

Take Action: Reducing Air Pollution

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Air Pollution

Air Pollution, its causes and effects as it relates to us as a person and a community. Conducting experiments, researching and motivating others to act on their convictions to make a difference and make a change in their lives to reduce Air Pollution.

It is desired that after completion of this project our students would be equipped with the facts on air pollution and preventive measures which could be employed to alleviate the health risks associated with air pollution. During the course of this project it is also anticipated that students would see themselves as part of a solution to air pollution and perceive their input as an important part of a worthwhile project that affects their way of life, as well as, others.

Research

Air pollution is the introduction of chemicals, particulate matter or biological materials that cause harm or discomfort to humans or other living organisms or cause damage to the natural environment. (McGraw-Hill Science & Technology Dictionary(n.d) Available <http://www.answers.com/library/Sci%252DTech+Dictionary-cid-93651>)

The atmosphere is a complex dynamic natural gaseous system that is essential to support life on Earth. It has been recognized that due to the depletion of the ozone layer a threat exists to the health of humans. Air pollution principally injures the respiratory system.

There are many different chemical substances that contribute to air pollution. These chemicals come from a variety of sources. Among the many types of air pollutants are nitrogen oxides, carbon monoxides, and organic compounds that can evaporate and enter the atmosphere. Air

pollutants have sources that are both natural and human. Now, humans contribute substantially more to the air pollution problem. Forest fires, volcanic eruptions, wind erosion, pollen dispersal, evaporation of organic compounds, and natural radioactivity are all among the natural causes of air pollution. Usually, natural air pollution does not occur in abundance in particular locations. Though some pollution comes from these natural sources, most pollution is the result of human activity.

Carbon dioxide is one the main pollutants for air pollution causes. Although there is a symbiosis relationship between living beings which exhale Carbon Dioxide and plants which depend on this gas to survive, this gas becomes harmful when they are emitted in large quantities from other sources, caused by human activities. Carbon dioxide gas is produced in various industries, such as the oil industries and the chemical industries. The manufacturing process of a lot of products we use in our daily lives produces Carbon Dioxide as a by product. There are various human activities that add to the increased proportions of Carbon Dioxide in the atmosphere. The combustion of fossil fuels by man is one of the main contributors of the rise in Carbon Dioxide in the atmosphere. Deforestation through logging or slash and burn for short term farming adds to the increase in Carbon Dioxide since the Rainforest acts as the “lungs” of our planet Earth. According to the National Geographic (n.d.) Carbon dioxide, a greenhouse gas, is the main pollutant that is warming Earth. Though living things emit Carbon Dioxide when they breathe, Carbon Dioxide is widely considered to be a pollutant when associated with cars, planes, power plants, and other human activities that involve the burning of fossil fuels such as gasoline and natural gas. In the past 150 years, such activities have pumped enough carbon dioxide into the atmosphere to raise its levels higher than they have been for hundreds of thousands of years. Causes of air pollution are not limited to this. The combustion of fuels in automobiles, jet planes etc. all cause the release of several primary pollutants into the air. The burning of fossil fuels to provide an ever demanding and ever increasing source of energy for cities, factories, and homes serve as a huge contributor of an increasingly and alarming rate of air pollution. The release of other harmful gases all adds to the Earth’s rapid deterioration. Although carbon dioxide plays an important role in various other processes like photosynthesis, breathing an excess of the same can causes harmful effects on one's health. Excess Carbon Dioxide in the atmosphere dissolves in the rain water to form a weak acid called Carbonic Acid. This is acid is measurable using a pH

paper or litmus paper. Using this fact using the acidity test to test the pH of rain samples over a period of time can assist in demonstrating that pollution is very real and that we as human beings need “to make a difference make a change’ in our behavior.

The various causes of air pollution that releases harmful gases into the atmosphere are caused due to the increasing number of power plants and manufacturing units or industries that mostly have activities related to the burning of fuels. Besides, as mentioned earlier, most automobiles, marine vessels, activities that involve the burning of wood, fumes that are released from aerosol sprays, military activities that involve the use of nuclear weapons, are some of the major causes of air pollution.

