

# 'Between a Rock and a hard Place'

## Exploring hard rock quarry restoration options



QCA Geography at KS3 - Unit 14: Can the Earth cope? Sections 5, 6 and 7



### **'Between a Rock and a hard Place'**

In this unit, pupils explore options for the restoration of a hard rock quarry in the local area. Should it be used for landfill, a recycling plant, an industrial estate, a retail park, a leisure centre or turned over to nature? Can any of these uses be combined?

The unit offers opportunities for first-hand (questionnaire) research and the use of secondary sources (local press, radio and TV reports, internet); differentiation of 'facts' and 'opinion'; decision-making by groups of pupils and the production of a report which can be submitted to relevant local organisations.

Finally the unit highlights the relevance of studying resource issues in a local context.

## KS3 geography Unit 14 Can the earth cope?

### Teacher overview

**Title:** Caught between a rock and a hard place – quarry restoration options.

**QCA Unit link:** Geography: Unit 14, sections 5,6 and 7. A local study related to global issues.

**Main curriculum area:** Geography

**Subsidiary areas:** Science, Literacy, ICT, Numeracy, Citizenship

**Key themes:** Should restoration of a local quarry be carried out with landfill, recycling facilities, industry, agriculture, forestry, leisure facilities, retail development, industrial archaeology, nature conservation in mind? What will be the costs (financial social and environmental) and benefits of these options? Can any of them be combined? Is funding available? Are they sustainable?

### **Description / overview of the modified quarry-based unit:**

Following QCA Unit 14, sections 5, 6 and 7, the following options for restoration and development will be considered:

- Landfill
- Recycling facilities
- Industry
- Agriculture
- Forestry
- Leisure facilities
- Retail development
- Industrial archaeology
- Nature conservation
- Education
- A combination of compatible options within these

Initial questions will include:

- What is the employment situation in the local area?
- Will it be worsened when the quarry closes?
- What is the current access to the quarry? Are there road or rail links which could be used and/or improved?
- Utilities (power, water, sewage) - what is the current situation and would it support development?

And then for each option the following might be considered:

- What will the development cost (finance)?
- How will it affect the local community? Costs and benefits
  - provision of jobs
  - provision of facilities
  - effects on local small businesses
  - effects on infrastructure (transport, utilities)
  - effects on the local physical environment (noise & other pollution, aesthetic considerations)
  - health and safety implications
  - effects on wildlife - costs and benefits

The unit will present opportunities for:

- first-hand (questionnaire-based) and secondary (internet) research
- a decision-making process based on role-playing by pupils
- the production of written, audio or video presentations.(outcome - section 6).
- Citizenship (section 7): thinking about local issues, problems and events and making personal decisions about them.

This unit will encourage pupils to:

- Distinguish fact from opinion (section 5)
- Appreciate the validity (or otherwise) of a range of opinions
- Investigate waste disposal facilities (landfill and recycling), natural habitats, industry and industrial archaeology, leisure and shopping facilities in the area around the quarry by fieldwork surveys, (questionnaires) **or, if a questionnaire survey is not possible, role-play** and using secondary sources (internet, local and national press, media)
- consider the short-and long-term effects of a particular development strategy on the local environment and community
- Discover whether any of the options can be combined to mutual benefit
- Evaluate the sustainability of the chosen option(s) on a local and global scale
- Produce a development plan in consultation with local conservation bodies, leisure and business organisations

Links with other areas of the curriculum:

- Numeracy: collating and interpreting data from fieldwork surveys and secondary sources

- ICT: designing fieldwork recording and data collation sheets, graphing/charting data, newsletter layout, management plan design, photographic manipulation
- Literacy: production of persuasive newsletter(s), press articles, development and management plans.
- Art: poster production, photographic skills
- Science: wildlife conservation, interdependence
- Citizenship: consideration of the effects of actions on the local environment and community

#### Lesson overview

The quarry-based modified unit is envisaged as a combination of five 50-minute lessons and one half-day fieldwork outing to a local town (option 1) or, if a questionnaire survey is not possible six 50-minute lessons with the fieldwork outing replaced by role-play (option 2).

