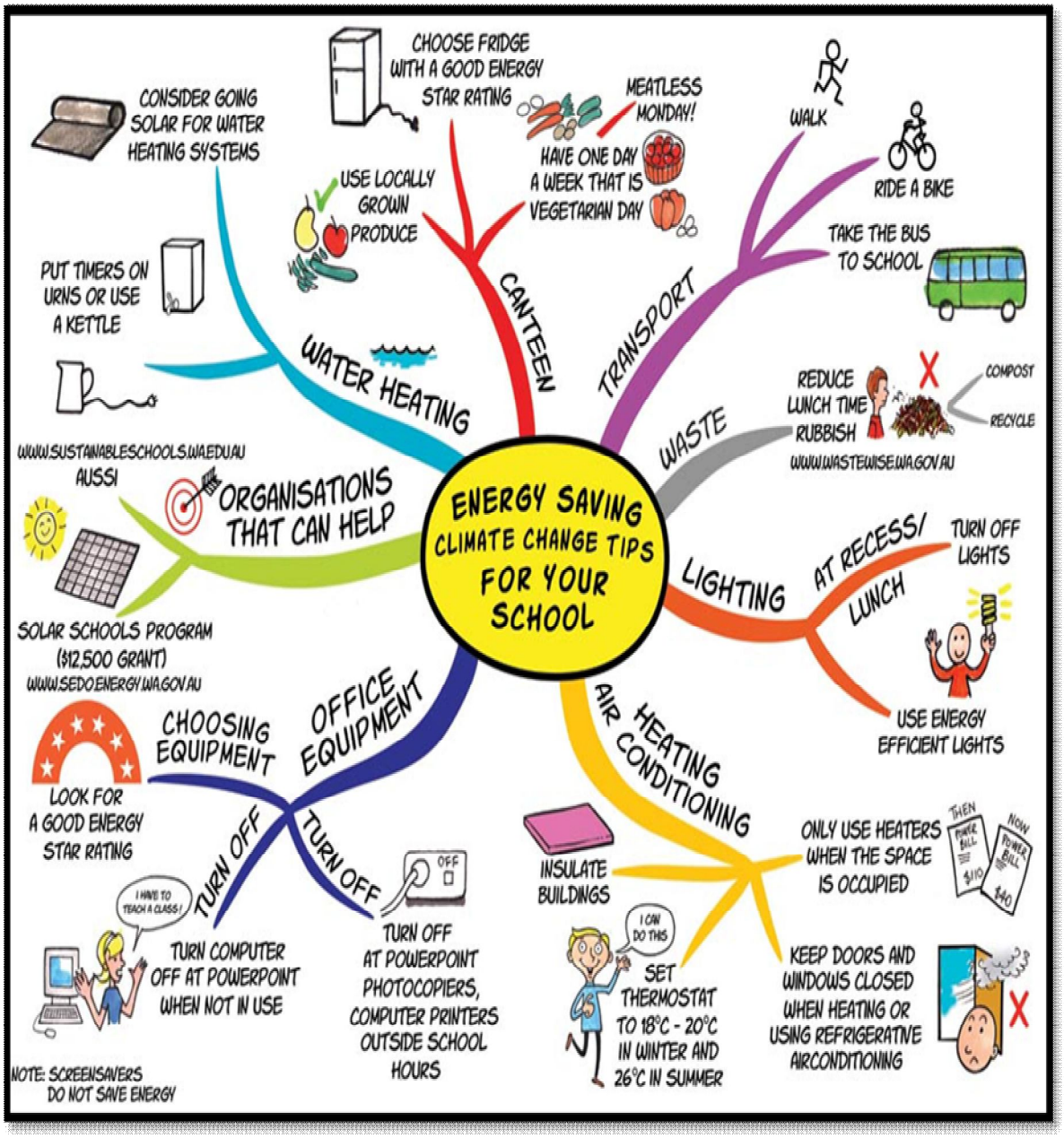
BAL BHARATI PUBLIC SCHOOL, DWARKA



Exploring energy crisis – TWENTY – TWENTY collaborative project with Ridings High (Winterbourne) school UK

BAL BHARATI PUBLIC SCHOOL, DWARKA

Activity number

Activity Cover Sheet

Please complete a separate sheet for each activity

School Name:	**BAL BHARATI PUBLIC SCHOOL, SECTOR 12, DWARKA, NEW DELHI**
Title of activity:	**Exploring energy crisis – TWENTY –TWENTY collaborative project with Ridings High(Winterbourne) school UK**
Teacher responsible:	**Ms S.Gandhi(Principal), Ms S.Kakkar (HM), Ms Arti Singh, Mr Rob Ford, Ms Shelley Swift**
Other staff involved:	**Ms Gayatri , Ms Nupur Dubey, Ms Deepika Dutt**
Subjects involved:	**Science, Geography, Political Science, History, English, ICT**
Brief details of the aim, content and outcomes of the activity	 **"We can create a more sustainable, cleaner and safer world by making wiser energy choices".** **When Emily Connors and Katie Coleborn gap year students requested the permission to come and teach in Bal Bharati Public School Dwarka, teachers coordinators in both the schools Ms Sandhya Kakkar and Mr Rob Ford thought this was an excellent opportunity to explore energy perceptions of pupils in both the schools through a projects named Twenty – Twenty. Students in both the schools were given a set of 20 questions to gauge the understanding about energy consumption pattern and impact of energy crisis.**

Students sitting across tables were amazed at the gap in perception across continents. Some of the starling findings of the project were – the main consumer of electricity in Indian homes were cooling system as compared to UK homes were the heating system consumed maximum power, although when they compared the number of hours for electricity used it nearly amounted to same. While comparing the nature of food consumption Indian pupils felt that their food habits were more energy intensive as compared to those of their peers from UK.