Carbon monoxide is another such gas which, although was present in the atmosphere earlier, is now considered to be a major pollutant. An excess of the same has a harmful effect on our system. There are many reasons why carbon monoxide can be released into the atmosphere as a result of human activities. This is also produced due to any fuel burning appliance and appliances such as gas water heaters, fireplaces, wood stoves, gas stoves, gas dryers, yard equipment, as well as automobiles, which add to the increased proportion of this gas into the atmosphere.

Sulfur dioxide is yet another harmful pollutant that causes air pollution. Sulfur dioxide is emitted largely to the excessive burning of fossil fuels, petroleum refineries, chemical and coal-burning power plants, etc. Nitrogen dioxide when combined with sulfur dioxide can even cause a harmful reaction in the atmosphere that can cause acid rain.

Nitrogen dioxide is one more gas that is emitted into the atmosphere as a result of various human activities. An excess of nitrogen dioxide mainly happens due to most power plants seen in major cities, the burning of fuels due to various motor vehicles and other such sources, whether industrial or commercial that cause the increase in the levels of nitrogen dioxide.

These and a number of other hazardous air pollutants are emitted with the various numbers of activities that we carry out during the day which are the main causes of air pollution.

Air Pollution Health Risks Social Concern

Air pollution can affect our health in many ways with both short-term and long-term effects. Different groups of individuals are affected by air pollution in different ways. Some individuals are much more sensitive to pollutants than are others. Young children and elderly people often suffer more from the effects of air pollution. People with health problems such as asthma, heart and lung disease may also suffer more when the air is polluted. The extent to which an individual is harmed by air pollution usually depends on the total exposure to the damaging chemicals, i.e., the duration of exposure and the concentration of the chemicals must be taken into account. (California Environmental Protection Agency Retrieved July 22, 2011 Available at <http://www.arb.ca.gov/research/health/health.htm>)

Examples of short-term effects include irritation to the eyes, nose and throat, and upper respiratory infections such as bronchitis and pneumonia. Other symptoms can include headaches, nausea, and allergic reactions. Short-term air pollution can aggravate the medical conditions of individuals with asthma and emphysema.

Long-term health effects can include chronic respiratory disease, lung cancer, heart disease, and even damage to the brain, nerves, liver, or kidneys. Continual exposure to air pollution affects the lungs of growing children and may aggravate or complicate medical conditions in the elderly.

How to Prevent Air Pollution

- ✓ Carpool - This will help to reduce the number of vehicles on the already congested roads.
- ✓ Always keep your car tuned properly so that it remains in a good condition.
- ✓ Save energy - Try to use minimum amounts of natural gas and even electricity. Whenever possible, avoid the use of air conditioner and use a fan instead.
- ✓ Always buy recycled products.
- ✓ Re-use things such as paper and plastic bags, paper etc. This will contribute a lot towards reducing the effects of air pollution and global warming.
- ✓ Go in for water-based paints instead of varnishes.

In our schools the students are required to become informed individuals and be privy to the knowledge on pollution as it is an integral part of their life and as a result of being empowered

through the Social Studies curriculum they will become equipped with the information to alleviate and diminish the threat to their health. This project would focus on the concept of causes and consequences will facilitate the developing of students' enquiry skills thereby providing them with the opportunity to care and respect the environment.

Support

The Environmental Management Authority

(Available at:

http://www.ema.co.tt/cms/index.php?option=com_content&task=view&id=35&Itemid=42)

History



For 25 years, the responsibility for environmental issues in Trinidad and Tobago was handled by various ministries under successive governments.

In this time, investments in the protection, conservation and enhancement of the environment of Trinidad and Tobago were somewhat limited and uncoordinated. This resulted in a patchwork of approximately forty (40) pieces of legislation addressing various aspects of environmental management and some twenty-eight (28) government agencies involved in carrying out the associated functions and activities.

The result was a lack of institutional and legal focus for environmental management and the continued degradation of the country's resources

From as early as 1985, the need for one agency to coordinate all environmental matters and clearly define the roles of all government agencies was acknowledged. (History of Environmental Management Agency Available at:

http://www.ema.co.tt/cms/index.php?option=com_content&task=view&id=35&Itemid=42)

In 1992, History of Environmental Management Agency(n.d) Available at:

http://www.ema.co.tt/cms/index.php?option=com_content&task=view&id=35&Itemid=42

at the United Nations Conference on Environment and Development (The Earth Summit), held

in Rio de Janeiro, the Government of Trinidad and Tobago committed itself internationally to addressing the country's crucial environmental problems and improving its future environmental performance.

