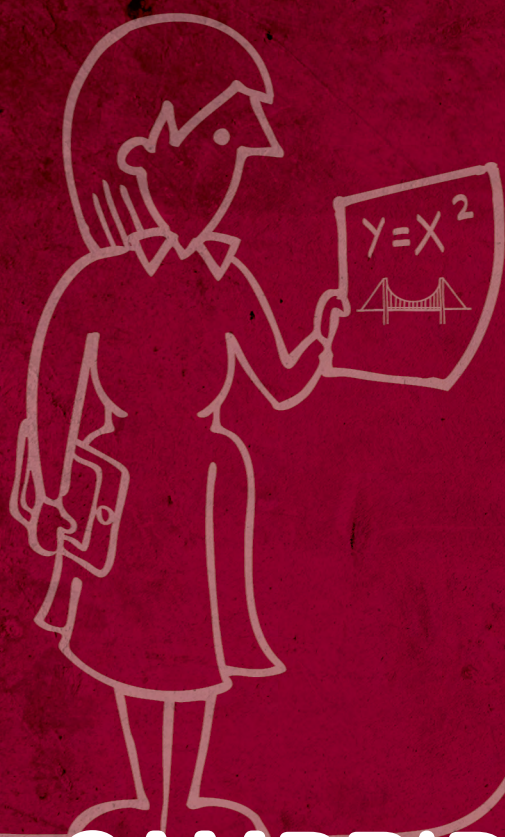




Accredited



CAMBRIDGE NATIONALS IN ENGINEERING SIEMENS RESOURCES LINK

FEBRUARY 2015

In partnership with

SIEMENS

OCR
Oxford Cambridge and RSA

WELCOME

Resources Link is an e-resource, provided by OCR, for teachers of OCR qualifications. It provides descriptions of, and links to, a variety of independent teaching and learning resources available from Siemens that you may find helpful.

In Resources Link you will find details of independent resources, many of which are free: where this is the case this has been indicated.

If you know of other resources you would like to see included here, or discover broken links, please let us know. We would also like to hear from you if you have any feedback about your use of these, or other, OCR resources. Please contact us at resourcesfeedback@ocr.org.uk.

We leave it to you, as a professional educator, to decide if any of these resources are right for you and your students, and how best to use them.



We'd like to know your view on the resources we produce. By clicking on the 'Like' or 'Dislike' button you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click 'Send'. Thank you.

OCR Resources: *the small print*

OCR's resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board and the decision to use them lies with the individual tutor. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.

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The table below shows the Siemens resources mapped to the OCR Nationals in Engineering units.

Siemens Resource Title	Principles in Engineering				Engineering Design				Engineering Manufacture				Systems Control in Engineering			
	R101	R102	R103	R104	R105	R106	R107	R108	R109	R110	R111	R112	R113	R114	R115	R116
E-Zero Island	Y	Y	Y	Y												
Green Racers					Y	Y	Y		Y							
The Greenpower Challenge					Y	Y	Y	Y	Y	Y	Y	Y				
Solid Edge Student Edition					Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Here Comes the Sun	Y	Y	Y	Y	Y	Y	Y									
I can see clearly now	Y				Y	Y	Y									
Inspired Bus Company	Y		Y		Y	Y										
Keeping it lean and mean									Y	Y	Y	Y	Y			
Lean Machines										Y	Y	Y				
Now Hear This	Y				Y	Y										
Ringing True			Y									Y				
Totally in control													Y		Y	Y
Underwater Energy	Y		Y	Y	Y								Y		Y	
Siemens Crystal Sustainable Cities Initiative		Y	Y	Y	Y	Y			Y			Y			Y	Y
Siemens Island	Y		Y					Y								
Power Matrix	Y	Y	Y	Y	Y											
Sustainability at Siemens		Y	Y													
Siemens Sustainability reports and documents		Y	Y													
Siemens careers website		Y														
Siemens Product and technology videos	Y	Y			Y	Y	Y		Y	Y	Y		Y			Y
Siemens energy stories		Y	Y		Y											
Living Energy e-magazine	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Index


Siemens Resource Title	Principles in Engineering				Engineering Design				Engineering Manufacture				Systems Control in Engineering			
	R101	R102	R103	R104	R105	R106	R107	R108	R109	R110	R111	R112	R113	R114	R115	R116
360 virtual tours of the Siemens training facility		Y	Y			Y			Y							
Energy related technical papers	Y				Y				Y				Y			
Power Engineering Guide	Y			Y	Y				Y				Y			
Customer Service Videos				Y		Y	Y	Y			Y	Y				
London Underground				Y								Y				
About Siemens		Y														
Rail Solutions			Y					Y	Y	Y	Y	Y				
Blowing in the wind	Y															
A case to resolve																Y
Project Approach Resource Bank			Y		Y	Y	Y		Y	Y	Y	Y	Y	Y		

E-Zero Island

E-Zero Island
KS4/S3 – Science and technology
Investigate how maths can support the modelling of a multi-faceted system using data and logic; apply ideas about energy transfer and sustainability to a novel context to produce a practical overall system.