The discussions lead to quest for solutions. The Debate – "Should we resort to nuclear power to solve the energy crisis? "Opened up plethora of options as well opinions. It was interesting to see if one group saw nuclear option as a threatening one then the other group saw it as panacea to the host energy conflicts and issues.

The discussion was found to so stimulating and thought provoking that it became the subject of debate at the interschool level where participants gave it an entirely new dimension with their passionate appeals to for and against the motion

The greatest outcome of the exercise was engagement and involvement of students and staff to develop a bigger and better perspective about the issue.

Summarizing in the words of Mr Rob Ford. Head of International Dept/IB at Ridings High School.

"It has been a life changing experience for Emily and Katie and they have a real passion for India now and a bigger and better perspectives about life and world"

The girls Aishwarya and Drishti Sagar of BBPS Dwarka who hosted Emily and Katie learnt something valuable for a life time.

"During these days we developed a long lasting relation with the two girls Emily and Katie, where we came to know a lot about each other. We comprehended countless things about the lifestyle of peers in the UK .We came to know that in UK from the age of thirteen only children start doing part-time jobs which make them more confident and independent. Not only this but also compared about the facilities provided to the students in the school.

BAL BHARATI PUBLIC SCHOOL, DWARKA

	In short, this experience of intermingling with two girls from the UK was very enjoyable and very useful, whose results are nothing but a ongoing friendship which are sweet and lingering memories that we all would cherish throughout our life.
Countries explored	**UK and India**
Link school(s)	**Winterbourne (Ridings)High School UK**
Other sources of information	**Internet, library books and direct interaction with pupils of link school**
Number of students involved in this activity:	**200 pupils from class 10, 11 and pupils of Ridings High School UK**
Age range of students involved:	**14-16 yrs**
Type of Evidence included:	**1. Questionnaire** **2 .Emails** **3. Debates** **4 Report**

Sandhya Kakkar
Headmistess
Bal Bharati Public School
Dwarka
New Delhi

YAHOO! MAIL Classic

FeedBack Report

This is what Drishti Sagar of class 10 C one of the participants in the project had to say...
Twenty – twenty -THE ENERGY Project. The school had initiated a project Twenty – Twenty "based on the comparison of energy consumption patterns in India and UK in collaboration with Ridings High School UK

The program constituted three main criteria:-

First and foremost being the worksheet regarding electricity bill propagation in our homes. The worksheet comprised of various appliances that we use in our homes, their number and the duration for which they are run. It was an arduous job as it involved various calculations.

Secondly, we also had a descriptive and noteworthy session where we drew out inferences between the energy consumption pattern in India and UK .It was found that because of the geographical area and cold climate, there was a higher energy consumption of central heating systems that worked for around 24hrs. a day and continuously for 7-8 months!

We also found that most of the energy in UK is generated from Tidal Energy whereas in India we have it from Thermal Power Stations .

Interestingly, we also came to know that in UK there are no power cuts whereas we have it for around 1-2hrs. during winters and 3-4hrs. during summers for a typical person living in urban areas.

Just as we use CFLs in India they use low energy bulbs and very less tube lights.

Last but not the lest we conducted a debate on whether 'Nuclear Energy Is A Viable Form Of Energy?' Emily and Katie were quite impressed by the depth opinions of different students who took part in the debate.

Quite a lot of students were in favour of the Nuclear Deal as it is the only option left after electricity generation from hydro energy, tidal energy, solar energy etc.

However, the greatest threat in using nuclear energy is the production of radio-active wastes and lack of dumping grounds for toxic substances.

The discussion was quite informative for them as well as for us as it influenced the mutual learning and understanding between both the nations.

DRISHTI SAGAR
X-B

BAL BHARATI PUBLIC SCHOOL, DWARKA

From: sandhya kakkar [mailto: sandhya_kakkar@yahoo.com]
Sent: 26 September 2009 12:34
To: Shelley Swift
Subject: RE: International Learning opportunity

Thanks Shelly
I m attaching with this mail 20-20 energy project work sheet which looks at energy consumption pattern of students in two collaborating schools and encourages pupils to analyse answers and draw their conclusions .I hope pupils in your class will enjoy learnng through first hand experience .It is suitable for students between 12 to 15 yrs of age and we expect to give reults by end of october and put them on e languages website .

Looking forwrd to hearing from you.
Sandhya Kakkar
Headmistess
Bal Bharati Public School
Dwarka Sector 12
New Delhi 110075
India

www.bbpsdwarka.org

RE: International Learning opportunity
Monday, September 28, 2009 4:19 PM
From:"Shelley Swift" <Shelley.Swift@trfwia.org.uk>
To:"sandhya kakkar" sandhya_kakkar@yahoo.com

Hi Sandhya,
This is great! I think I will do this with my Year 8 class aged 12. Does that sound ok to you?