Here the Government announced its intention to foster and encourage ecologically sustainable development.

But it was not until March 1995 that the Environmental Management Act No.3 was passed. The Act established the Environmental Management Authority (EMA) and provided for its composition, administration, financing and role.

(History of Environmental Management Agency(n.d)Available at:

http://www.ema.co.tt/cms/index.php?option=com_content&task=view&id=35&Itemid=42)

Start up funding for the institution was made available through a World Bank loan with additional assistance from the United Nations Development Programme (UNDP) and the Government of Trinidad and Tobago.

The Authority began operations in June 1995 and now facilitates cooperation among Government Agencies, NGOs and community-based organizations. The EMA is mandated to write and enforce laws and regulations for environmental management, to educate the public about the nation's environmental issues and to control and prevent pollution, as well as conserve natural resources.

Parental and community support in this project will also be provided. The students would educate the community and their parents by providing them with the facts pertaining to air pollution in the following ways: flyers, presentation of a discourse by a resource personel from the EMA of Trinidad and Tobago and displaying posters.

Plan of Action

Air Pollution affects the entire world and should be everyone's concern. It is necessary to allow students to investigate and see for themselves the direct effects of air pollution on the environment. It is hoped that by encouraging them to perform experiments and analyzes the

results they would become motivated to make a difference. Testing the Acidity of rain water gives a clear indication that there is a level of pollution in the atmosphere that is noticeable. Collecting dust samples at various parts of the school to compare and prove that the trucks transporting aggregate and sand just out the school compound contribute to Air Pollution which affects the school environment and by extension the students' health.

Once students have clearly seen the evidence provided by the experiments they would be encouraged to research pollution and present their findings in a project form. The highlight of the project being to: write a letter to the principal informing him/her about the effects of pollution in school and ways of reducing the effects in and around the school.

As students gain knowledge of Pollution through their research, they present their research for the school to view during a scheduled time agreed upon by the principal. The students also work in groups to create posters for the school depicting Poverty and Pollution and its effects on the environment and humans.

In order to sensitize parents of the school population about Air Pollution and its effects, students will display their work to the P.T.A. (Parents and Teachers' Association) meeting held monthly at the participating schools. They would also plan and present a drama during a Parents and Teachers meeting. It is hoped that parents will become interested by the presentations and come on board with making a difference in the community.

Students would design and create posters, flyers and banners to display during their Walk-a-Ton within the community to inform people in their community of pollution and the harmful effects it can have on their health and their environment.

In order to assist in reversing the process pollution has on the environment, students, with assistance, will contact the Ministry of Agriculture to have plants donated to the school which would be planted with the assistance of the E.M.A. (Environmental Management Association) club. The tree planting will extend into the community with the permission of the principal, where, the community leaders and land owners within the community where trees would be planted.

It is hoped that with this massive campaign students, parents, as well as, community members would become aware of the harmful effects of Pollution and make a change in their actions and make a positive impact on the Social problems that are associated with pollution.

Moto Developed: “Make a change and make a difference”

Steps / Initiatives:

List of actions to be taken

- 1) Motivate students to carry out experiments to investigate acidity of water due to air pollution and to compare the degree of dust particles at various parts of the school to prove that the high traffic area outside the school compound contribute to Air Pollution.
- 2) Pupils research Pollution and in specific Air and Marine Pollution then they write a letter to their principal of ways of reducing the effects of Pollution in and around the school.
- 3) Students work in groups to sensitize the school population of air pollution and its effects on the environment and to human being.
- 4) Students inform Parents about the health risk involved in air pollution by displaying their research and their posters during a P.T.A. meeting to get parents on board with the plan of action.
- 5) Students work in groups to sensitize the general population of air pollution through flyers, posters and banners during a walk about in the community.
- 6) Students work collaboratively to source plants from the Ministry of Agriculture.
- 7) Students help the reverse the effects of pollution and global warming by inviting the E.M.A. club and the 4H’ers club to assist in planting trees on the school compound and work with their parents and stakeholders in their community to plant trees in the neighborhood.

