



THE RENEWABLE WORLD

GEOGRAPHY

A scheme of work to take about seven lessons for Key Stage 3 Year 9 or Key Stage 4, with examples of student work

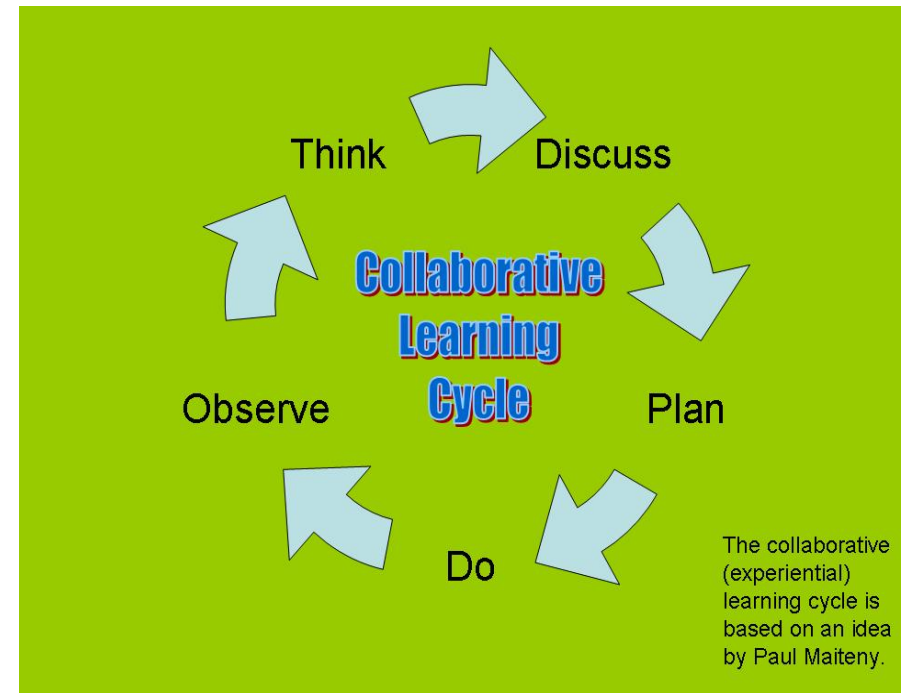
SYNOPSIS

The scheme of work offers an introduction to renewable crops from a geographical perspective. It encourages students to research a renewable crop of their own choice and to look critically at its impact on the connected people and places. Wherever possible, students are encouraged to include some 'real world' experiences into their research. Examples of this could include growing renewables, visiting farms with renewable crops, speaking to people with direct knowledge of renewable crops or using renewable crops to create a product.

The lesson plans are based around a participatory action research model called the 'collaborative learning cycle'.

For more information on the collaborative learning cycle see <http://www.geographyteachingtoday.org.uk/fieldwork/info/good-practice/inclusive-fieldwork/>.

The scheme encourages students to develop their own routes to learning whilst collaborating with others to learn together and ensure that each piece of work fits the overall theme.



INTRODUCTION

The use of renewable crops or non-food crops is not a new phenomenon but their perceived importance to address some of the world's current crises has never been more significant. Renewable crops are seen as a potential alternative to oil-based products including petrol and plastics and to reducing the carbon footprint of societies. However, the increase in production of renewables has led to concerns. Perhaps the most important concern is that land set aside for food production is being lost to maintain the technology- based lifestyles that we (in the West) have become accustomed to.

This scheme of work aims to let students look critically at a range of renewables from around the world each with their own particular place-based issues. The aim is for students to develop their own views based on a particular crop but then to view this in the wider context of their fellow students' research on other crops from other places.

Students will have a range of abilities and learning styles and as a result will choose approaches to learning that best suit their needs – using the collaborative learning cycle to reflect regularly on their choices. For example, some students may have literacy difficulties but with by choosing an appropriate methodology be able to access the research effectively. Their 'written' evidence may be supported by dictating it to a peer/ support teacher. Students from the case study are familiar with the collaborative learning cycle but other students may need some introduction.

ACTION RESEARCH

The traditional approach to research tends to assume that it will be text/interview based. The problem with this approach is that it prevents some student researchers who have strengths and needs not best suited to this approach from succeeding to develop their ideas fully. The collaborative learning cycle used above provides a framework of structured support. This aims firstly to let students think about and discuss their ideas. Then students are encouraged to develop them in ways best suited to them. It may be, for example, that teams are developed with a range of skill strengths or that a research report is produced in a non-text based approach (image based/ video based/ practical response). The important element here is that it is negotiated with the teacher and other students to get an agreed methodology and report style.