# Unit 14 Can the earth cope? Ecosystems, population and resources

## (Quarry-linked adapted unit for sections 5, 6 and 7). 'Caught between a rock and a hard place' – quarry restoration options

### About the adapted unit

This unit addresses sections 5, 6, and 7; global futures/resource issues. Pupils investigate the effects of restoration and development of a hard rock quarry and about resulting environmental issues/consequences.

Activities in this unit provide the opportunity for pupils to improve their literacy skills and think about important topical issues linked with citizenship.

This section of unit 14 is expected to occupy 4 50-minute lessons and one half-day fieldwork outing.

### Key aspects

#### Geographical enquiry and skills

Pupils will:

- ask geographical questions
- suggest investigation sequences
- collect, record and present evidence
- analyse evidence and draw conclusions
- appreciate values and attitudes
- use maps
- use secondary evidence
- draw maps, plans and graphs

#### Knowledge and understanding of places

Pupils will:

- locate places and environments
- explore interdependence and local citizenship

#### Knowledge and understanding of patterns and processes

Explored through:

- ecosystems
- resource issues

#### Knowledge and understanding of environmental change and sustainable development

Pupils will study:

- the sustainability of specific development proposals

### Expectations

#### At the end of this adapted unit

**most pupils will:** appreciate how resource issues can change places and the links and relationships that make places economically dependent on each other; appreciate that different values and attitudes result in different approaches in managing environments sustainably and that these may have different effects on people and places; suggest relevant questions and a sequence of investigation of ecosystems, population and resources; select and use effectively a range of skills and sources of evidence; present their findings about these issues in a coherent way and reach conclusions that are consistent with evidence

**some pupils will not have made so much progress and will:** recognise some of the links and relationships that make places economically dependent on each other; explain their own views and recognise how people try to manage environments sustainably; begin to suggest explanations for how human activities cause damage to the environment and recognise how people may try to improve the environment; suggest suitable geographical questions and sequences of investigation of ecosystems, population and resource issues; use a range of skills and secondary sources of evidence and communicate their findings using appropriate vocabulary

**some pupils will have progressed further and will:** understand that many factors, including people's values and attitudes, *eg about waste disposal*, may influence decisions about environments and that environments and the people who live there are affected by actions and events in other places; appreciate that human actions may have unintended consequences for the environment and that considerations of sustainable development may affect the planning and management of such environments in the future; identify geographical questions and sequences for investigation of ecosystems, population and resource issues; select and use accurately a wide range of skills and sources of evidence; evaluate critically sources of evidence for bias, present well-argued reports and begin to reach substantiated conclusions

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## Prior learning

It is helpful for these sections if pupils have:

- carried out research using a range of sources, *eg internet, CD-ROM, library*
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## Language for learning

Through the activities in these sections of the unit pupils will be able to understand, use and spell accurately words relating to:

- public opinion, *eg fact, opinion, nimbyism, probable and preferable futures (others according to case studies selected)*

Speaking and listening – through the activities pupils could:

- discuss and question what they are learning and how it is relevant in other contexts or when using variables

Reading – through the activities pupils could:

- distinguish facts from hypotheses/theories/opinions and how far information is complete and helpful

Writing – through the activities pupils could:

- link ideas and paragraphs into continuous text

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## Resources

Resources include:

- selection of resources covering a variety of resource issues, *eg textbooks, newspaper articles, internet information as text*
- any clip from BBC's *Question time*
- *Thinking through geography* (David Leat, Chris Kingston Publishing, 1988) (includes activities on 'Fact or opinion')

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## Future learning

This unit lays the foundation for the study of development in unit 16 'What is development?' in year 9, with its focus on distribution at a global scale and its consideration of topical issues. Such background information will also be useful for GCSE work.