I look forward to hearing from you,
Shelley

Emails to Winterbourne High School

Thanks Rob

It is always a great feeling to hear from you .Your prompt response does wonders to my endeavours for collaboration most of which dry up half way but certainly not in your case .Thanks again

I m in the midst of frenzy of projects and activities so please don't be surprised to find a new one in each mail as I have put them all in my action plan for the International School award .

the one I have kept specifically with your school is regarding "exploring the energy scenario in UK and India which was initiated by shelly Swift .I have called this "twenty - twenty project " where pupils from both the school will pose each other 20 questions to find the status and pattern of energy consumption and the problems faced in their country .

They will share their Q/A and follow it up with class discussion to make comparison .

This will be followed by a debate on use of nuclear option as solution for existing energy crisis the world over .We can facilitate this debate either through videoconferencing or through you tube uploads .

Please let me know what do you think of this for 14-16 yrs old pupils ?

I will look forward to hearing from you and Shelly in this regard.

With best wishes

BAL BHARATI PUBLIC SCHOOL, DWARKA

EVENTS FOR 29.04.09

(I) ENGLISH DEBATE

Date: 29-04-09 Day: Wednesday Class: IX, X
No of participants: 2 + 1 interjector

Topic: 'Nuclear Energy is the most reliable option to solve current energy crisis'

Rules:

- Each school will send one speaker for and the other to speak against the motion
- Time duration for each participant is 3 minutes.
- No gestures are allowed.
- Paper reading is not permitted.
- Language should not be offensive and use of slang is prohibited.
- Marks will be awarded for effective

5.	Face to Face (आमने - सामने)	1. Anmol 2. Saakshi	VI
6.	International Food Fiesta	1. Hemanshi 2. Shweta	VIII
7.	Montage Making	1. 2.	
8.	Greeting the World	1. Vardaan 2. Akanshika	I

Accompanying teacher: (Prerana Chandra)

Signature

Debates

Sameer

Nuclear power was the energy of Tomorrowland — in the 1950s it was going to make electricity too cheap to meter — until it came to a standstill over the past couple decades. It's now poised to make a dramatic comeback. At least, that's what many politicians and the media say. As the Senate this week debated the Warner-Lieberman carbon cap-and-trade bill, which would put a federal limit on greenhouse gas emissions, many doubtful senators said they wouldn't vote for the measure unless massive subsidies for nuclear were included. (The bill was shelved.) Even some veteran greens who were once dead set against atomic power, like Greenpeace co-founder Patrick Moore, now see nukes as the only way to save civilization from climate change. And last month *Wired* magazine urged environmentalists to "Go Nuclear," claiming, "there's no question that nuclear power is the most climate-friendly industrial-scale energy source.

More Going Green

That's debatable, to say the least. There's no question that a nuclear plant, once it's up and running, produces comparatively little carbon dioxide — a British government report last year found that a nuclear plant emits just 2% to 6% of the CO_2 per kilowatt-hour as natural gas, the cleanest fossil fuel — but nuclear energy still seems like the power of yesterday. After a burst of construction between the 1950s and late 1970s, a new nuclear power plant hasn't come on line in the U.S. since 1996, and some nations like Germany are looking to phase out existing atomic plants. That reverse is chiefly due to safety concerns — the lingering Chernobyl fears of nuclear meltdown, or the fact that we still have yet to devise a long-term method for the disposal of atomic waste.

But to Amory Lovins — a veteran energy expert and chairman of the Rocky Mountain Institute — there's a much better green reason to be against nuclear power: economics. Lovins, an environmentalist who is unusually comfortable with numbers, argues in a report released last week that a massive new push for nuclear power doesn't make dollars or cents. In his study, titled "The Nuclear Illusion," he points out that while the red-hot renewable industry — including wind and solar — last year attracted $71 billion in private investment, the nuclear industry attracted nothing. "Wall Street has spoken — nuclear power isn't worth it," he says.

More nuclear subsidies, which many on Capitol Hill are pushing for, won't do the trick either. Lovins notes that the U.S. nuclear industry has received $100 billion in government subsidies over the past half-century, and that federal subsidies now worth up to $13 billion a plant — roughly how much it now costs to build one — still haven't encouraged private industry to back

the atomic revival. At the same time, the price of building a plant — all that concrete a has risen dramatically in recent years, while the nuclear workforce has aged and shrunk. supporters like Moore who argue that atomic plants are much cheaper than renewables tend forget the sky-high capital costs, not to mention the huge liability risk of an accident — the insurance industry won't cover a nuclear plant, so it's up to government to do so. Conservatives like Republican presidential candidate John McCain tend to promote nuclear power because they don't think carbon-free alternatives like wind or solar could be scaled up sufficiently to meet rising power demand, but McCain's idea of a crash construction program to build hundreds of new nuclear plants in near future seems just as unrealistic.

If not nuclear, then which carbon-free energy source will power our post–climate change future? Lovins favors a diverse mix of renewables, integrated to compensate for individual faults — solar for when the wind doesn't blow, and vice versa. He also wants to focus on energy efficiency and micropower, shifting away from the old model of the massive central plant sending out electricity — i.e., your local nuke — in favor of smaller plants, even residence-scale ones, built close to population centers. Reducing carbon emissions, he argues, will be cheaper and safer if we turn away from nuclear in favor of alternatives. "The bottom line is that nuclear buys two to 10 times less climate protection than its competitors," says Lovins.