In my particular case study students were encouraged to find at least some practical/ real world learning from their research so that they could better understand the renewable crop. This research was supplemented with knowledge gained from secondary sources such as interviews and internet/ book research. By using the term 'action' research and including the word 'do' in the collaborative learning cycle students are encouraged to recognise that they can be active participants in their learning and not simply to rely on the learning of others. The aim is to negotiate research approaches that stimulate their interests and that they can carry out within the specific contexts of their school.

This 'active' approach may of course not suit some students or some renewable crop research and in these cases students may prefer equally valid approaches to literature research.

LESSON PLANS

	Strategy objectives	Learning objectives	Learning Activities - using Collaborative Learning Cycle as structure	Learning outcomes
1 2	Introduce renewables project making connections to existing knowledge and work in school grounds etc.	To make explicit the existing knowledge of renewables introducing new language. To develop products based on quick examples of how renewables can be used.	<ol style="list-style-type: none"> 1. Think about crops we grow at school 2. Discuss how they could be used to create resources 3. Plan how you will use a particular school crop and produce something by the end of the lesson 4. Do – go and make your plan happen 5. Observe what each other has created 6. Think about good/bad 7. Discuss results and then how other crops not grown in school may be used. 	<p>Overview of renewable crops.</p> <p>Practical understanding of uses of renewables.</p>
3	Research intro	To choose a renewable crop to research from a specific place. To introduce the process of research into renewables including discussions of the range of approaches that may be taken to research.	<ol style="list-style-type: none"> 1. Think about lessons 1 and 2 and the lessons learned. 2. Discuss a range of crops grown around the world for non-food purposes. Teacher to add some examples here. Choose a crop each from an agreed place to research 3. Plan research individually or with partner/team 4. Do the research – use available resources (e.g. internet, teachers, books, school grounds etc) 5. Observe work produced and think about/discuss results so far. 	<p>Knowledge of the relationship of renewable crops to places.</p> <p>Awareness of research methodologies.</p>
4	Research development	To critically evaluate learning so far both in relation to chosen renewable crop and research methodology.	<ol style="list-style-type: none"> 1. Think about the first research session 2. Discuss the good/bad with specific renewables and with chosen research methodologies 3. Plan next research session 4. Do next research session – this may continue from previous lesson or be a new approach such as from internet to a practical response. Be aware that evidence will be needed. Consider how to collect this – pc doc/ photos/ drawings/ notes etc 5. Observe results. 	<p>An early critical understanding of a specific renewable crop and its impact on a particular place and the connected people.</p> <p>An understanding of the need to regularly reflect on the research methodology and change it if necessary</p>

	Strategy objectives	Learning objectives	Learning Activities - using Collaborative Learning Cycle as structure	Learning outcomes
5	Research completion (may need/want more than one more lesson here)	To consider what remains to be done to provide valuable results from the research and then to gather this evidence.	<ol style="list-style-type: none"> 1. Think about pulling all the research together and finishing the collating part 2. Discuss how you are going to finish the research element of the task 3. Plan the final stages of research 4. Do the final stages of research 5. Observe the collected body of evidence. 	<p>A good critical knowledge of a specific renewable crop</p> <p>An awareness of a range of other renewable crops and their impacts on people and places</p>
6 7	Report writing	To produce a research report thinking specifically about the approach and the support required (and whether this is available).	<ol style="list-style-type: none"> 1. Think about your own research 2. Discuss research with peers and teacher – possibly in small groups first and then as a larger group 3. Make a plan as to how a report of your research will be produced. Think about your own needs here 4. Do - Write/produce report with whatever help is required 5. Observe and evaluate learning from each report and give to teacher to put in a whole class book/ on a website/ on a notice-board etc. 	<p>An understanding that reports are written for a purpose and a consideration that the strengths and needs of the report writer are crucial.</p> <p>A body of work based on renewable crops from different places around the world.</p>

ADDITIONAL RESOURCES

STUDENT PROJECTS

This is available in Teachers' Resources as a separate file.

CURRICULUM LINKS

The fact that the tasks are chosen by the students means that specific links to subjects cannot be made until the approaches have been chosen. From my case study, however, a range of links (other than geography) was made which serves to act as an example of what may be possible:

Hemp

Citizenship, English, History, Literacy, Science, Technology

Bananas

Art, English, Food technology, Literacy

Bamboo

Design technology, English, Literacy

Sugar cane

Citizenship, English, Literacy, Science