Topics

- Creativity and design



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF
- Watch Video

- Understand that products and systems have an impact on quality of life.
- Explore how products contribute to lifestyle and consumer choices.
- Evaluate the needs of users and the context in which products are used to inform designing and making.

E-zero island is a class activity where learners have to balance out the energy production with energy demand on an island.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R102, R103, R104

Cost: Free

Format: Online videos. PowerPoint and PDFs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Green Racers


Green Racers

KS4/S3 – Science, technology and maths

Apply concepts of energy transfer and sustainability to understand and evaluate a system; produce and modify designs to meet a design brief and study solutions to learn how other designers have manipulated materials to meet a design brief.

Topics

- Materials
- Design and creativity
- Systems and controls
- Electronics



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF

- Apply knowledge of materials and production processes to design products and produce practical solutions that are relevant and fit for purpose.
- Make links between principles of good design, existing solutions and technological knowledge to develop innovative products and processes.
- Explore the impact of ideas, design decisions and technological advances and how these provide opportunities for new design solutions.

Linked to the Siemens Green Power Challenge, these resources explore some of the design concepts applied to building a Green Power racer.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R105, R106, R107, R109

Cost: Free

Format: Online videos, powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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resourcesfeedback@ocr.org.uk

The Greenpower Challenge

The Greenpower Challenge

Educating young people about the rewards and challenges of sustainable engineering and technology is a priority at Siemens. For this reason, Siemens supports The Greenpower Education Trust's 'Greenpower' with funding and provides industry leading CAD software to all Greenpower teams. This easy to use CAD software is available at no cost to schools. For more information go to Solid Edge Student Edition and visit teaching resources to take a look at our Green Racer schemes of work.

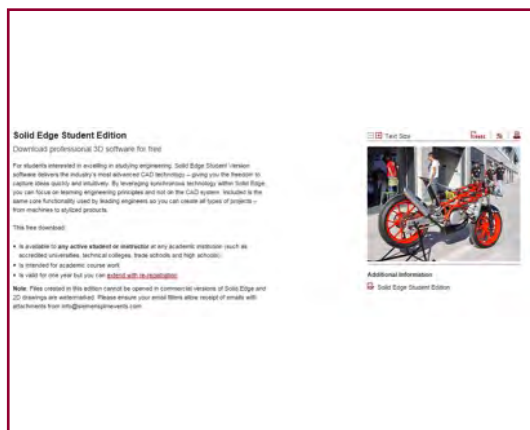


The Greenpower Challenge is a UK wide competition based on designing and racing an environmentally friendly vehicle. Key aspects of the curriculum are addressed during the competition.

- Supports:** OCR Cambridge Nationals in Engineering Level 1/2
Units R105, R106, R107, R108, R109, R110, R111, R112
- Cost:** For the latest entry costs please see the latest version of the Greenpower Challenge instructions.
- Format:** National competition
- <http://www.siemens.co.uk/education/en/activities-challenges.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Solid Edge Student Edition



An educational version of a professional 3D software suite. Educational version has some minor restrictions.

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116

Cost: Free for educational use

Format: Software

https://www.plm.automation.siemens.com/en_us/academic/resources/solid-edge/student-download.cfm?

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk


Here Comes the Sun

Here Comes the Sun
KS4/S3 – Science, design technology and maths

Understand the process of energy transfer, explaining the operation of internal combustion and photovoltaic cells and applying understanding to propose how clean technologies can be promoted.

Topics

- Creativity and design



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF
- Watch Video

- Understand that designing and making has aesthetic, environmental, technical, economic, ethical and social dimensions and impacts on the world and that products and systems have an impact on quality of life.
- Explore how products contribute to lifestyle and consumer choices, and make links between principles of good design, existing solutions and technological knowledge to develop innovative products and processes.
- Evaluate the needs of users and the context in which products are used to inform design and process.

