

Lesson plan: Approx. 1 hour

<p>Overview:</p> <p>This lesson is designed to give students the chance to take on a challenge set by someone working directly within the Engineering & Manufacturing industries. The challenge is designed to showcase your students' creativity, give an insight into the industries, as well as encouraging them to think about their future career interests.</p>	<p>Materials required:</p> <ul style="list-style-type: none"> • Laptop & Projector • Internet access • A4 paper (1 sheet per student) • A4 sheet of foil (Please use another material if not available e.g. newspaper, tissue paper, etc. (1 per student) • 30cm of sticky tape (1 per student) • A small bucket or washing up bowl • A measurement of weight
<p>Aims:</p> <p>Participants will:</p> <ul style="list-style-type: none"> • Develop an understanding of the different roles within the Engineering industries. • Begin to consider the career opportunities available to them in the future. 	<p>Gatsby benchmarks: 2, 4 & 5</p> <p>PSHE: KS3 L12, KS4 L7, KS4 L8</p>
	<p>Learning Objectives (Linked to SUN Progression Framework):</p> <p>18 – I can recall encounters with employers and employees and relate these to my education and career interests.</p> <p>20 - I know where to find local area labour market information to understand the possible opportunities related to careers that interest me.</p>

Teacher Guide	
Time	Notes
10mins	<p>Introduction</p> <p>Introduce the overview and aims of the session above. Ask students to put their hands up to name as many job roles as they can think of in the engineering industries. Give a few examples to start them off e.g. Software engineer, civil engineer.</p> <p>Before reflecting on their answers click here to play the What is Engineering? video to showcase the industry and set the scene for the session.</p> 

2-3mins	<p>What do they know already?</p> <p>Reflect on what they knew before and on the video they have just seen. Ask again if they can name any more roles?</p>
30mins	<p>Set the challenge</p> <p>Click here to play the challenge video.</p> <p>After the video, reiterate the challenge they have been set below. Set the task as an individual one or split the students into groups of 3 or 4. This can be adapted to work as you feel best.</p> <p>Challenge: Using only the following items design and make a floating structure to carry as much weight as possible.</p> <ul style="list-style-type: none"> • 1x A4 sheet of paper • 1x A4 sheet of foil (Please use another material if unavailable e.g. newspaper, tissue paper) • 30cm length of sticky tape <p>* Please be creative and use alternative materials if necessary.</p> <p>Give the students 10 minutes to design their structures and 10 minutes to build them.</p>
10mins	<p>Test them out</p> <p>Fill a small bucket or washing up bowl with water and put it at the front of the class for testing.</p> <p>Take it in turns to load the student's structures with weights until it sinks. Measure how much weight the structure supported. You could have a running leader board to see what the score to beat is.</p>
5mins	<p>Review/Feedback</p> <p>Feedback the results to the group. Discuss what worked well? Why was the winning structure the most successful? Was it designed differently to the others?</p>
	<p>How to find out more?</p> <p>Careerpilot: https://www.careerpilot.org.uk/job-sectors/sectors</p> <p>Prospects: https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors</p> <p>Screen Skills - https://www.screenskills.com/</p> <p>The Creative Industries – https://www.thecreativeindustries.co.uk/</p> <p>Icould - https://icould.com/explore/categories/subject/media/</p>