



Introduction to Industry – Program Overview Years 9 & 10 Tahmoor

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 the Tahmoor area. 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 the SIMEC mine in Tahmoor and the other to the InfraBuild steelworks in Rooty Hill.

You will also be working on an enquiry project which is at the heart of the steel industry becoming a sustainable industry. This is the challenge of replacing fossil-fuelled blast furnaces with electric arc furnaces, that can be powered with renewable energy. You will get the opportunity to build a small working model wind turbine that drives a heating element to melt plastic pellets (standing in for steel!) and mould them into products.

<p>Sessions 1-4</p>	<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 (e.g.: 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>
<p>Sessions 5-8</p>	<p>In this block of sessions students will begin the first half of an inquiry project. The project involves posing the students with the challenge of replacing the blast furnaces in their steel production facility with electric arc furnaces, and to power these arc furnaces with renewable energy. The students will be required to build a working model wind turbine that supplies sufficient voltage to a heating element in order to melt and plastic polymorph pellets and mould them into the products that their facility has been commissioned to manufacture.</p> <p>In this block of 4 sessions, students will design and build their wind turbines as well as go on an excursion to Tahmoor Coillery.</p>
<p>Sessions 9-12</p>	<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>

<p>Sessions 13-16</p>	<p>Students continue working on their wind turbines as well as wiring up the electrical circuits designed to deliver the required voltage to their heating elements via rechargeable batteries, diodes and voltage regulators. They will then melt the pellets into their plastic products.</p> <p>There will also be another excursion during this block of sessions to the Infrabuild Steelworks in Rooty Hill, among other things to see the steel production processes that they will be attempting to simulate.</p>
<p>Sessions 17-20</p>	<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>