



Greener Greens?

NAME OF THE ACTIVITY:

GREENER GREENS?

QUESTION or PROBLEM THIS ACTIVITY AIMS TO TACKLE

Do the food choices we make have an impact our planet's health?

DESCRIPTION

"Greener Greens? - Are the food choices we make sustainable?" is a collection of student inquiry-based research projects that are designed to question ethical and sustainability issues surrounding global food production and consumption, and possible resulting impacts on climate change and biodiversity. It challenges students' assumptions that the all-year-round availability of non-seasonal fruits and vegetables is necessary, or moral, through critical analyses of data, and personal case studies. Beyond this, the question of whether political or economic agreements between countries to supply and receive goods that can be sourced locally to each other, is questioned. The role of science in society on a global and personal scale is used to evaluate commercial and media-based arguments on sustainability. Tasks are designed and undertaken by first year students, (13 years of age). The results are expected to be an increased awareness of their role and impact within the biosphere

URL TO FIND MORE INFORMATION

http://www.confeyscience.com/greener_greens.html

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1. DETAILED INFORMATION OF THE ACCELERATOR

NAME	NAME	
KEYWORDS	Sustainability, food production, biodiversity, climate change, global economics	
LANGUAGE	English	
LEARNING OBJECTIVES	<p>The student:</p> <ul style="list-style-type: none"> • has a developing awareness of the origins and impacts of social, economic, and environmental aspects of the world around her/him • develops the awareness, knowledge, skills, values and motivation to live sustainably • values what it means to be an active citizen, with responsibilities in local and wider contexts • understands the importance of food and diet in making healthy lifestyle choices • recognizes the potential uses of mathematics and ICT in all areas of learning • values the role and contribution of science and technology to society, and their personal, social and global importance • explores options and alternatives by engaging in scientific enquiry where she/he generates and seeks answers to their own questions and evaluates the process to determine the optimum outcome • conducts research relevant to a scientific issue, evaluates different sources of information including secondary data, understanding that a source may lack detail or show bias • organizes and communicates her/his research findings in a way fit for purpose and audience, using relevant scientific terminology and representations • evaluates media-based arguments concerning science and technology • understands how humans influence the Earth's climate, evaluate the effects of climate change and initiatives that attempt to address those effects • evaluates how humans can successfully conserve ecological biodiversity and contribute to global food production while appreciating the benefits that people obtain from ecosystems • adopts a systems-thinking approach to understand complex processes 	
AGE OF STUDENTS INVOLVED	12 to 13. However the activities could be adapted for use by older or younger students.	
SUBJECTS DOMAIN	<p>This project supports learning across the domains of:</p> <ul style="list-style-type: none"> • Science • Mathematics • Geography • Home Economics • English • ICT • Politics and society 	
AVAILABLE PARTNERSHIP OPPORTUNITIES	<p>Families</p> <p>Supermarkets</p> <p>University</p> <p>Education centres</p>	<p>Family choices about food consumption drive local economics. By first discussing how the availability of food types has changed over the years with older relatives and friends of the family a context for the project is set. Comparisons of town and country living, and experiences from other countries, provides a rich basis for discussion and brings learning out of the classroom. It is hoped that an appreciation of the carbon footprint of fruit and vegetables by students will impact the purchasing behaviour of their parents by encouraging the support of locally sourced produce.</p> <p>Student discussions with supermarket managers, or purchasers, are encouraged to drive retail of locally sourced produce</p> <p>Dublin City University</p> <p>Sonairte is a local ecological education centre that promotes sustainable organic farming and provides outreach activities. Causey Farm is another venue that also provides students with a number of opportunities to integrate subject domains literally in the field.</p>
COUNTRY IN WHICH THE ACTIVITY HAS BEEN DESIGNED OR CARRIED OUT	Ireland; but could be conducted in any country	
RESOURCES NEEDED	Very little... it relies on food packaging that show the countries of origin which are collected from the students' recycle bins and interviews with relatives and friends. In addition, internet access provides the opportunities for students to search for, and evaluate, information about global food production, sustainable living, increased dependence on monoculture, reductions in biodiversity and the effects of greenhouse gasses on climate change.	
PUBLICLY AVAILABLE	Yes	
OTHERS/NOTES	This activity was triggered by the introduction of seasonal fruit in the school canteen (bananas and pineapples) and a realization that students had no idea about seasonality.	