Budget Proposal

Budget Proposal (Take Action Project)					
Period:	February-March 2012				
Participating Schools:	Santa Rosa Government Primary School Five Rivers Hindu School Guico Presbyterian Primary School Coryal Presbyterian School				
			Amount		
Income					
Donations:			2000.00		
Teachers' input:			500.00		
None governmental Support:			500.00		
School Support:			300.00		
P.T.A. Support			600.00		
Total Proposed Income:			3900.00		
Proposed Expenditure:					
Acid Rain Experiment:			400.00		
Display of Pollution Project: (refreshments, invitations)			300.00		
Walk About Activity:			1200.00		
Tree Planting Activity: (refteshments, fertiliser, watering cans, etc)			800.00		
Resource Personnel Visits:			200.00		
Miscelenous Expences:			1000.00		
Total Proposed Expenditure			3900.00		

Implementation of the plan

Acid Rain Experiment

Aim: To test the Acidity of rain water after a long dry spell where pollution and dust particles get trapped in the atmosphere.

Purpose: The compare the Acidity of water samples from the rain with distilled water at various periods to prove that rain water becomes Acidic with pollution.

Materials: 4 Beakers, pH paper, water samples, distilled water, 2 tweezers, and pH chart.

Method: Pupils collect rain sample over a period of 1 week, bottled the samples and label the samples. They then test the pH of the water samples and compared it to distilled water using the pH paper and pH chart.

Results: The water sample taken from the rain is more acidic than distilled water. Rain water is more acidic after a long dry spell and becomes less acidic as the rain progresses.

Conclusion: Comparing the skies before and after rain fall one can see the difference in the clarity. Rainfall washes the atmosphere and removes the impurities caused by Air Pollution. These impurities are caused by various agents of which, man is the main contributor. The level of acidity clearly shows that the sky is tainted with pollution which was measured using the pH scale. The level of acidity reduced and the visibility of the sky improved as the rain progressed which proved that the pollution got trapped in the first rainfall after the long dry spell and fell as acid rain.

The following are pictures of students conducting their experiment:

Collecting Rain Water Sample



Testing Day One Sample of Rain Water



Testing Day Three Sample of Water



Materials used in the Experiment



Reflection:

This activity provided an opportunity for the students to investigate the effects of pollution on the environment by conducting an experiment to see firsthand how pollution changes the acidity of the rain water. They were able to compare the results and determine that air pollution is real and measurable using the level of acidity of the rain water.

The experiment went well especially since we were able to collect samples of rain water after a long period of sun. Usually during this time of the year, the dry season, it is difficult to collect rain water over a period of a week, but we had unusual weather this year and we were grateful for the unexpected rain.

The intention of the plan was to provide an experience that would have a life changing effect on their lives one they could remember and explain.

We discussed the experiment and all agreed that the experiment was a success. One of the teachers indicated that we could introduce a clarity test where they would compare how the clarity of the sky is affected by rainfall. We all agreed that it would work nicely with the Acid Rain experiment.

Air Trap Experiment

Aim: To collect and compare the degree of dust the school is exposed to by trucks carrying aggregate on the main road.

Purpose: To determine through the investigation if there is a problem caused by the traffic outside the school compound.

Materials: Air Traps, tape, magnifying glass.

Method: Pupils collect dust samples at various parts of the school over a period of 1 week using Dust traps they made in Craft class and use their magnifying glass to compare them and fill out their report.

Results: The Air traps collected outside the school gate had the greatest amount of dust collected and the amount collected reduced as you get further away from the road, whilst the one positioned at the back of the school away from the road had the least amount of dust.

Conclusion: The evidence suggest that there is a much higher level of dust outside the school wall and reduces somewhat as you travel away from the road into the school compound. These results can be linked to the number of students affected by sinus and asthma.



(Air Trap being placed at various locations around the school)

(See sample below of data sheet)

Amount of Pollutants collected by the end of the day.

Area where traps were placed	Amount of Pollution			Colour of trap	Pollutants Identified
	Slight	Moderate	Very Much		
Back of school					
Front of the school			✓	brown	dust particles
In the classroom					

Reflection:

This experiment was particularly done at Guico Pres. Primary School because they are plagued with constant dust. It is suspected that it is as a result of trucks carrying aggregate from quarries. The dust is a constant nuisance as it found everywhere in the school. The experiment was done to investigate and document the true source of the dust so that the authorities can be informed and for some action to be taken.