These resources explore some of the aesthetic and practical issues involved in developing new designs.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R102, R103, R104, R105, R106, R107

Cost: Free

Format: Online videos, pdfs and powerpoint

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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I can see clearly now

I can see clearly now

KS4/S3 – Science, design technology and maths

Evaluate the impact of different technologies on society and different technological approaches to a challenge.

Topics

- Systems and controls
- Materials and processes
- Creativity and design



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF
- Watch Video

- Apply knowledge of materials and production processes to design products and produce practical solutions that are relevant and fit for purpose.
- Understand that products and systems have an impact on quality of life.
- Make links between principles of good design, existing solutions and technological knowledge to develop innovative products and processes.
- Analyse existing products and solutions to inform design and process.
- Respond creatively to briefs, developing their own proposals and producing specifications for products to solve technical problems.

These resources take the concept of light bulbs and explores the design process involved in developing them. Learners can see the relationship between design briefs and specifications.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R105, R106, R107

Cost: Free

Format: Online video, Powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Inspired Bus Company


Inspired Bus Company

KS4/S3 Science, design technology and maths

Explore the challenges facing bus designers when producing a bus for an urban environment; investigate how different solutions can be identified and evaluated and collaborate to present recommendations for an effective solution.

Topics

- Creativity and design
- Systems and controls



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF
- Watch Video

- Understand that designing and making has aesthetic, environmental, technical, economic, ethical and social dimensions and impacts on the world.
- Make links between principles of good design, existing solutions and technological knowledge to develop innovative products and processes.
- Analyse existing products and solutions to inform designing and making.
- Evaluate the needs of users and the context in which products are used to inform designing and making, and explore the impact of ideas, design decisions and technological advances and how these provide opportunities for new design solutions.
- Understand users' needs and the problems arising from them and the criteria used to judge the quality of products, including fitness for purpose, the extent to which they meet a clear need and whether resources have been used appropriately.

Learners explore some of the sustainability issues related to running public transport. The resources include a very useful graph comparing different forms of energy production.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R103, R105, R106

Cost: Free

Format: Online video, Powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Keeping it lean and mean


Keeping it lean and mean

KS4/S3 - Technology

Explore the characteristics of a production system and how to make it more efficient and understand the principles of 'Lean' and 'Just in Time' production principles.

Topics

- Creativity and design
- Product assembly
- Lean production
- Just in time manufacturing



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF

- Responding creatively to briefs, developing their own proposals and producing specifications for products and associated services.
- Generating, developing and communicating ideas in a range of ways, using appropriate strategies.
- Recognising there are moral, cultural, economic, environmental, and sustainability issues inherent in design and technology.

These resources explore efficiency from the point of a food preparation area. Learners are challenge to apply Lean principles to improve the efficiency in the kitchen area.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R109, R110, R111, R112, R113

Cost: Free

Format: Powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Lean Machines

Lean Machines
KS4/S3 - Technology

Identify key features of a production line process and consider how it can be made more effective using a simulated process to reflect on the concept of 'Just in Time manufacturing' and 'Lean manufacturing'.

Topics

- Creativity and design
- Product assembly
- Lean production
- Just in time manufacturing

Lean Machines

3D assembly line

Resources

- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Link to interactive
- View Lean Machines 'How to Play' video

Learning Objectives

- Actively engaging in the processes of design and technology to develop as effective and independent learners.
- Making decisions, considering sustainability and combining skills with knowledge and understanding in order to design and make quality product.
- Analysing existing products and produce practical solutions to needs, wants and opportunities, recognising their impact on quality of life.
- Developing decision-making skills through individual and collaborative working.
- Developing skills of creativity and critical analysis through making links between the principles of good design, existing solutions and technological knowledge.

Resources that support the Lean Machines online game. Learners will practice the application of Lean manufacturing principles to the production of cars.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R110, R111, R112

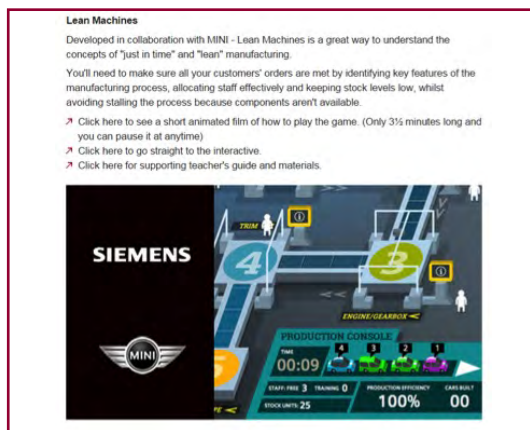
Cost: Free

Format: Online video, Powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Lean Machines



An online game where learners compete to manufacture the most cars in a given time by applying Lean manufacturing principles.