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## Links

The activities in this unit link with:

- other geography units – unit 16 'What is development?'
- ICT – using a mapping package, using internet search engines
- citizenship – considering topical issues, justifying personal opinion
- science – work on food production, habitats, toxic materials in food chains

What are the effects on the environment of this resource issue?			
<ul style="list-style-type: none"> <li>to suggest appropriate sequences of investigation</li> <li>to collect, record and present evidence</li> <li>to use secondary sources of evidence</li> <li>to locate places on a world map</li> <li>to consider the effects on the environment of the use of a resource</li> </ul>	<ul style="list-style-type: none"> <li>Choose a case study about a topical resource issue which links with the global distributions already investigated, <i>eg waste disposal by landfill</i>. Provide pupils with a range of text-based resources, <i>eg newspaper articles, internet information</i>, expressing an opinion about the issue, <i>eg some in favour of and some against waste disposal by landfill</i>. Ask pupils to use highlighter pens (two colours) to identify the 'fact' and the 'opinion' statements within the texts relating to impact on the environment and planning/management. Ask pupils to identify the various interested groups referred to in the text or those who have generated the text, <i>eg scientists, politicians, environmentalists, etc</i>. Fill in a matrix recording the fact and opinion statements (vertical columns) against the relevant groups or individuals (horizontal rows).</li> <li>Ask pupils to plot all the 'resource issue' locations in the text extract on their world map.</li> <li>Conduct a class debriefing activity to consider the results of the above activities, <i>eg prevalence of fact or opinion, half-truths, nimbyism, etc</i>. Ask pupils to evaluate the approaches to and outcomes of their work.</li> </ul>	<ul style="list-style-type: none"> <li>accurately distinguish between fact and opinion</li> <li>accurately attribute views to specific groups and explain how and why they hold these views</li> <li>identify correctly on a world map locations around the world where a resource issue occurs</li> </ul>	<ul style="list-style-type: none"> <li>Language for learning: this activity provides pupils with the opportunity to distinguish fact from opinion.</li> </ul>
How can a resource be planned and managed?			
<ul style="list-style-type: none"> <li>to carry out a geographical enquiry into resource planning and management of a suitable issue using a completed teacher-modelled activity as a guide</li> </ul>	<ul style="list-style-type: none"> <li>Ask pupils to carry out their own resource enquiry using the teacher model provided. Provide pupils with suitable issues, <i>waste recycling and landfill, wind energy, water supply, pollution</i>. Present the outcome of the research as a series of questions and answers as in a <i>Question time</i> programme involving representatives from different 'interest' groups, about how to plan and manage a resource. Inform pupils that the dialogue should include fact and opinion and ask them to draw an appropriate map showing the locations investigated. Less able pupils may require more structured help, <i>eg resource pack</i>.</li> </ul>	<ul style="list-style-type: none"> <li>demonstrate understanding of the views of different groups through the question and answer tasks</li> <li>explain how and why people attempt to manage environments</li> </ul>	<ul style="list-style-type: none"> <li>The outcome might be written/audio or videotaped/performed.</li> </ul>

Why should we study resource issues?			
<ul style="list-style-type: none"> <li>to analyse and evaluate evidence about resource issues and draw and justify conclusions</li> <li>to appreciate how people's values and attitudes, including their own, affect contemporary issues such as sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Provide a large map of the local area and ask pupils to locate all the resource issue studies carried out by the class. Discuss which issues have already had an impact on their lives and which might affect them/their children in the future. How will it affect their lives, the lives of others, their world?</li> <li>Provide pupils with a cartoon which depicts a negative global future. Discuss this under the question <i>Probable futures?</i> with reference to the range of resource issues investigated. Then ask pupils to discuss the question <i>Preferable futures?</i> and ask them to design a cartoon to illustrate their own preferred future. Ask them to compare the 'two futures' cartoons in writing and then, after discussion, to write their own definition of sustainable development.</li> </ul>	<ul style="list-style-type: none"> <li>explain how human actions, values and attitudes can cause change</li> <li>identify and explain links and relationships that make places dependent on each other</li> <li>give an acceptable definition of the concept of sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Citizenship: this activity provides pupils with an opportunity to think about topical political, spiritual, moral, social and cultural issues, problems and events by analysing information and its sources, including ICT-based resources such as news and pressure group websites; to justify orally and in writing a personal opinion about such issues, problems or events.</li> </ul>