We found that this experiment suited the problem faced by the school in particular and all agreed that it was a well selected experiment to have students conduct. We believed that it connects with the theme of the take action project where students are taught to investigate and collect evidence to support their claims then to take action to have the problem rectified.

The experiment was successful in the school mentioned above but wasn't as effective as in the other participating schools. We believe that although the experiment was tailored to suit the school mentioned above we were able to compare the results with all the schools participating

and come to the conclusion that the school does have a problem with the amount of dust that blows into the school and what contributes to this problem.

Pollution Project (given to students of Standard 3)

Standard Three

Project: Air Pollution

This project must be **hand written** and students will be **questioned orally** on what is presented.

Deadline Date: **02nd March, 2012.**

Project Layout

Cover Page-

- 1) Name of Student
- 2) Name of Project
- 3) Subject
- 4) Teacher

Table of Contents- List of topics which include:

Section One

- What is Pollution?
- Various Types of Pollution.
- Air Pollution
- Acid Rain.
- Ways of Reducing Air Pollution

Section Two

- What is Marine Pollution?
- Examples of pollutants that causes Marine Pollution.
- Ways of reducing Marine Pollution.

Section Three

- **Conclusion**-Write a letter to the Principal informing him/her about the effects of pollution in school and ways of reducing the harmful effects in and around the school.

Important Notice: The project's Table of Content and Headings of Topics can be printed but the information must be hand written to ensure that it is done by the student. Pictures can be in color or black and white. Where it is impossible to collect pictures, drawings can be made to support the information presented.

Project: Pollution

Year: 2012

Class: Standard Three Khan

Subject: Science

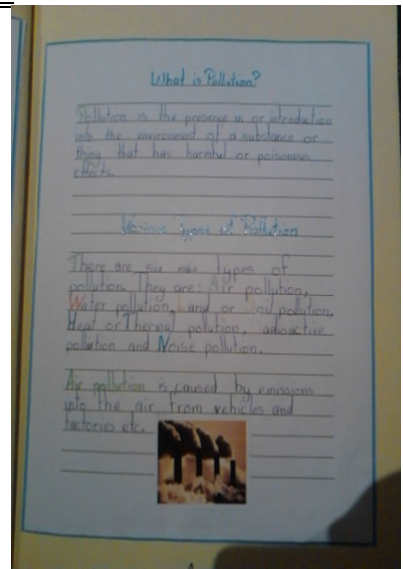
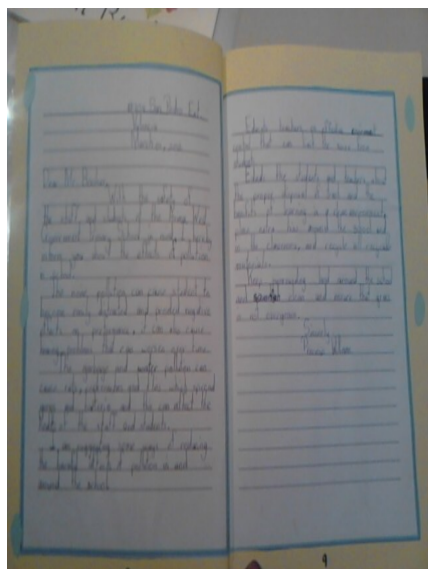
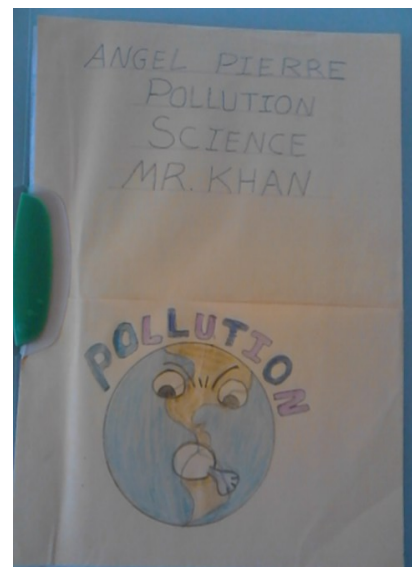
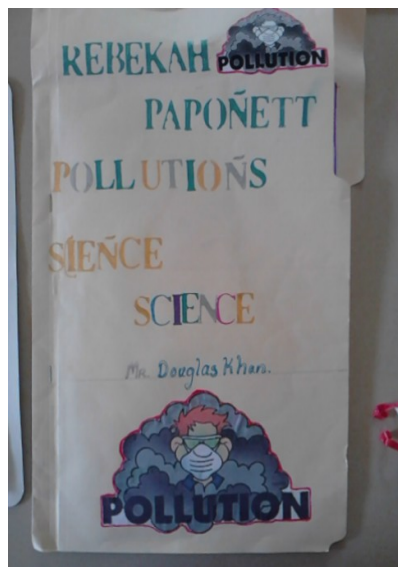
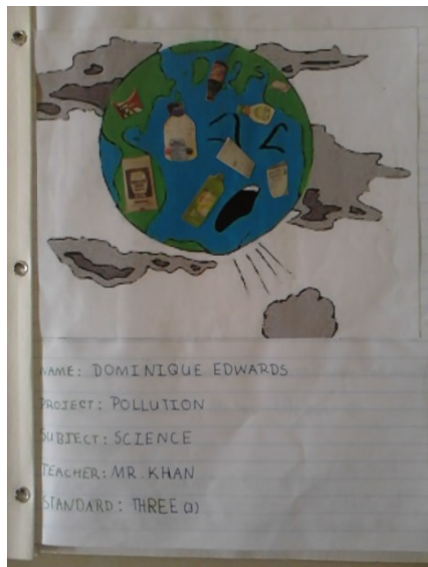
Marking Scheme: Total 30 marks