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R110, R111, R112

Cost: Free

Format: Online game

<http://www.siemens.co.uk/education/en/students/interactives.htm>


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Now Hear This

Now Hear This
KS4/S3 - Science and technology
Develop a sense of scale and proportion with regard to measurement of frequency and understand concepts of sound and ultrasound with use of a wave model.

Topics

- Systems and controls



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF

▪ Understand that products and systems have an impact on quality of life.

Learners are asked to design a hearing aid from a given brief. The resources introduce the key aspects of the design cycle.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R105, R106

Cost: Free

Format: Powerpoint and pdfs.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Ringing True


Ringing True

KS4/S3 - Science, design and technology

Understand the key features of the RaiBAM (the acoustic process that analyses noise development in axle bearings as a vehicle passes) process and explain where the timing of wheel bearing replacement is critical.

Topics

- Systems and controls
- Data handling



- Generate, develop, model and communicate ideas in a range of ways, using appropriate strategies.
- Solve technical problems.

- > Scheme of Work PDF
- > Supporting Lesson Plan PPT
- > Watch Video

Learners are introduced to acoustic monitoring techniques as applied in the rail industry. The concept of condition based monitoring is introduced and explored.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R103, R112

Cost: Free

Format: Online video, Powerpoint and pdf.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Totally in control


Totally in control

KS4/S3 - Technology and maths

Identify how sequences of commands can be used to run equipment and how logic operation can respond to inputs and control outputs.

Topics

- Systems and controls
- Electronics



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Student Support Information PDF
- Watch Video

- Explain the practical application of systems and control in design proposals.
- Describe electrical, electronic, mechanical, microprocessor and computer control systems and how to use them effectively.
- Use systems and control to assemble subsystems into more complex systems.
- Feedback how a variety of inputs can give rise to a variety of outputs.

A short case study showing how process control is used in the entertainment industry. The resources focus on fair rides at Oktoberfest in Munich, the video is in German with subtitles.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R113, R115, R116

Cost: Free

Format: Online video, Powerpoint and pdf.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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resourcesfeedback@ocr.org.uk

Underwater Energy


Underwater Energy

KS4/S3 - Science, design and technology

Understand the potential of tidal energy as part of an overall solution and use key features to evaluate the contribution tidal energy might make.

Topics

- Creativity and design



- Scheme of Work PDF
- Supporting Lesson Plan PPT
- Watch Video

- Respond creatively to briefs, develop their own proposals and produce specifications for products and associated services.
- Generate, develop and communicate ideas in a range of ways, using appropriate strategies.
- Recognise there are moral, cultural, economic, environmental, and sustainability issues inherent in design and technology.

Learners can use the resources to apply design concepts to the development of underwater turbines. Learners practice the design cycle.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R103, R104, R105, R113, R115

Cost: Free

Format: Online video, Powerpoint and pdf.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

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Siemens Crystal Sustainable Cities Initiative

The Crystal

The Crystal is an initiative from Siemens that explores how we can create a better future for our cities and is home to the world's largest exhibition focused on urban sustainability. The Crystal offers a unique educational experience and an opportunity for students to explore the major trends and challenges facing cities today.

Situated in London's Royal Victoria Docks, this immersive exhibition showcases the latest technology and stimulates discovery around the issues of climate change, demographic change and urbanisation. It aims to motivate students to study sustainable engineering and develop skills in this exciting sector.

The Crystal lets students experience first-hand many of the pioneering solutions and innovative technologies that are driving future trends for a more sustainable world. Visits can be personalized to meet specific areas of study, so that students can explore how they can make a real and personal contribution to sustainable living.

We have created a series of downloadable STEM resources for teachers and students (aimed at pupils aged 11-14). These can be used before, during and after your visit to help you plan your trip and ensure you and your students get the most from the experience.

- > Preparing for your visit
- > Teaching resources
- > The Zone downloads



The Siemens immersive exhibition centre in London has a range of STEM related zones with related activities for learners to take part in.

