

# BAE Systems Virtual Work Experience Overview

2020/2021

# BAE Systems – Education Outreach Strategic Priorities

At BAE Systems we run a comprehensive Education Outreach Programme which is designed to achieve the following:

- To ensure we have a pipeline for future talent
- To focus our support on the STEM curriculum to address STEM skills shortages
- To work with, support and influence the Government's education agenda
- To support our wider D&I strategy
- To enhance the company's external reputation
- To support our UK Armed Forces customers through partnership activities

# Virtual Work Experience

- Providing quality **work experience placements** is critical to giving young people a real taste of Engineering and Manufacturing as well as supporting our Apprentice recruitment requirements and D&I Targets
- Programme developed for students aged 14 – 16 years
- 3 or 5 day Programme option
- Online application process
- Virtual Learning Environment (VLE) used to host course content and live sessions via conferencing software
- The programme focusses on completion of key modules and includes a STEM Project
- Each student receives individual project feedback from a BAE Systems STEM Ambassador
- On completion of 5 day programme: Participants receive Industrial Cadets Silver accreditation (certificate awarded)

## Virtual Work Experience - Considerations

- Application and selection process
- Safeguarding and Risk Assessment approach
- School information pack and communication
- Availability of a Technology Platform
- Scheduling of programme/ timetable
- Development of Project topics

## Virtual Work Experience – 5 day Timetable

BAE Systems Virtual Work Experience					
	Monday	Tuesday	Wednesday	Thursday	Friday
09:30 - 10:00	SCHOOL	SUBMIT PROJECT CHOICE TO VLE	SCHOOL	SCHOOL	SCHOOL
10:00 - 10:30	LIVE: INTRO	LIVE: EARLY CAREERS MODULE	LIVE: EMPLOYABILITY MODULE	LIVE: INTERACTIVE SESSION	LIVE: WELCOME BACK
10:30 - 11:00					
11:00 - 11:30	BREAK	BREAK	BREAK	BREAK	BREAK
11:30 - 12:00	LIVE: ENGINEERING PROJECT OPTIONS	Q & A WITH STEM AMBASSADORS (Optional)	Q & A WITH STEM AMBASSADORS (Optional)	Q & A WITH STEM AMBASSADORS (Optional)	LIVE: PROJECT PRESENTATIONS AND Q&A
12:00 - 12:30	BREAK	WORK ON PROJECT	WORK ON PROJECT	WORK ON PROJECT	
12:30 - 13:00	LIVE: PM/BUSINESS/COMMERCIAL/FINANCE PROJECT OPTIONS				
13:00 - 13:30	LIVE: INTRO TO VLE				
13:30 - 14:00	EXPLORE PROJECT OPTIONS	WORK ON PROJECT	WORK ON PROJECT	SUBMIT PROJECT CHOICE TO VLE	SCHOOL
14:00 - 14:30					
14:30 - 15:00	LIVE: WRAP UP				

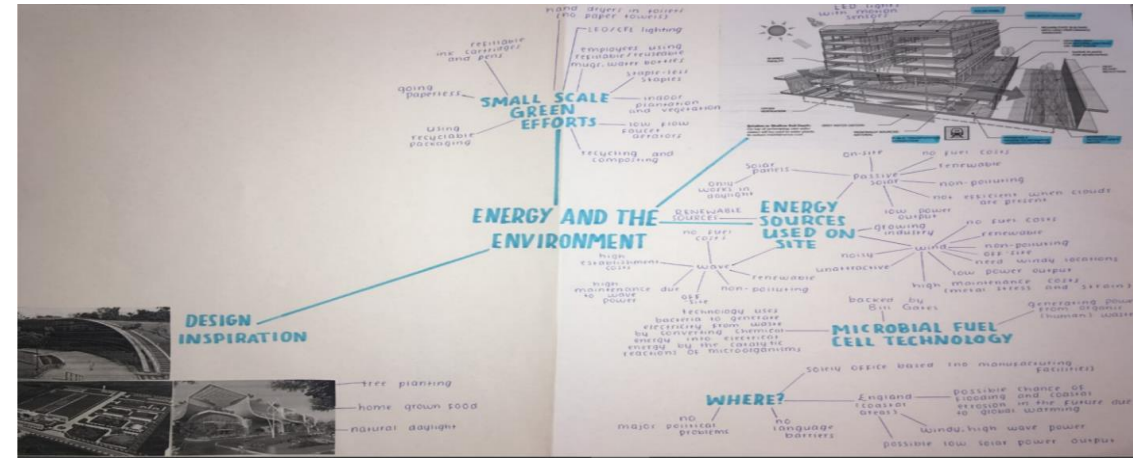
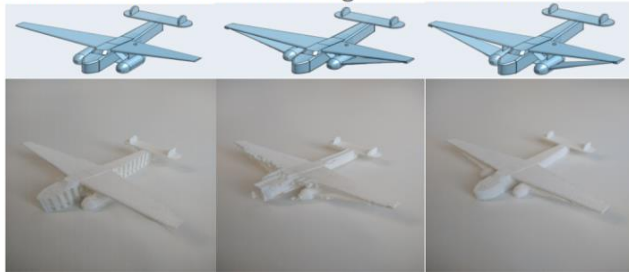
## Virtual Work Experience – 3 day Timetable