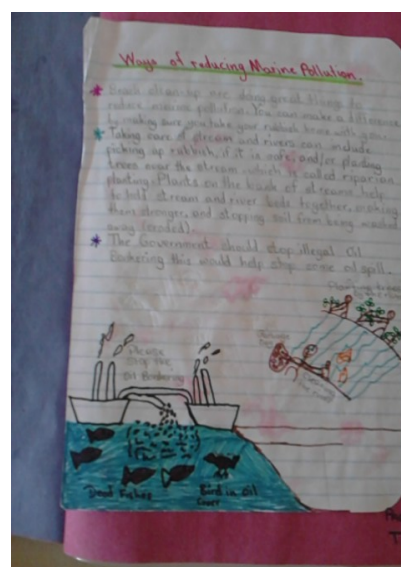
Rubric

Presentation of folder:	4 marks
Format:	2 marks
Creativity:	2 marks
Legibility:	2 marks
Content:	12 marks
Proposal to Principal:	8 marks
Total:	30 marks

Design and created by Hema Khan and Douglas Khan

Samples of Projects done by students





Ways to Reduce Air Pollution

Recycle paper, plastic, glass bottles, cardboard and aluminum cans. (This conserves energy and reduces pollution emissions.)

Use low-VOC water-based paints, stains, finishes, and paint strippers.

Choose not to smoke in your home, especially if you have children. If you or your visitors must smoke, then smoke outside.

Choose products that have less packaging and are reusable.

Shop with a canvas bag instead of using paper and plastic bags.

When possible, use public transportation, walk, or ride a bike.

Avoid waiting in long drive-thru lines at fast-food restaurants or banks. Park your car and go in.

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Various Types of Pollution

Land Pollution

Read later all the plastic bottles and paper in all forms in the world is causing pollution.

Water Pollution

All dirty water from houses, hospitals, farms, industries, dumping into rivers causes Pollution.

Heat Pollution

Not all pollution is obvious to us. Heat pollution can be in form of Pollution.

Air Pollution

Read later all the plastic bottles and paper in all forms in the world is causing pollution.

Marine Pollution

All dirty water from houses, hospitals, farms, industries, dumping into rivers causes Pollution.

Noise Pollution

Read later all the plastic bottles and paper in all forms in the world is causing pollution.

Page 2
Two

Terrific Pollution

Noise Pollution

Noise Pollution can be disturbing, irritating or damaging if it disturbs any natural process or causes human harm.

Noise can have serious effects on babies, the elderly, at-risk patients and pets. It can cause migraines, irritability, hearing loss and sleep deprivation.



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POLLUTION. SCIENCE. MEXICAN.

Don't Litter
Please Use Bin



Mom (Dad) Please Don't Smoke

Class Standard Three

UNION 3013 SC

POLLUTION 2012



Art Display (Poverty and Pollution)



Pupils work in groups to depict Poverty and Pollution and its effects on humans and the environment.