## **Lesson 1: setting the scene**

Introduce the topic by asking pupils what they know about the quarry in question and whether any of them have family members working there. If they do, what are the effects of the closure going to be? This might lead to pupils asking their relatives about the issue.

**NB Teachers will be aware of the need for sensitivity to the circumstance of particular pupils. Teachers may prefer to use a fictional family as an illustration.**

Present information - press cuttings, internet material, concerned with the quarry closure. Which of these are factual and which are opinions? Which if any pressure groups are involved?

Then present options for restoration and development:

- Landfill
- Recycling facilities
- Industry
- Agriculture
- Forestry
- Leisure facilities
- Retail development
- Industrial archaeology
- Nature conservation
- Education
- A combination of compatible options within these

## Lesson 1 resources

Computer network with internet access

Web sites:

- **MAGIC website** for information on local strategies and relevant maps  
[www.magic.gov.uk](http://www.magic.gov.uk)
- **Virtual Quarry website**

Press cuttings

Videos of local news

Posters concerning landfill and recycling

## Lesson 2: working groups

Split pupils into groups and assign one of the topics from lesson 1 to each group:

- Landfill
- Recycling facilities
- Industry
- Agriculture
- Forestry
- Leisure facilities
- Retail development
- Industrial archaeology
- Nature conservation
- Education
- A combination of compatible options within these

Each group has the following headings to work under, and to prepare a report for presentation (posters, ICT) at the beginning of lesson 3:

- Is there a need?
- Costs and benefits
  - financial - the teacher may need to provide this information
  - effects on the local environment - short term and long term
  - effects on the local community and businesses
  - effects on wildlife
- Infrastructure - transport and utilities (power, water, waste disposal)
- Sustainability

**Stress the importance of sustainability and the effects on wildlife and environment here - these might be the main theme of investigations.**

Then ask them to think about how they can investigate these topics and themes in relation to their group option. What resources will they need?

- Internet access to national and local information from Government, conservation and pressure groups
- local public opinion (questionnaires, local press, local radio and TV)

## Resources

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Web sites:

- **The Environment Agency** [www.environment-agency.gov.uk/yourenv/eff/resources/waste](http://www.environment-agency.gov.uk/yourenv/eff/resources/waste)
- **Local authority website** for information on landfill, recycling
- **MAGIC website** for information on local strategies and relevant maps [www.magic.gov.uk](http://www.magic.gov.uk)
- **local wildlife trust website** for information on conservation
- **Friends of the Earth website** for views on recycling and waste from an effective pressure group [www.foe.co.uk/learning/campaign/waste](http://www.foe.co.uk/learning/campaign/waste)
- **Virtual Quarry**
- **Eden Project** [www.edenproject.com](http://www.edenproject.com)
- **Successful industrial archaeology projects e.g.**
  - Amberley Working Museum (West Sussex) [www.amberleymuseum.co.uk](http://www.amberleymuseum.co.uk)
  - Llechwedd Slate Caverns (Blaenau Ffestiniog) [www.llechwedd-slate-caverns.co.uk](http://www.llechwedd-slate-caverns.co.uk)
- **DEFRA** [www.defra.gov.uk](http://www.defra.gov.uk)
- **Forest Enterprise** [www.forestry.gov.uk/forestry](http://www.forestry.gov.uk/forestry)
- **Woodland Trust** [www.woodland-trust.org.uk](http://www.woodland-trust.org.uk)

Press cuttings

Videos of local news

Posters concerning landfill and recycling

Poster paper, felt-tip pens

### Lesson 3:

Each working group summarises what they have been able to find out and what information they still need.