Certainly Lovins is right to argue that the nuclear industry can't compete on the free market on its own terms — or even without the billions in subsidies it already receives. But renewables also receive their share of government largesse — the booming global solar industry wouldn't be anywhere near as hot without a generous German tariff. New research and development might cut atomic costs, just as we hope will happen for alternatives. And the sheer size of the problem facing the global energy industry demands that no solution can be dismissed out of hand. On June 6 the International Energy Agency released a study calling for $45 trillion in energy investments between now and 2050, including both a vast expansion in wind power and the struction of some 1,400 new nuclear plants. The conservatives are wrong to argue that deserves special treatment — it should live and die on the private market like any other — but we may not be done with the atom yet.

BAL BHARATI PUBLIC SCHOOL, DWARKA

NUCLEAR ENERGY : A VIABLE SOURCE OF ENERGY

* One of the key reasons for of increasing the life of nuclear reactors is the fact that it is possible to solve the problem of air pollution since this doesn't release green house gases.

* Permanent disposal of radioactive waste is being dealt in a more rational way now

* Earth has a limited supply of coal and oil. Nuclear power plants could still produce electrity even when coal and oil become scarce.

* Nuclear power plants need less fuel than those which use fossil fuels

for example : 1 tons (1,000 kg) of uranium produces more energy than several thousand tonnes of coal and barrels of oil.

* Coal and oil burning plants pollute the air, on the other hand nuclear power plants don't release contaminates in environment

* As far as expenses are concerned, developed countries should co-operate with developing nations and keep aside self – interests
e.g. - 123 nuke deal

* Scientists working in these plants are given security equipments and thus radiations don't effect them.

- Pranav Verma [IX - C]

Nuclear Energy Is A Viable Source Of Energy

Favour

The word 'nuclear energy' always inspires 'awe' and sometimes 'fear' because we always associate terms like 'nukes' and 'radiation' when we talk about something nuclear. But it is not as ominous as it sounds and in fact for some countries it is a major source of energy. 75% of energy in France is generated by nuclear power and even in the United states, 19% of electricity is derived from nuclear energy.

The nuclear option should be retained precisely because it is an important carbon - free source of power, but the prospects for nuclear energy as an option are limited
- high relative costs, perceived adverse safety
- environmental and health effects
- potential security risks stemming from proliferation
- unresolved challenges in long - term management of nuclear wastes.

BAL BHARATI PUBLIC SCHOOL, DWARKA

Questionnaire

COLLABORATIVE PROJECT WITH THE STUDENTS OF RIDING HIGH SCHOOL AND BAL BHARATI PUBLIC SCHOOL DWARKA, INDIA

Objective: To compare energy consumption pattern

S. No.	Questions	Response From Indian Student	Response From U.K. Student	Inference
1.	What is the nature of physical activity that you do?	Running/cycling Dancing	Run → twice a week	Both are physically active
2.	What does your diet mainly include?	rice pulses veg fruit Dairy	meat, potatoes, vegetables, bread milk	there is more rice & pulses in India. More potatoes UK
3.	What exercises do you involve yourself into?	cycling badminton dance	running races fun runs	more varied in India; pollution stop people going outside more; Neither use much energy
4.	What do you have in your breakfast?	sandwich (eggs/milk cereal/pancakes	cereal / toast	Both have milk & cereal. Maybe Indian breakfast is more heavy; more energy used in UK
5.	For how long do your central heating systems are in use?	No heating	in summer - not on in winter - 12hrs a day	more sun in India
6.	For how long are your central air-conditioning systems are in use?	8-10 months 24hrs - fans	Never	Hotter climate in India. Need more fans than heaters
7.	Which of the following would you prefer: a sport of your choice or computing?	sport mainly	depends on weather	computing requires more energy; more used in UK
8.	How many tube lights do you have at your home?	6-8	2 small ones in bathroom	UK has more bulbs low energy; UK use less energy on lighting
9.	How do you travel to your workstation?	bus/walk /car pool; more by bus → CFC buses	car /car pool /bus	India uses more public transport
10.	For how long are the computer systems or game stations in use?	2hrs	12-16 hrs a day	
11.	Give an alternative of tube lights which consumes less energy.	CFLs + gas filled bulbs	low energy bulbs	CFL last longer - higher price; UK uses more low energy bulbs
12.	What is the maximum duration of load-shedding that you have encountered during the peak hours?	has certain times; in urban regions gets it often	only if accidents	India - can't provide it equally - shortage of power
13.	For how long do you use the television sets or the music systems?	3-4 hrs	16hrs a day - TV; 1-2 hrs music system	less energy
14.	D you use some alternative sources of energy in your daily life?	Street lamps - solar; water heat in places - solar	No. Street lamps, street signs - solar. Some has solar	India - can't afford the space/money for solar - more people in UK can afford
15.	How many CFLs do you use?	3-9	none	
16.	Do your parents car pool?	yes	yes - when they can 2+ lanes	more govt. incentives UK; more economic incentives - India
17.	The electricity supplied to your home is a result of which sources of energy?	Thermal nuclear hydro projects	coal	Better in Delhi with hydro electricity
18.	Which appliance consumes maximum energy in your home ?	a/c	central heating	depends on temperature; UK more on electrical
19.	What steps does the school initiate to conserve energy?	teaching recycle switch off lights	recycling insulation	more in UK
20.	Which other methods of conservation do you suggest?	voluntary in India; eco schools needs more knowledge	public awareness; recycling programmes	more recycling steps & environmental solutions in UK