	Wednesday	Thursday	Friday
0900 to 0930	STUDENT TIME: SCHOOL	STUDENT TIME: WORK ON STEM PROJECT	STUDENT TIME: WORK ON PROJECT
0930 to 1000			
1000 to 1030	LIVE: INTRODUCTION	LIVE: EARLY CAREERS MODULE	STUDENT TIME: SUBMIT STEM PROJECT TO VLE
1030 to 1100			
1100 to 1130	BREAK	BREAK	LIVE: LIFE CHOICES
1130 to 1200	LIVE: STEM PROJECT OPTIONS	LIVE: Q&A WITH STEM AMBASSADORS (optional)	
1200 to 1230	BREAK	STUDENT TIME: WORK ON STEM PROJECT	BREAK
1230 to 1300	STUDENT TIME: EXPLORE STEM PROJECT OPTIONS		LIVE: STEM PROJECT PRESENTATIONS
1300 to 1330	LIVE: Q&A WITH STEM AMBASSADORS		
1330 to 1400	STUDENT TIME: SUBMIT STEM PROJECT CHOICE TO VLE		BREAK
1400 to 1430	LIVE: SUCCESSFUL PRESENTATIONS		LIVE: WRAP UP
1430 to 1500	LIVE: WRAP UP & GROUP ALLOCATION		STUDENT TIME: SCHOOL

# Student STEM Project Choice & Examples

## design

To design this monoplane that can convert into a biplane I wanted a pre-built aircraft that I could edit. I chose the Farland NC.223.3 as it has an overwing design which would be useful for stability in the models that have no control surfaces. The engine placement on the NC.223.3 is useful as a wing could fold out of the main wing and attach to the engine nacelle. Each biplane design has a hydraulic that can lift the lower wing into the upper wing and would fly as the monoplane.



### Biogas Innovation Hub

**Canada - Toronto**

Most waste produced in the whole world and largest agricultural exporter. High demand in engineering and Technology.

**Biogas is when organic matter is broken down in the absence of oxygen, using up harmful gases like carbon dioxide and methane, stopping them from polluting the air. The energy produced can be used as fuel, heat, electricity or in sold to farming as pesticides, livestock beddings and soil amendments.**

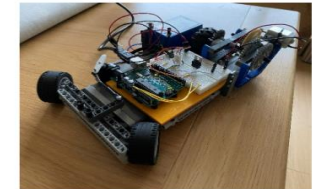
- My **FUTURE** idea for creating sustainable energy is through lightning strikes.
- transfer the energy from lightning through extremely strong circuits
- then transfer it into energy storage.
- contains up to 5 billion joules of energy.
- CN tower is struck 75 times a year which
- tall structure and has metallic components
- strengthened to contain the bursts of energy.
- Southern Ontario also has many thunderstorms.
- huge source of natural energy.

**91% reduction in greenhouse gases**

- Encourage to conserve electricity
- Double glazed or triple glazed windows to keep heat in
- Steep roof for water collection underground
- Water reduction when flushing
- Encourage to conserve water
- Encourage recycle bins
- Big windows so more natural light
- Wind Cows to allow hot air out
- Fair Trade food so less chemical damage by farmers
- Water Storage

## Create & Test a Vehicle

- The idea: Create an AMT to be controlled by an Arduino.
- Development:
  - Initial designs and rough ideas, three wheeled design.
  - Rolling chassis and motor experimentation.
  - Work on the gearbox and implementation.
  - Servo motor control and mount.
  - Controlling the two motors and the code.
- Lessons learnt:
  - Using a relay to reverse the polarity across the motor.
- Possible improvements:
  - Cargo compartment above the technical components.
  - Improved interface for changing the programmed route on the Arduino.
  - Permanently solder the components onto a bread board for a more efficient use of space.



## Virtual Work Experience – Student Feedback

- *I think that this project is fantastic, especially for the people, like myself, who have never really done anything like this before*
- *The Programme conveys the importance of planning and time management. There isn't anything I would change.*
- *All the BAE Systems staff were so friendly, explained everything with clarity and left nobody's questions unanswered, and created a really comfortable learning environment.*
- *I think it was perfectly laid out for us and it gave us lots of information about BAE Systems and also gave us information about how to work on our social skills and skills within a business.*
- *It's very informative and inspiring. I learnt so many things that will be useful to me no matter where I decide to work and what I decide to do.*