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R102, R103, R104, R105, R106, R109, R112, R115, R116

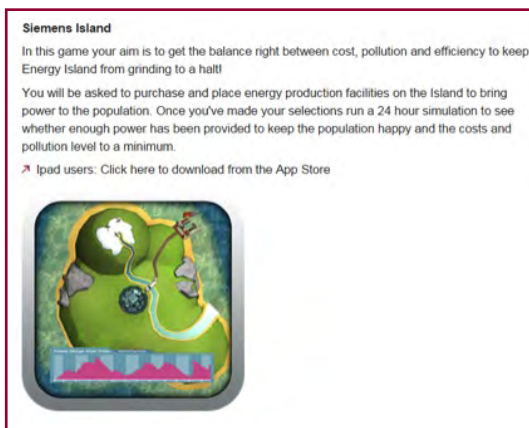
Cost: Free to download the resources and free for educational visits

Format: Exhibition

<http://www.siemens.co.uk/education/en/teachers/the-crystal.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Siemens Island



An online game in which learners are challenged to balance the energy requirements and production within a closed system.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R103, R108

Cost: Free

Format: Online game

<http://www.siemens.co.uk/education/en/students/interactives.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Power Matrix



A large scale city simulation game where learners compete to provide the energy needs of a thriving city by developing an effective energy strategy.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R102, R103, R104, R105

Cost: Free

Format: Online Game

<http://www.siemens.co.uk/education/en/students/interactives.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Power Matrix Resources



Information and videos supporting the Power Matrix Game

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R102, R103, R104, R105

Cost: Free

Format: Online Videos

<http://www.energy.siemens.com/br/en/energy-topics/power-matrix/>

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resourcesfeedback@ocr.org.uk

Sustainability at Siemens



A one page summary of the Siemens sustainability performance for 2013.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R102, R103

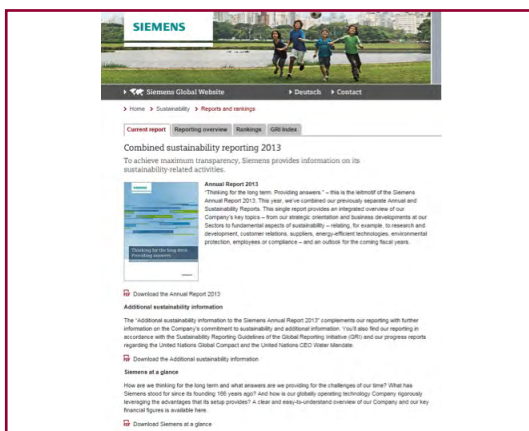
Cost: Free

Format: Pdf Document

http://www.siemens.co.uk/pool/about_us/sustainability/siemens_sustainability_uk_1_pager_2013.pdf

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Siemens Sustainability reports and documents



A range of reports, rankings and supporting documents for 2013

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R102, R103

Cost: Free

Format: Pdf downloads

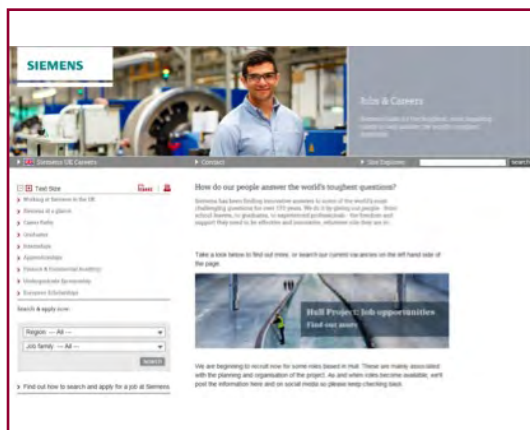
<http://www.siemens.com/sustainability/en/sustainability/reporting/current-report.htm>

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resourcesfeedback@ocr.org.uk

Siemens careers website



Live job adverts and careers information focused on the Siemens businesses in the UK

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Unit R102

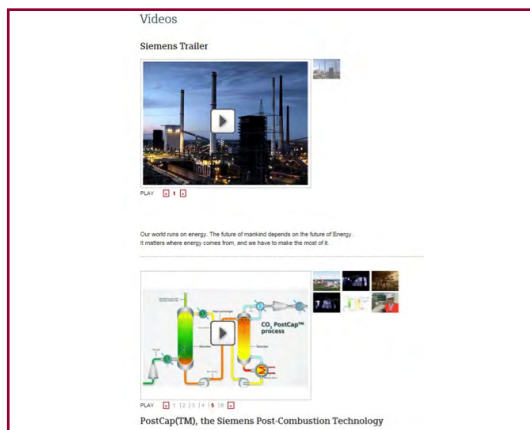
Cost: Free

Format: Website

<http://www.siemens.co.uk/careers/en/>

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Siemens Product and technology videos



A series of videos demonstrating energy related products and processes.
Videos are between 1 and 4 minutes in length each.

