect on these learnings as well as the incredible experiences they have had in the program.</p> <p>The showcase will provide them with the opportunity to use their recently acquired confidence and presentation skills to display the inquiry projects, into which they have put so much hard work.</p> |