Display of Students' Pollution Project to the School and to Parents

Students entertain questions from parents and students from their school based on their research.



Reflection:

This activity provided an authentic experience for the students to share the knowledge they gained through the research on Pollution. It provided an opportunity for students to display their work and answer questions on Pollution. They were given an opportunity to explain their plan of action as a student and a class to the student population and parents. It was designed to encourage other students to come on board with saving the environment by making changes regardless of its size.

The plan was initially intended for the entire school to visit the display but only the Standard 3 and Standard 4 classes were invited. We realized that in order to provide a good comprehensive package we focused on a limited number of students of sixty students. In some schools that made up the entire school whilst in other cases that made up only three classes. Our students were really put to the test of the content of their project and provided us with a first hand opportunity to evaluate our students on how much they learnt by doing the project.

It was discussed among the teachers of the participating classes that some parents rob their child of the experiences of doing a project hence, we asked them to hand write their research making it difficult for parents to do the project for their child. There were clearly some students who were more articulate than others but our main concern was how much the students actually knew of the topic after they researched it.

It was agreed that the next time a project is given we would try to have the entire level or the entire school onboard so that a greater impact would be made. We also agreed that the presentation should be done three weeks prior to test so as to link topic to the end of term test so that it would serve as a revision for students' weekly and monthly test.

The project was a success as we were able to help our students become active learners and participants in their quest for knowledge. We thought that the activity inspired the students to encourage others to join in on their quest to "make a change and make a difference".

Tree planting activity on the school compound and in the community

(Planting on the school compound)





(Getting parents on board to assist)



(Planting in the community)



Getting older students to assist

Pupils source trees from the Ministry of Agriculture and plant them on the school compound and in the community.

Variety: Pink Poui, Yellow Poui, Orange and Ficus.

Reflection:

This activity was a true and meaningful project as it gave students a sense of purpose and responsibility. They were able to see the importance of planting trees and able to share their knowledge with their parents and various clubs within the school to assist. The activity was planned with the intention of having the Environmental Management Authority of Trinidad and Tobago come in and share their knowledge of ways of reducing pollution and what their organization does to assist but when contacted they assured us that they would visit but in the interim they sent charts and flyers to share with the students.

There were a lot of participants involved in the tree planting exercise as students, parents, teachers, EMA club and the 4H'ers all got involved in the tree planting activity. It was encouraging to see that so many people got involved in all the four schools that took part. This activity marked a significant start to a program in which students see the need for planting and conserving trees and make a difference by planting trees and nurturing them until they are self sufficient.

Everyone involved in the tree planting enjoyed helping and supported the venture. Mention was made of acquiring more plants and planting them within the school and of course in the community.

Resource Personnel

An ASA Wright resource personnel was invited to Santa Rosa Government Primary School to share their knowledge about Pollution and its effects on the environment and on animals. She shared her knowledge and experience with the students. Pictures of places polluted by oil spill and animals affected by the oil were shared and discussions were entertained.

Discussions taking place



Joanne Ryan from ASA Wright

Reflection:

This activity involved a Resource Personnel from ASA Wright Nature Centre. Having my students join in on discussions about pollution during the time when they were doing their research was an excellent time for students to share what they knew and ask pertinent questions involving Air Pollution in particular. They were very eager to see her pictures and charts in which she elicited information from them about pollution. What was important to note was the planning of her material to share with my students was made with the syllabus relevant to the students' level. It was very encouraging to see my students so interested in discussions where as in the past classes students didn't make that connection as this group has.

Walk About Project

Aim: To inform the community members of the treat that pollution has on their environment and ways of reducing pollution in their community.

Purpose: To educate members of the community about pollution.

Materials: Posters, banners, flyers.

Method: Pupils walk the community with teachers to hand out flyers and displaying their posters and banners on pollution and ways in which anyone can "Make a change and make a difference," to save the environment.

Results: Awaiting approval from the Ministry of Education. See a copy of the application forms.