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R101, R102, R105, R106, R107, R109, R110, R111, R113, R116

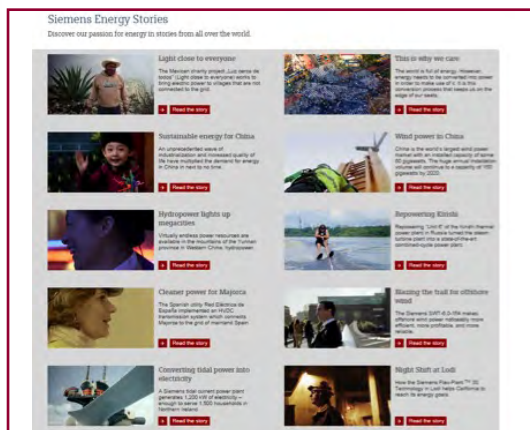
Cost: Free

Format: Online videos

<http://www.energy.siemens.com/br/en/energy-topics/videos/>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Siemens energy stories



A series of energy related case studies. Each case study has it's own web page and resources.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R102, R103, R105

Cost: Free

Format: Web sites with a range of different resources

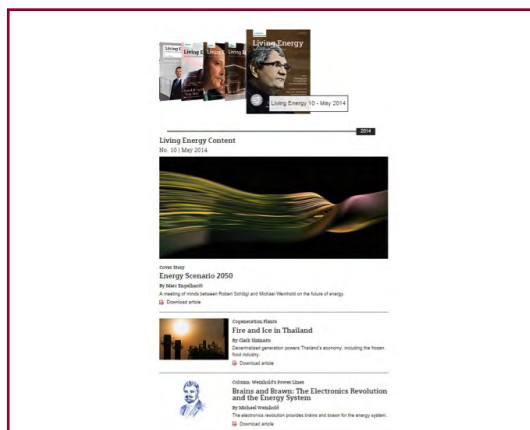
<http://www.energy.siemens.com/br/en/energy-topics/energy-stories/>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources

listed here. Please contact us at

resourcesfeedback@ocr.org.uk

Living Energy e-magazine



An electronic magazine giving access to back issues and the ability to download pdf versions of articles. Approximately 10 editions of the magazine available with 10 downloadable articles per edition.

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116

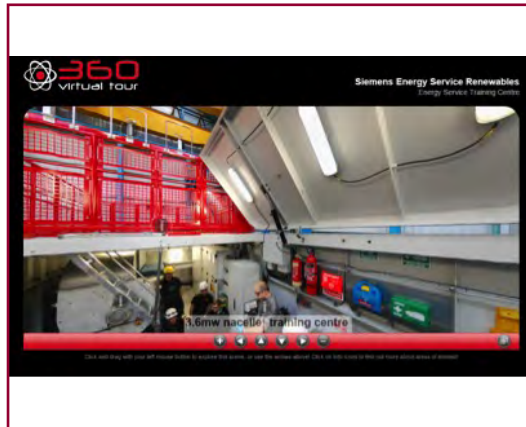
Cost: Free

Format: Web site with links to downloadable pdf articles, IOS and Android apps available

<http://www.energy.siemens.com/br/en/energy-topics/publications/living-energy/>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

360 virtual tours of the Siemens training facility



Two 360 degree virtual tours, one of the Siemens training centre in Newcastle and one of a 3.6 MW nacelle. Part of the Crown Estates sponsored U-Explore off shore wind resource. Links to both the resource and the 360 degree virtual tours provided. The wider resource has extensive offshore wind careers information.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R102, R103, R106, R109

Cost: Free

Format: Web based resource

<http://www.u-xplore.com/online/dsl/energyosw-2.7/ue.htm> for the full resource

<http://www.u-xplore.com/360/content/491/> for the virtual tours

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources

listed here. Please contact us at

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Energy related technical papers



Technical papers provided on a broad range of Siemens energy related products. Useful for research and images. Technical papers date back to 2004.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R105, R109, R113

Cost: Free

Format: Pdf format

<http://www.energy.siemens.com/br/en/energy-topics/publications/technical-papers/>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Power Engineering Guide



The Power Engineering Guide is a broad discipline guide for people involved in power engineering. Articles can be downloaded individually or the whole guide can be downloaded. There is a very useful glossary included in the guide, covering a range of engineering terms. The products and devices section contains a number of excellent examples of drawing techniques.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R101, R104, R105, R109, R113