Finally prepare the pupils for the forthcoming fieldwork trip to a local town:

- how do we approach members of the public and business people?
  - choice of persons to approach - avoid harassed parents with children etc
  - how to approach them - introduce self (e.g. "good morning - I'm from Form X at Y School and we are doing a survey of public opinion about what should happen when Z quarry closes for our Geography work")
  - dress code and behaviour - courtesy, acceptance of unwillingness to respond
- what questions should we ask? keep them brief and simple e.g.
  - do you live locally? If so, where?
  - do you know anything about 'Z' quarry?
  - it is soon going to be closed. There are several proposals for restoring and developing it - show a clear list of the options - which of these do you think is the best option?
  - would you be prepared to say why?
  - are there any other options you would like to see considered?
- thank you for giving up your time and helping us

**N.B. everyone will be asking questions relevant to the whole class - an efficient way of gathering information - so it is important to keep good records.**

Pupils, then design and print questionnaire sheets, with teacher support where needed.

Ask pupils what they will need for the trip -

- suitable clothing
- clipboard & pencil, large polythene bag to protect clipboard if it rains
- a packed lunch (preferably with the minimum of non-recyclable waste).

Inform pupils of meeting time and place for departure (whether on foot or by public or private transport).

**Resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

### **Fieldwork outing – teacher preparation**

- All LEA and School procedures will have been followed before the visit;
  - permissions obtained
  - risk assessments carried out
  - letters and consent forms sent to parents and return monitored
- out of courtesy local shopkeepers are contacted and asked what is the maximum number of accompanied schoolchildren they will allow into their shop at one time (so that pupils will not go into shops which definitely don't want them or in groups which are too large and cause anxiety)
- where shopkeepers don't want children in their shops the teacher must make this clear
- police and shopping centre managers informed
- sufficient staff and/or CRB vetted parents recruited

## **The fieldwork outing**

On arrival in town set the framework of the day:

- who is in overall charge - mobile number given for emergency use
- who is in charge of which group of pupils
- location of public toilets
- meeting places and times - at intervals during the day and at the end of the fieldwork
- questionnaire sheets to be labelled with the group number names of those in the group
- behaviour and road safety rules

Before departure at the end of the day ask pupils

- were there any problems?
- do you have all your own personal gear?
- to give their questionnaire sheets to the teacher in charge



## Fieldwork outing resources

### Lists for each adult of

- behaviour and road safety rules
- pupils and adults
- medical details
- mobile numbers
- home contact details
- school contact details
- transport firm contact details

**Plus any other information which the school or LEA requires you to provide**

### Make sure that adults each carry

A basic first aid kit (follow school & LEA rules)

A spare hot drink (esp. hot chocolate, tea)

A spare bottle of drinking water

A spare sweater

### Worksheets for each adult outlining

- who is in overall charge - mobile number
- who is in charge of which group of pupils
- location of public toilets
- meeting places and times
- the aims and outline of the day

### Spare

- questionnaire sheets
- clipboards
- pencils
- large polythene bag to protect clipboards

xxx School:  
fieldwork  
questionnaire

Date:

Location:  
n:

Recorders'  
names

**Remember how  
to approach  
members of  
the public  
Remember to  
be polite**

**Questions**

1. Do you live  
locally?

Tally  
scores

Total

yes		
no		

2. If yes,  
where? (list of  
districts here)

a		
b		
c		
d		
e		
f		
g		

3. Do you know  
anything about  
'Z' quarry which

is soon going to be closed ?

yes		
no		

4. There are several proposals for restoring and developing it. Which of these do you think is the best option?

- a) Landfill
- b) Recycling facilities
- c) Industry
- d) Agriculture
- e) Forestry
- f) Leisure facilities
- g) Retail development
- h) Industrial archaeology
- i) Nature conservation
- j) Education


5. would you be prepared to say why?

6. are there  
any other  
options you  
would like to  
see  
considered?