COLLABORATIVE PROJECT WITH THE STUDENTS OF RIDING HIGH SCHOOL AND BAL BHARATI PUBLIC SCHOOL DWARKA, INDIA

Objective: To compare energy consumption pattern

S. No.	Questions	Response From Indian Student	Response From U.K. Student	Inference
1.	What is the nature of physical activity that you do?	cycling, walking dancing, computing	Walking my dog Running	both are physically active - low energy
2.	What does your diet mainly include?	rice, fruit, pulses, wheat	vegetables, bread, dairy, cereal	different cereals consumed. local produce
3.	What exercises do you involve yourself into?	cycling, basketball walking	Running	more sports - organised
4.	What do you have in your breakfast?	roti, milk, toast	cereal with milk	dairy products, bread
5.	For how long do your central heating systems are in use?	NA	In winter - 8hrs 5months; summer - 0hrs	geography based; heating uses more energy than cooling
6.	For how long are your central air-conditioning systems are in use?	24hours 10 months fans AC	—	
7.	Which of the following would you prefer: a sport of your choice or computing?	sport	computing	depends; computing requires more energy
8.	How many tube lights do you have at your home?	6-8	2	UK - use lights for specific purpose.
9.	How do you travel to your workstation?	school bus, car pool walk	car pool / bus	use natural gas as opposed to diesel + petrol
11.	Give an alternative of tube lights which consumes less energy.	CFLs - more efficient sunlight	energy efficient bulbs	different solutions.
12.	What is the maximum duration of load-shedding that you have encountered during the peak hours?	3-4 hours	NA	I. unable to provide energy equally; shortage of energy; UK - more transformers
13.	For how long do you use the television sets or the music systems?	3-4 hrs	6-8 hrs; 3-4 hrs - music	UK; I - more energy for entertainment.
14.	D you use some alternative sources of energy in your daily life?			India - economic status - cannot afford solar.
15.	How many CFLs do you use?	1-9	none	
16.	Do your parents car pool?	yes	no	car pool lanes in UK but more carpool in India.
17.	The electricity supplied to your home is a result of which sources of energy?	coal	coal	hydro electricity + coal
18.	Which appliance consumes maximum energy in your home ?	AC	heating	heating + cooling systems
19.	What steps does the school initiate to conserve energy?	switching off lights + fans	recycle, modern building, insulation	
20.	Which other methods of conservation do you suggest?	recycling - not implemented as strongly	Reduce reuse recycle	In UK, conserve by law, India not implemented as strongly

How Energy Efficient are you?

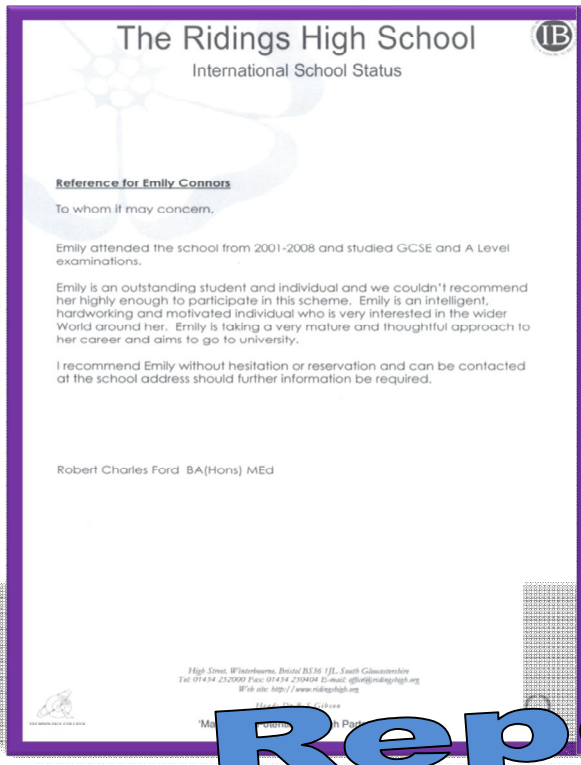
1. Most of the electricity generated in India is from,
   a) Hydro energy b) Coal ✓ c) Nuclear energy d) Wind energy
2. The rural population in India that accounts for about 70 percent of our total population still depends on which of the following non-commercial resources:
   a) Wood b) Dung c) Agricultural waste d) All of these ✓
3. The urban population that accounts for less than 30 percent of our total population, consumes how much percent of available commercial energy (fossil energy):
   a) 20 percent b) 80 percent ✓ c) 50 percent d) 90 percent
4. What is the average frequency of load-shedding that you encounter in summers:
   a) 1-2 hrs per day b) 2-5 hrs per day c) More than 5 hrs per day d) No load-shedding
5. At the present production levels, India has oil reserves only for:
   a) 100 yrs. ✓ b) 39 years c) 19 years d) unlimited resource
6. Which of the following home appliance consumes maximum amount of energy when run for the same amount of time?
   a) Refrigerator b) Television c) Air-conditioner ✓ d) Radio
7. Which of the following are units used for measuring energy:
   a) Joules b) Kilowatt hour c) Calorie d) All of these
8. How often do you switch off lights and fans when leaving a room?
   a) Occasionally b) Frequently c) Always ✓ d) Never

Planet Earth heading for a major Energy Crisis...

