



MONTHLY ACTIVITY 3

ENGINEERS SHAPE OUR FUTURE

So what is engineering?

Engineering is the creation, maintenance and development of items that have not existed in the natural world and satisfy some human desire or need. Everything we use and rely on has been engineered in some way. Engineers take maths and science from paper and turn it into reality.

Engineers have a natural curiosity about how things work and continually ask themselves 'how can I make an object better?' By dreaming up and developing creative and practical solutions, engineers are changing how we live our lives all the time.



1890
Hairdryer
invented



1954
First Microwave
launched



1973
First mobile
phone launched



2001
iPod
launched

Engineering Fun Facts - Did You Know..

Discussion Question

Choose two items from your classroom which were engineered. Pretend you are the engineers and discuss how you could improve these items. Why would these improvements make the items better to use?

When Tony Fadell started working with Apple he had one year to develop a successful product! He developed the iPod in 2001 and the rest is history.

The very first successful text message was sent by Neil Papaworth, on 3rd December 1992; it read "Merry Christmas". Today, over 18.5 billion text messages are sent each month.

The first hair dryer was actually developed from a vacuum cleaner! In early models, the front of a vacuum cleaner sucked air in and the back blew air out. By attaching a hose to the end people were able to dry their hair!



75,000 engineering drawings were used to produce the first 747 jumbo aeroplane.

Did you know!

Rollercoasters require the input from engineers of at least five different backgrounds to make them work. These engineers include: Industrial, mechanical, civil, electrical and electronic.



ACTIVITIES

Job Match

In this activity there are descriptions of the type of jobs that engineers do. Your task is to match up the title of the engineer with a job description and also a picture that best suits the type of engineering.

Job Description

Title

Photo

I have developed this device for use in hospitals all over the world. This robotic machine enables a doctor to perform surgery on a patient who is on the other side of the world.

Structural Engineer



Sports professionals rely on engineers like me to develop equipment, materials and even clothing that will ensure they perform to their optimum potential.

Aeronautical



My job involves creating, designing and developing this large scale item that brings fun and excitement to those who use it. I study the forces in the loops and turns as well as work with electronic engineers so the carriages move on the tracks safely.

Environmental Engineers



I work with some of the most exciting elements of technology to design and create new and innovative methods of transport to meet future demands for global high speed travel.

Materials Engineer



My job involves creating new technologies that aim to reduce pollution and make our planet a cleaner and safer place to live. The technologies I work with use natural elements such as wind, water and sun to manufacture electricity. These resources are renewable so they are kinder to the environment.

Biomedical



Engineering Disciplines

There are a huge range of engineering disciplines to choose from. A discipline is another word for a field of study or a speciality. Just like how doctors can choose to be surgeons or GP's, engineers can choose what they want to specialise in. There are 11 different disciplines that engineers work in. In the word search below try to find the 11 disciplines.

- | | |
|-------------------|-------------------|
| AERONAUTICAL | BIOMEDICAL |
| BIOSYSTEMS | BUILDING SERVICES |
| CHEMICAL | CIVIL |
| COMPUTER SOFTWARE | ELECTRICAL |
| ELECTRONIC | MANUFACTURING |
| MECHANICAL | |

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E Z I Z C D L S V Y P B I D W G S
S R A E R O N A U T I C A L N L E
W D A D D U V X C O P S R I X A C
I E H W D M O Y S I D B R I N C I
A P K O T M E Y X Y N U W A A I V
H U U Q C F S L N C T A K Y L M R
B V T V W T O Y E C F G H I I E E
I P I C E O N S A C X N V C X H S
O Z D M Y N W F R R T I F J E C G
M O S G X K U N O E C R S A V M N
E I I T G N P J G B T J O S M S I
D J Y F A K E G N X L U H N C T D
I S L M B P Y N T Z U J P F I Y L
C L A C I R T C E L E Y W M F C I
A O N I N X B X D B Q K I T O Z U
L G H Q H U N P W W D M I M S C B
X W U E K W O A X R L R G T X J F
    
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The STEPS to engineering team would like to thank you for taking part in this years Xperience Engineering Project. This worksheet is the last of the three that we have posted up on our website. Please remember that the deadline to submit the entire project is the 21st of April 2010. Please include at least one completed copy of this worksheet with the rest of your project. On the 21st of May, 2010, the top 40 projects will be selected and your class may be in with a chance to win. This will mean that you will represent your school at the Xperience Engineering National Final on the 10th of June, 2010 in 'The Helix', DCU.