(write answers  
on a separate  
sheet)

**Thankyou for  
giving up your  
time and  
helping us**

#### **Lesson 4 - collating information**

If a computer network is available the questionnaire sheets can be collated using a shared Excel spreadsheet. In this way the responses to the key question 'which of these do you think is the best option' can be scored.

Pupils can draw a pie chart of the scores.

During this lesson pupils also collate information relevant to their group option from the local press and from the internet and prepare their group presentation. Clear guidelines about participation need to be given.

#### **Lesson 4 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

# Group number:

1

Fieldwork  
questionnaire  
collation sheet  
Enter your  
totals in the  
correct box

## Questions

1. Do you live            Total  
locally?

yes	
no	

2. If yes,  
where? (list of  
districts here)

a	
b	
c	
d	
e	
f	
g	

3. Do you know  
anything about  
'Z' quarry which  
is soon going to  
be closed ?

yes	
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## Lesson 5 - bringing it all together

Each topic group gives a 5-minute (maximum) presentation about their option. They may conclude that it is impractical to proceed, but in any case should give reasoned arguments for their decision.

Guidelines for presentation:

- state aims - which topic they are presenting and what they set out to discover
- methods - how they investigated
- results - clearly presented (PowerPoint, OHP etc.)
  - primary data (fieldwork survey, one-to-one discussions with people directly involved)
  - secondary data (internet, press, radio, TV)
    - what is hard fact
    - what is opinion/pressure group propaganda
- interpretation of results
- conclusions - yes or no and why
- acknowledgements - to people questioned, anyone helping
- evaluation

The class now has enough information for an informed decision on the option(s) to follow: a vote is taken for each of the options.

A suggested voting procedure is 10 points for the first preference, 9 for the second, 8 for the third etc. with the highest score being the overall preference.

Finally the teacher leads a discussion session looking at the outcome of the investigation.

- What is the preferred option?
- Why is this best?
- Can it be combined with any of the other options?

Make sure that the pupils know that their presentations and the final class opinion will be presented to relevant bodies - e.g. Local Authority, Wildlife Trust, current quarry owners. Pupils are encouraged to write to all those who have provided help and support for the unit.

The relevance to the local community and to global issues (pollution of water supplies, waste production, climate change) is explored.

**Resources**

Laptop with page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

## **Lesson 1: setting the scene**

Introduce the topic by asking pupils what they know about the quarry in question and whether any of them have family members working there.

If they do, what are the effects of the closure going to be? This might lead to pupils asking their relatives about the issue.

**NB Teachers will be aware of the need for sensitivity to the circumstance of particular pupils. Teachers may prefer to use a fictional family as an illustration.**

Present information - press cuttings, internet material, concerned with the quarry closure. Which of these are factual and which are opinions? Which if any pressure groups are involved?

Then present a range of options for restoration and development:

- Landfill - waste disposal
- Industry - industrial estate with recycling facilities
- Restoration to either agricultural or forestry
- Leisure facilities including a motorcycle scrambling track
- Retail development with recycling facilities
- Nature conservation and education
- A combination of compatible options within these

**Lesson 1 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Press cuttings

Videos of local news

Posters concerning landfill and recycling

## **Lesson 2: working groups**

Split pupils into groups and assign one of the above topics to each group.

Each group has the following headings to work under, and to prepare a report for presentation (posters, ICT) at the beginning of lesson 3:

- Is there a need?
- Costs and benefits
  - financial - the teacher may need to provide this information
  - effects on the local environment - short term and long term
  - effects on the local community and businesses
  - effects on wildlife
- Infrastructure - transport and utilities (power, water, waste disposal)
- Sustainability

**Stress the importance of sustainability and the effects on wildlife and environment here - these might be the main theme of investigations.**

Then ask pupils to think about how they can investigate these topics and themes in relation to their group option. What resources will they need?