1. High energy consumption and affluence go hand in hand. Does this imply that wasteful energy consumption is a sign of wealth?
   Yes, wasteful energy consumption is surely a sign of wealth as the rich usually think that having money can pay the bills and so they end up wasting the same.
2. A packet of 100gm potato chips gives you about 500 kcal of energy on consumption. However, it requires a much greater energy in processing and packaging it. According to you, is it worth enjoying a packet of chips at the cost of the energy spent?
   No, we need to conserve energy when we have limited resources in our hand.
3. Computers account for an estimated 2 to 5% of household electricity consumption. But the usage of internet has made a significant difference. Doe this justify the energy spent? Support your answer with a reason.
   Internet is an integral part of our lives. The energy we consume is more but is for the betterment. It's worth every penny. Rather we should cut down on other expenses.
4. Saving energy is the first step towards energy conservation. Suggest atleast three innovative ways that you can implement in your school to save energy.
   → Switch fans off when not in room
   → Use sunlight instead of the tubelights
   → Also use less energy in summers when their is no electricity and you have the generators working.
5. We have come to rely more and more on the non-renewable resources like coal and petroleum that were made more than 300 million years ago, to sustain our alarmingly swelling energy needs. Besides being physically limited, they pose a serious threat to the health our planet. What according to you could be an alternative solution?
   We can use solar cells, hydro energy and wind energy instead of the fossil fuels as they do not pollute the environment and are present in abundance.
6. Scientists have tapped uranium to fuel nuclear reactors and provide atomic energy. Do you think that nuclear energy can replace the fossil energy? Justify.
   Yes, nuclear energy can undoubtedly replace fossil energy as the fossil fuels are not going to last us long and also do they take millions of years to form. Moreover, we need to have some alternatives when they are finished.
7. Give few examples of how *technology* can be used to find more long-term and sustainable solutions to the present energy crisis.
   The science and technology can help us find more long-term and sustainable solutions the present energy crisis. Also it can improve methods to utilise them in a wise and efficient manner.
8. How can the government play an important role to prevent the energy crisis?
   It is only the government which can alarm the masses and tell about the repercussions of this meticulous use of energy where we do not think much about the conservation

BAL BHARATI PUBLIC SCHOOL, DWARKA

Reports



The Ridings High School
International School Status

Reference for Emily Connors

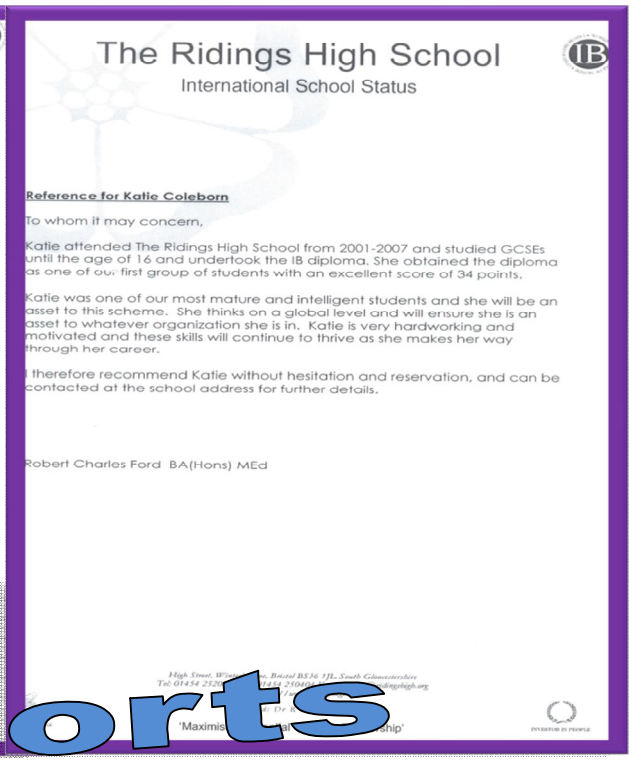
To whom it may concern,

Emily attended the school from 2001-2008 and studied GCSE and A Level examinations.

Emily is an outstanding student and individual and we couldn't recommend her highly enough to participate in this scheme. Emily is an intelligent, hardworking and motivated individual who is very interested in the wider World around her. Emily is taking a very mature and thoughtful approach to her career and aims to go to university.

I recommend Emily without hesitation or reservation and can be contacted at the school address should further information be required.