File No. _____ Principal _____ School _____
 Title _____
 DATED: _____
 SUBJECT: School Caring Child Steps - Request for Permission

(TO BE SUBMITTED THREE (3) WEEKS IN ADVANCE)

- I wish to request permission to take students on an Educational Caring/Child Step on _____
Day of May 1961
- Number of students involved _____ to _____
 BIRTH DATE _____
- Purpose of Caring is to achieve _____
 To educate the community about pollution and ways of dealing with it
 To help them fight air and water pollution
 To encourage people to grow their own vegetables
- In charge of the project on that day will be _____
 Principal () Vice Principal ()
 Teacher _____
- Anying the effort in charge will be _____ people to one (1) teacher
 Josephine Chen (P)
 Josephine Chen (P)
 Johnnie Chabriel (Teacher)
- Means of Transport _____
- Written parental permission for each child has been obtained _____
- Assurances to family given that adequate supervision will be provided by the teachers accompanying the pupils in keeping with procedures outlined on October 20, 22 dated 1960 March, 1960 on the subject of Field Trips.
- There shall be NO UNWARRANTED BATHING OR ROATING BEING DONE.
- Other information _____
Handy by Josephine Chen and Johnnie Chabriel signed by school authorities

Principal's Signature and School Stamp _____

FOR OFFICE USE:
 Recommended/Not Recommended _____
 School Supervisor _____
 DATED: _____
 Approved/Not approved _____
 School Supervisor _____
 DATED: _____

(To be Forwarded to Director of Schools Department)

 **Santa Rosa GoVt School**
Committed to Excellence

Principal: Cheryl Clarke - England
Vice Principal: Debra Edwards - Florida

Headmaster: Cheryl Clarke
Scribe: Tracy Higgins
Tel: 408-288-0000
england@gsdmail.com

Dear Parent / Guardian,

Your consent is requested for your child / ward Angel Perez
to go on a field trip to San Jose Community
on Friday 4th May 2012

Purpose: To educate the community member about
pollution and ways they can assist in reducing pollution
and about in the community

Leaves school at 9:00 am
Returns to school at 10:00 am
Cost: Nil

Yours respectfully,

Cheryl Clarke Raphael
Principal

Angela Ho (TP)
Teacher

☒ **Consent** ☐ **Do not consent** For

I Angela Perez (Name of parent/guardian) BLOCK LETTERS
Angela Perez to go on the field trip on 04/05/12
(Name of child)
Angela Perez (Signature of parent)

(Application for Walk About)

(Sample of signed consent form)

Reflection:

We look forward to embarking on this activity as it serves as an integral part of the Take Action Project to make community members aware of Pollution and the harmful effects on humans and the environment. We hope it would foster a positive attitude of the students and community members towards the environment. Charts, banners and flyers will be prepared next term by students with supervision as part of an Art and Craft project in preparation for the Walk About with the students. We will invite parents who are already on board and supporting the project. Letters have been sent to the relevant authorities to have a stand-by Ambulance and Police escort and we are awaiting approval. We believe students will become empowered with this activity and inspired to do similar projects “to make a difference make a change” in their community.

Application of Learning

In a world where it is increasingly challenging to get students interested in classroom lessons, take action projects offers an enriching way for both students and teachers to connect their appreciation of the natural world to academics. Children have a natural interest in the environment around them. Interested students are motivated students, and motivation is a key ingredient for academic achievement. The students derived numerous benefits as a result of completing this project. They were exposed and required to use specific critical thinking skills ,

questioning, investigating, forming hypotheses, interpreting data, analyzing, developing conclusions, and solving problems.

This project emphasizes cooperative learning (i.e., working in teams or with partners), critical thinking and discussion, hands-on activities, and a focus on action strategies with real-world applications. As a result, students were expected to develop and practice the following leadership skills:

- Working in teams
- Listening to and accepting diverse opinions
- Solving real-world problems
- Taking the long-term view
- Promoting actions that serve the larger good
- Connecting with the community
- Making a difference in the world

Evaluation

This Take Action Project was an excellent project that we undertook in order to expose our students to participate in a worthwhile relevant activity in which they were actively involved in constructing their own knowledge. We strongly believe that exposing our students to this approach in dealing with issues would foster life long learning skills. It was a tremendous experience for us all including our students. We all agree that more planned projects like these can be very beneficial to our students' experience as a student in the primary school as it provides the foundation for their higher education and all round development as a concern citizen and human being in our planet Earth. We strongly recommend this type of exposure to students and it is of our resolve that we encourage other teachers within the level and in the school to join in on projects like these in the future.

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