- Internet access to national and local information from Government, conservation and pressure groups
- local public opinion (local press, local radio and TV)

**Coursework: research via internet (local library if not available at home) or local media**

## **Lesson 2 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

## Resources

Computer network with internet access

Web sites:

- **The Environment Agency** [www.environment-agency.gov.uk/yourenv/eff/resources/waste](http://www.environment-agency.gov.uk/yourenv/eff/resources/waste)
- **Local authority website** for information on landfill, recycling
- **MAGIC website** for information on local strategies and relevant maps [www.magic.gov.uk](http://www.magic.gov.uk)
- **local wildlife trust website** for information on conservation
- **Friends of the Earth website** for views on recycling and waste from an effective pressure group [www.foe.co.uk/learning/campaign/waste](http://www.foe.co.uk/learning/campaign/waste)
- **Virtual Quarry**
- **Eden Project** [www.edenproject.com](http://www.edenproject.com)
- **Successful industrial archaeology projects** e.g.
  - Amberley Working Museum (West Sussex) [www.amberleymuseum.co.uk](http://www.amberleymuseum.co.uk)
  - Llechwedd Slate Caverns (Blaenau Ffestiniog) [www.llechwedd-slate-caverns.co.uk](http://www.llechwedd-slate-caverns.co.uk)
- **DEFRA** [www.defra.gov.uk](http://www.defra.gov.uk)
- Forest Enterprise [www.forestry.gov.uk/forestry](http://www.forestry.gov.uk/forestry)
- Woodland Trust [www.woodland-trust.org.uk](http://www.woodland-trust.org.uk)

Press cuttings

Videos of local news

Posters concerning landfill and recycling

### **Lesson 3:**

Each working group makes a short presentation summarising what they have been able to find out, separating fact from opinion, and what information they still need.

Now prepare pupils for the next lesson which is a role-playing session.

Tell them that they have to prepare a 5-minute presentation on behalf of their topic group.

Assign one pupil from each group to a new group with the role of local residents.

Each group's task is to convince the local residents theirs is the best researched, most sustainable option with the lowest environmental impact

Less able pupils may need help with setting up a framework.

Each member of the group must make a positive contribution to the role-play.



### **Lesson 3 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

#### **Lesson 4 - role-play and summary**

Each group of pupils now presents the case for their option. The local residents and members of other topic groups are entitled to ask relevant questions at the end of each presentation.

The teacher produces a brief (one page) agreed summary at the end of each presentation.

At the end of the presentations the teacher very briefly gives an overview of the options and the class votes for each in order of preference. A suggested voting procedure is 7 points for the first preference, 6 for the second, 5 for the third etc. with the highest score being the overall preference.

If there is a tie for top preference the remaining options may be discarded and a new vote taken. The voting can be entered into a spreadsheet and the results used to construct a suitable chart

#### **Lesson 4 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens

# Role play: voting summary

There are  
several  
proposals for  
restoration and  
development.

How many  
people voted for  
each option?

a) Landfill	<input type="text"/>
b) Recycling facilities	<input type="text"/>
c) Industry	<input type="text"/>
d) Agriculture	<input type="text"/>
e) Forestry	<input type="text"/>
f) Leisure facilities	<input type="text"/>
g) Retail development	<input type="text"/>
h) Industrial archaeology	<input type="text"/>
i) Nature conservation	<input type="text"/>
j) Education	<input type="text"/>

## Lessons 5 and 6 – producing a report

As a result of the role-playing exercise the class has now made an informed decision on the preferred option(s).

They can now produce a report – in the form of a newsletter or newspaper, and possibly web pages, for submission to the local authority, the local Wildlife Trust and the quarry operator.

The report should summarise what factual information has been discovered and what is based on opinion.

Encourage pupils to write to all those who have provided help and support for the unit.

Finally explore the relevance

- to the local community
- to global issues
  - pollution of water supplies
  - waste production
  - climate change

and stress the importance of the pupils' contribution as informed citizens.

## **Lessons 5&6 resources**

Computer network with internet access, page layout software, PowerPoint

Data projector/interactive whiteboard

Poster paper, felt-tip pens