Robert Charles Ford BA(Hons) MEd



The Ridings High School
International School Status

Reference for Katie Coleborn

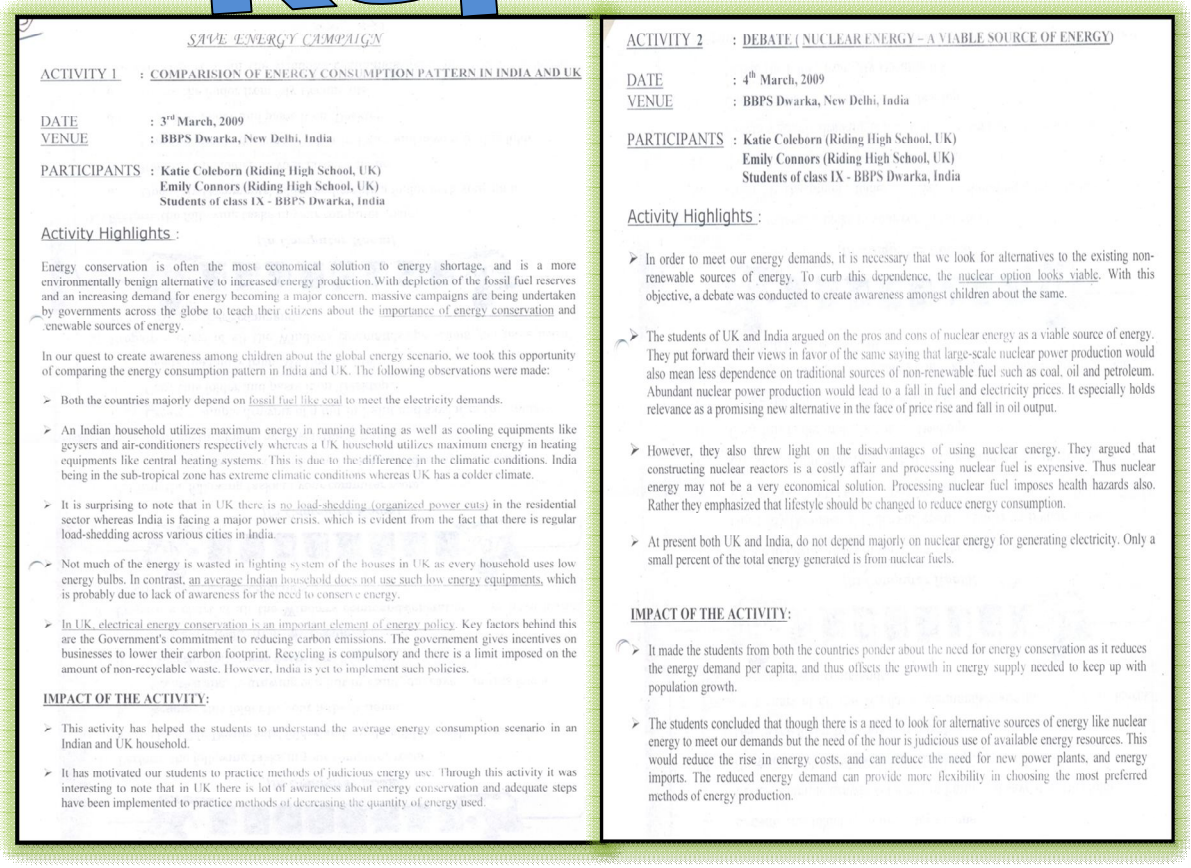
To whom it may concern,

Katie attended The Ridings High School from 2001-2007 and studied GCSEs until the age of 16 and undertook the IB diploma. She obtained the diploma as one of our first group of students with an excellent score of 34 points.

Katie was one of our most mature and intelligent students and she will be an asset to this scheme. She thinks on a global level and will ensure she is an asset to whatever organization she is in. Katie is very hardworking and motivated and these skills will continue to thrive as she makes her way through her career.

I therefore recommend Katie without hesitation and reservation, and can be contacted at the school address for further details.

Robert Charles Ford BA(Hons) MEd



SAVE ENERGY CAMPAIGN

ACTIVITY 1 : COMPARISION OF ENERGY CONSUMPTION PATTERN IN INDIA AND UK

DATE : 3rd March, 2009
VENUE : BBPS Dwarka, New Delhi, India

PARTICIPANTS : Katie Coleborn (Riding High School, UK)
Emily Connors (Riding High School, UK)
Students of class IX - BBPS Dwarka, India

Activity Highlights :

Energy conservation is often the most economical solution to energy shortage, and is a more environmentally benign alternative to increased energy production.With depletion of the fossil fuel reserves and an increasing demand for energy becoming a major concern, massive campaigns are being undertaken by governments across the globe to teach their citizens about the importance of energy conservation and renewable sources of energy.

In our quest to create awareness among children about the global energy scenario, we took this opportunity of comparing the energy consumption pattern in India and UK. The following observations were made:

- Both the countries majorly depend on fossil fuel like coal to meet the electricity demands.
- An Indian household utilizes maximum energy in running heating as well as cooling equipments like geysers and air-conditioners respectively whereas a UK household utilizes maximum energy in heating equipments like central heating systems. This is due to the difference in the climatic conditions. India being in the sub-tropical zone has extreme climatic conditions whereas UK has a colder climate.
- It is surprising to note that in UK there is no load-shedding (organized power cuts) in the residential sector whereas India is facing a major power crisis, which is evident from the fact that there is regular load-shedding across various cities in India.
- Not much of the energy is wasted in lighting system of the houses in UK as every household uses low energy bulbs. In contrast, an average Indian household does not use such low energy equipments, which is probably due to lack of awareness for the need to conserve energy.
- In UK, electrical energy conservation is an important element of energy policy. Key factors behind this are the Government's commitment to reducing carbon emissions. The governement gives incentives on businesses to lower their carbon footprint. Recycling is compulsory and there is a limit imposed on the amount of non-recyclable waste. However, India is yet to implement such policies.