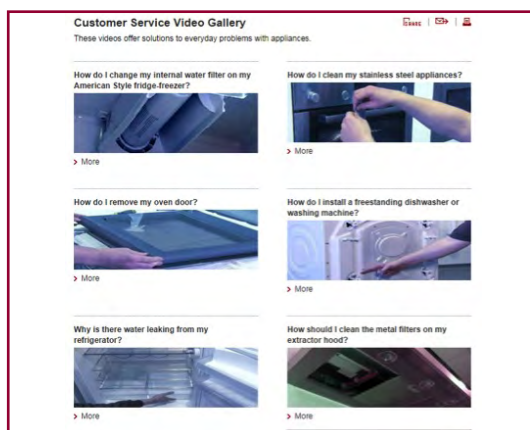
Cost: Free

Format: Pdf downloads

[http://www.energy.siemens.com/br/en/energy-topics/publications/
power-engineering-guide/](http://www.energy.siemens.com/br/en/energy-topics/publications/power-engineering-guide/)

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Customer Service Videos



A series of videos produced to inform Siemens products owners of the correct care, maintenance and repair procedures.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R104, R106, R107, R108, R111, R112

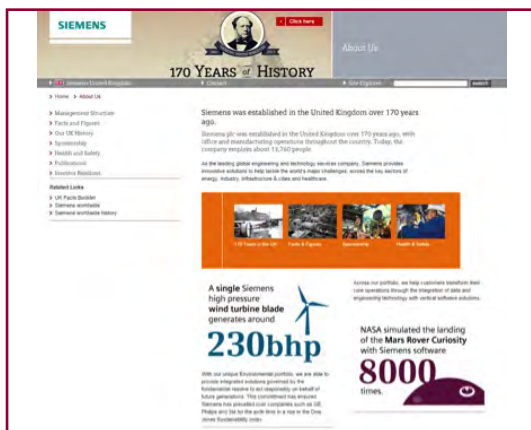
Cost: Free

Format: Online videos

<http://www.siemens-home.co.uk/features-and-benefits/customer-service-video-gallery.html>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

About Siemens



Company structure and performance with some history included. A range of web links giving high level information on Siemens.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Unit R102

Cost: Free

Format: Web site

http://www.siemens.co.uk/en/about_us/index.htm


If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Rail Solutions

Rail Solutions

Billions of pounds are being invested in major rail projects and Siemens is playing its part in making these a success. Siemens combines innovation with responsibility to deliver technologically advanced solutions ensuring journeys are punctual, comfortable and safe.


Commuter and Regional Trains



Today's commuter and regional services need to meet a host of different demands, depending on the region, operator and connections to other forms of transport. This challenge can only be met with intelligent, flexible train concepts – such as our Desiro family of vehicles.

[more](#)


Rail Automation



Speed, reliability and convenience are what determine the attractiveness of modern trains – and their economic success. By these criteria, the optimum line usage and thus rail automation becomes the central issue. With our diverse portfolio, Siemens Mobility guarantees reliable operation.

[more](#)


High Speed and Intercity



The Velaro family was developed for the global market: its ongoing evolution is based on our experience in design, production, service and maintenance in day-to-day international service. You can experience the resulting successes firsthand – by travelling with the Velaro in Spain, Russia or China. You're sure to be impressed by its technology, flexibility, comfort, and efficiency.

[more](#)

Railway Electrification



Siemens is your partner for tailor-made electrification solutions for mass transit. We implement solutions based on proven product solutions, thereby setting the standards. Your benefit: Efficient and reliable traction power supply and contact line systems.

[more](#)

A range of resources dedicated to the rail industry supported by Siemens. Resources include brochures, technical specifications videos and data sheets.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R103, R108, R109, R110, R111, R112

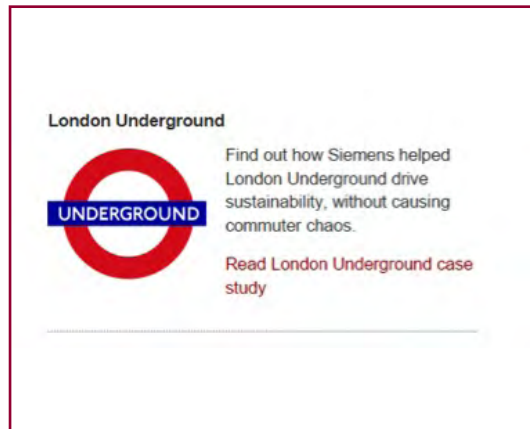
Cost: Free

Format: A wide variety of formats

http://w3.siemens.co.uk/MOBILITY/UK/EN/RAIL_SOLUTIONS/Pages/rail_solutions.aspx

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

London Underground



A case study demonstrating how Siemens have helped London Underground Optimise their energy usage. A 2 page case study. Other SMART meter case studies are available on the site.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Units R104, R112, R115