2. PLANNING OF THE ACCELERATOR:

# Session	Duration	Description	Resources needed	Location
1	40m	<ul style="list-style-type: none"> Teacher asks students about their favourite fruits or vegetables Teacher asks whether they are in season or not, and if not, where they might have come from Students identify possible countries of origin on an atlas and features of that location in terms of climate or season that might support their choice. Teacher generates a discussion about how availability of different foods might have changed over the years Students establish a method for collecting data about changes, (by interviewing older relatives or friends of the family- there is the possibility for a community link with local old people's homes), and countries of origin (by collecting food labels off wrappings) 	<ul style="list-style-type: none"> Computers with Internet Atlases 	In the classroom
2	40m	<ul style="list-style-type: none"> Students conduct a class discussion based on the findings of their interviews (they are frequently shocked by the differences that are relayed and fascinated by variations from town and country life-styles and those of individuals from other countries) Teacher initiates an inquiry activity where students search for information about what is 'in season' at different times of the year for their country Food labels are collected from students 	<ul style="list-style-type: none"> Computers with internet 	In the classroom
3	80m	<ul style="list-style-type: none"> Students watch a short documentary on Quinoa produced by Channel 4 news and are then prompted to find more information about the topics raised (this raises issues of bias and reliability of data as many of the claims made in the documentary cannot be substantiated) Teacher asks the students to discover whether the same is true for palm oil production (this leads to discussions about monoculture and loss of biodiversity) Students present their initial findings to the class and then suggest possible research projects that they will undertake in groups Food labels are collected from students 	<ul style="list-style-type: none"> Computers with internet Data projector Poster paper 	In the classroom
4	80m	<ul style="list-style-type: none"> Students conduct their research and prepare a presentation of their findings in a variety of formats Food labels are collected from students 		In the classroom
5	40m	<ul style="list-style-type: none"> Students present to their peers 		In the classroom
6	40m	<ul style="list-style-type: none"> Students map produce to country of origin on personal or wall atlases (this usually raises issues of produce that could be sourced locally having been imported from other countries) If not identified by students the teacher raises the issue of foreign imports of items that can be locally grown and questions whether it makes any difference where the food comes from (this always raises the carbon emissions from transportation) Students decide what information they need to collect that will inform them of the carbon footprint of transportation (i.e. name, mass, country of origin) and how they will present their results 	<ul style="list-style-type: none"> Computers with Internet Food labels 	In the classroom
7	80m	<ul style="list-style-type: none"> Students continue to collate data and calculate distance travelled by taking the capital city of the country of origin and their location and the website https://www.freemaptools.com/how-far-is-it-between.htm Teacher provides a simple spreadsheet that allows students to calculate the volume and mass of CO₂ produced by inputting distance travelled and mass Students use milk cartons to visualize 1litre and extrapolate the dimensions to model the carbon dioxide emissions for a variety of items 	<ul style="list-style-type: none"> Computers with Internet Food labels 	In the classroom
8	80m	<ul style="list-style-type: none"> Students finish their display on atlases to include additional data and prepare short presentations to be given to school colleagues and local supermarket managers/purchasers 	<ul style="list-style-type: none"> Presentation materials 	In the classroom
9	40m	<ul style="list-style-type: none"> Students make their presentations 	<ul style="list-style-type: none"> Presentation materials 	In the community

3. OTHER SUGGESTIONS

# Activity	Duration	Description	Resources needed	Location
1	All day	<ul style="list-style-type: none">• Students visit a local farm/ education centre and learn about crop production		Education centre
2	10m	<ul style="list-style-type: none">• Students attempt to grow their own fruits or vegetables (once planted, these need to be regularly monitored)	<ul style="list-style-type: none">• Seeds/ compost/flat pots	In the classroom
3	3 weeks	<ul style="list-style-type: none">• Students incubate hens eggs in the classroom, turning them regularly and then watch their development for a week post hatching	<ul style="list-style-type: none">• Incubator/ fertile hens eggs	In the classroom