IMPACT OF THE ACTIVITY:

- This activity has helped the students to understand the average energy consumption scenario in an Indian and UK household.
- It has motivated our students to practice methods of judicious energy use. Through this activity it was interesting to note that in UK there is lot of awareness about energy conservation and adequate steps have been implemented to practice methods of decreasing the quantity of energy used.

ACTIVITY 2 : DEBATE (NUCLEAR ENERGY – A VIABLE SOURCE OF ENERGY)

DATE : 4th March, 2009
VENUE : BBPS Dwarka, New Delhi, India

PARTICIPANTS : Katie Coleborn (Riding High School, UK)
Emily Connors (Riding High School, UK)
Students of class IX - BBPS Dwarka, India

Activity Highlights :

- In order to meet our energy demands, it is necessary that we look for alternatives to the existing non-renewable sources of energy. To curb this dependence, the nuclear option looks viable. With this objective, a debate was conducted to create awareness amongst children about the same.
- The students of UK and India argued on the pros and cons of nuclear energy as a viable source of energy. They put forward their views in favor of the same saying that large-scale nuclear power production would also mean less dependence on traditional sources of non-renewable fuel such as coal, oil and petroleum. Abundant nuclear power production would lead to a fall in fuel and electricity prices. It especially holds relevance as a promising new alternative in the face of price rise and fall in oil output.
- However, they also threw light on the disadvantages of using nuclear energy. They argued that constructing nuclear reactors is a costly affair and processing nuclear fuel is expensive. Thus nuclear energy may not be a very economical solution. Processing nuclear fuel imposes health hazards also. Rather they emphasized that lifestyle should be changed to reduce energy consumption.
- At present both UK and India, do not depend majorly on nuclear energy for generating electricity. Only a small percent of the total energy generated is from nuclear fuels.

IMPACT OF THE ACTIVITY:

- It made the students from both the countries ponder about the need for energy conservation as it reduces the energy demand per capita, and thus offsets the growth in energy supply needed to keep up with population growth.
- The students concluded that though there is a need to look for alternative sources of energy like nuclear energy to meet our demands but the need of the hour is judicious use of available energy resources. This would reduce the rise in energy costs, and can reduce the need for new power plants, and energy imports. The reduced energy demand can provide more flexibility in choosing the most preferred methods of energy production.

BAL BHARATI PUBLIC SCHOOL, DWARKA

COLLABORTIVE PROJECT WITH THE STUDENTS OF RIDING HIGH SCHOOL (UK) AND BAL BHARATI PUBLIC SCHOOL, DWARKA (INDIA)

OBJECTIVE

- TO COMPARE ENERGY CONSUMPTION PATTERN IN UK AND INDIA.
- TO CONDUCT A DEBATE ON NUCLEAR ENERGY BEING A VIABLE SOLUTION TO THE CURRENT ENERGY CRISIS.

REPORT

SAVE ENERGY CAMPAIGN

ACTIVITY I : COMPARISION OF ENERGY CONSUMPTION PATTERN IN INDIA AND UK

DATE : 3rd March, 2009
VENUE : BBPS Dwarka, New Delhi, India

PARTICIPANTS : Katie Colebourn (Riding High School, UK)
Emily Connors (Riding High School, UK)
Students of class IX - BBPS Dwarka, India

Activity Highlights :

Energy conservation is often the most economical solution to energy shortage, and is a more environmentally benign alternative to increased energy production.With depletion of the fossil fuel reserves and an increasing demand for energy becoming a major concern, massive campaigns are being undertaken by governments across the globe to teach their citizens about the importance of energy conservation and renewable sources of energy.

In our quest to create awareness among children about the global energy scenario, we took this opportunity of comparing the energy consumption pattern in India and UK. The following observations were made:

- Both the countries majorly depend on fossil fuel like coal to meet the electricity demands.
- An Indian household utilizes maximum energy in running heating as well as cooling equipments like geysers and air-conditioners respectively whereas a UK household utilizes maximum energy in heating equipments like central heating systems. This is due to the difference in the climatic conditions. India being in the sub-tropical zone has extreme climatic conditions whereas UK has a colder climate.
- It is surprising to note that in UK there is no load-shedding (organized power cuts) in the residential sector whereas India is facing a major power crisis, which is evident from the fact that there is regular load-shedding across various cities in India.
- Not much of the energy is wasted in lighting system of the houses in UK as every household uses low energy bulbs. In contrast, an average Indian household does not use such low energy equipments, which is probably due to lack of awareness for the need to conserve energy.
- In UK, electrical energy conservation is an important element of energy policy. Key factors behind this are the Government's commitment to reducing carbon emissions. The government gives incentives on businesses to lower their carbon footprint. Recycling is compulsory and there is a limit imposed on the amount of non-recyclable waste. However, India is yet to implement such policies.

IMPACT OF THE ACTIVITY:

- This activity has helped the students to understand the average energy consumption scenario in an Indian and UK household.
- It has motivated our students to practice methods of judicious energy use. Through this activity it was interesting to note that in UK there is lot of awareness about energy conservation and adequate steps have been implemented to practice methods of decreasing the quantity of energy used.