Cost: Free

Format: Pdf Download

[http://w3.siemens.co.uk/smartgrid/uk/en/Services/mcs/smb/Pages/
Case-Studies.aspx](http://w3.siemens.co.uk/smartgrid/uk/en/Services/mcs/smb/Pages/Case-Studies.aspx)

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk


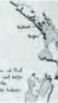
Blowing in the wind

Blowing in the wind
KS3/51&2 – science, technology and maths

Gather and use data to support conclusions relating to energy efficiency and arguments about noise pollution; use ideas to inform discussions about overall power supply systems and judge impact of design on environment and communities.

Topics

- Environment
- Electricity and energy
- Scientific enquiry
- Forces
- Wind turbines

- > Scheme of Work PDF
- > Supporting Lesson Plan PPT
- > Student Support Information PDF
- > Watch Video

1. How does the wind turbine work?
 2. How does the wind turbine work?
 3. How does the wind turbine work?
 4. How does the wind turbine work?
 5. How does the wind turbine work?
 6. How does the wind turbine work?
 7. How does the wind turbine work?
 8. How does the wind turbine work?
 9. How does the wind turbine work?
 10. How does the wind turbine work?

- Critically analyse and evaluate evidence from observations and experiments.
- Explore how the creative application of scientific ideas can bring about technological developments and consequent changes in the way people think and behave.
- Use of scientific methods and techniques to develop and test ideas and explanations.
- Assess risk and work safely in the laboratory, field and workplace.
- Plan and carry out practical and investigative activities, both individually and in groups.
- Use appropriate methods, including ICT, to communicate scientific information and contribute to presentations and discussions about scientific issues.

An investigation into the deployment of wind energy production.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Unit R101

Cost: Free

Format: Powerpoint, videos, downloadable pdf.

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks3.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk


A Case to Resolve

A Case to Resolve
KS4/S3 – Design and technology

Understand how systems are developed to meet certain requirements; applying ideas about waves such as light and x-rays to develop solutions to problems. Using logical reasoning to analyse the outcomes from a process.

Topics

- Electronics
- Systems and controls
- Processes



> Supporting Lesson Plan PPT

- Understand how systems are developed to meet certain requirements; applying ideas about waves such as light and x-rays to develop solutions to problems.
- Using logical reasoning to analyse the outcomes from a process.

An exercise to create an electronic system to correctly manage baggage at an airport.

Supports: OCR Cambridge Nationals in Engineering Level 1/2

Unit R116

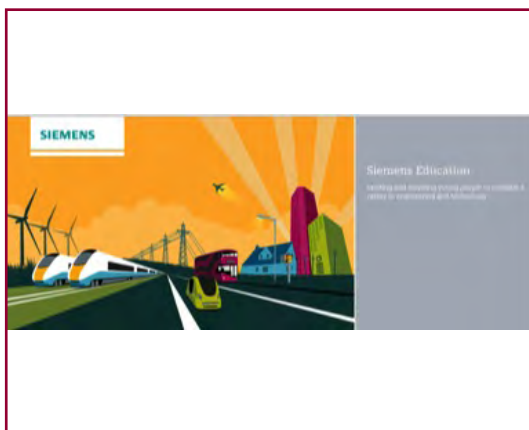
Cost: Free

Format: Powerpoint

<http://www.siemens.co.uk/education/en/teachers/teaching-resources/schemes-of-work-ks4.htm>

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

Project Approach Resource Bank



A selection of resources created by Siemens to support the project approach

Supports: OCR Cambridge Nationals in Engineering Level 1/2
Units R102, R105, R106, R107, R109, R110, R111, R112, R113, R114

Cost: Free

Format: Images, videos and pdf documents

www.siemens.co.uk/education

If you know of any resources that you think should appear here, or if you identify broken links please let us know. We would also like to hear from you with your feedback about your use of any of the resources listed here. Please contact us at resourcesfeedback@ocr.org.uk

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Contact us

Staff at the OCR Customer Contact Centre are available to take your call between 8am and 5.30pm, Monday to Friday.

We're always delighted to answer questions and give advice.

Telephone 02476 851509

Email cambridgenationals@ocr.org.uk



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