LEARN bydesign WORKSHOPS

ENGINEERING

OUR FUTURE

Engineering Our Future Day
Supports Career Related Learning

Approx. **180** learners

KS 3 or 4

Full day 5 workshops

This one-day programme sees learners rotate through a series of sessions, immersing themselves in the life and skills of an engineer and in the potential careers and companies in which they could work. The whole day learning experience, consists of 5 Workshops that will show the broad range of career opportunities in your engineering growth sectors, such as;

- Technology
- Infrastructure
- Transport
- Energy and Utilities
- Construction

Throughout the day learners will rotate around different engineering based workshops, led by our team of education communicators. Where possible we will also invite an engineering ambassador to join the day.

Aim:
By the end of these activities' students will
- Understand how their skills and learning in school (particularly STEM) relates to real world careers and challenges.
- Develop teamwork, problem solving, speaking, listening, creativity and aiming high skills.
- Recognise that engineering careers are for everyone and exist in their local area.

Content overview:

iEngineer
- Short introduction to robots and how they are used in different industries including medicine, manufacturing, and scientific research (e.g. mars rover).
- The class is split into two teams and the activity instructions are explained.
- Each team member has around 1-2 minutes to quickly become familiar with the VEX robot and score points for their team.
- The game rules change throughout the session, challenging the teams to adapt.
- A discussion at the end around learners' ability to pick up a new technology and the pressure involved in taking part in the challenge.

Drawing Room
- Introduction to what an innovation is using props.
- Discussion around innovative design and inoviation and how to come up with ideas.
- Working in teams (2 or 3) learners use their creativity to design an innovative products that tackles real world problems.
- Teams present their ideas back to the class.

Solution Engineering
- Introduction to the role of asking questions and research in innovation and engineering.
- In teams learners research either the ARES or kinetic paving technology, rotating around research stations to collect as much information as possible to sell the new technology.
- Teams then present back what they have researched about the technology to the class.

Engineering Infrastructure
- Introduction to what is meant by logistics
- In teams (4) learners oversee a load of cargo and must determine the best method of transport from city A to B.
- Learns visit 3 tables in turn (airport, train station or service station) to determine the time taken and cost for their cargo to be moved via a series of puzzles and maths challenges.
- The session concludes with a discussion around which of the different methods of cargo would be better and the careers linked to logistics.

Gatsby benchmarks:
- Computing: Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Design and Technology: Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists
- Mathematics: use and derive simple equations and carry out appropriate calculations

Scan the QR code to learn about the impact this workshop has had on previous students...

Or click here

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Year 7-11 KS3/4

Logistics and planning:
Each workshop is designed for around 30 learners. Some activities can be run with larger groups if requested.

We ask that a teacher is always present throughout the activities, to support learner engagement and manage behaviour.

Set up requirements:

Session	Space	IT and Power
iEngineer	Large classroom or hall - furniture moved to sides	Power, projector and screen
Career Hunt	Classroom	Projector and screen
Drawing Board	Classroom	Projector and screen
Solution Engineering	Classroom	Projector and screen
Engineering Infrastructure	Classroom	Projector and screen

Why Choose Learn by Design?
We have been delivering engineering focused activities for over seven years and within our team we have education communicators with a specific background in engineering.

We can also use our links with engineering STEM ambassadors to reach out to local ambassadors to support the day.

Full Day drop down timetable example:

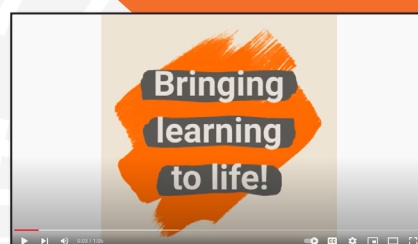|	Period 1	Period 2	Period 3	Period 4	Period 5
Career Hunt	Group 1	Group 2	Group 3	Group 4	Group 5
Drawing Board	Group 5	Group 1	Group 2	Group 3	Group 4
iEngineer	Group 4	Group 5	Group 1	Group 2	Group 3
Solution Engineering	Group 3	Group 4	Group 5	Group 1	Group 2
Infrastructure Engineering	Group 2	Group 3	Group 4	Group 5	Group 1

Half Day drop down timetable example:

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6
Career Hunt	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Drawing Board	Group 3	Group 1	Group 2	Group 6	Group 4	Group 5
iEngineer	Group 2	Group 3	Group 1	Group 5	Group 6	Group 4

For further learning this activity goes well with:
- **STEM day**
- **Green Drive Workshop**

Watch the video below to see how we've been bringing learning to life to students:

Click here