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THE OZZY OZONE CHARACTER IS A REGISTERED TRADEMARK OF THE GOVERNMENT OF BARBADOS. UNEP WOULD LIKE TO THANK THE GOVERNMENT OF BARBADOS FOR ITS PERMISSION TO USE THIS CHARACTER.


THIS PUBLICATION IS LINKED TO UNEP'S OZONE STRATEGY FOR CHILDREN AND YOUTH.
Our planet earth is defended by Ozzy Ozone and his friends. These small ozone molecules are always ready to protect and help all living beings on earth.

---They became very famous all over the world. Now every time there is a problem, they are called to help.

Ozzy, this is Lucy, the blue whale. The ice in the Arctic is melting up north and my friend Tilmann, the polar bear is sick. Please come help us!
DID YOU HEAR THAT ZOE? WE NEED TO GO HELP THEM.

HURRY, GET YOUR HELMET AND GLOVES.

HEE, WAIT, WHAT IS THIS, A SHIPWRECK?

AH! NO, THAT IS TARA, A BOAT WITH SCIENTISTS WHO GOT STUCK IN THE ICE FOR TWO YEARS ON PURPOSE.

THEY ARE CRAZY, THEY MUST HAVE ICE CUBES IN THEIR HEADS! WHY ON EARTH ARE THEY DOING THIS?

HEY, I SEE A HANDSOME YOUNG MAN ON DECK, LET'S ASK HIM.
HELLO, I AM GRANT, THE CHIEF OF THE EXPEDITION. SCIENTISTS NEED TO UNDERSTAND WHAT IS HAPPENING TO THE ICE IN THE ARCTIC SINCE OUR PLANET IS GETTING WARMER.

WE ARE MEASURING THE SNOW AND ICE LEVELS AND INVESTIGATING THE ATMOSPHERE AND OCEANS--

--TO SEE HOW THE INCREASING TEMPERATURES ARE AFFECTING THE ENVIRONMENT.

WHAT FOR?

WHEN SOMETHING IS UNDER THREAT OR UNDER ATTACK--

THE SAME THING APPLIES TO THE ARCTIC OCEAN...

THE SCIENTIFIC PROGRAMME OF TARA WAS PUT IN PLACE TO BETTER UNDERSTAND THIS IMPORTANT OCEAN IN ORDER TO PROTECT IT MORE EFFICIENTLY AFTERWARDS.

WHAT ABOUT THE CREW? IS IT DANGEROUS TO LIVE ON THE BOAT?

TARA WAS SPECIALLY BUILT TO RESIST TO EXTREME TEMPERATURES--

--SO WE FEEL SOMEWHAT SAFE ON BOARD.

WOW, HOW INTERESTING!

THANKS FOR TELLING US.
Hello, Ozzy, thanks for coming and welcome to Greenland.

Hello, Lucy, this is my friend Zoe.

Nice to meet you Zoe!

For most of history, the air above the Arctic and ice in the glaciers were clean...

Then, in recent years, some strange man-made substances suddenly started appearing here in the atmosphere polluting everything.

The ice and snow have started to melt!

Many polar bears are dying...
There is Tilman!

I feel hot and weak all day, my skin hurts and every time I eat seals I feel terrible!

I have a tummy ache. If that were not bad enough, now the place where I used to live—

---has suddenly melted and I am homeless.

Please tell me what is happening!

The ice in glaciers is threatened because of chemicals that emitted into the atmosphere such as greenhouse gases including chloro-fluorocarbons (CFCs).

Those together are causing severe problems in our atmosphere and stratosphere.

How come?

The temperature of the Earth is increasing due to the high concentration of greenhouse gases such as the CO₂ and methane.

Those gases are emitted by industries, power plants that make our electricity, cars, planes and waste dumps...

What is CO₂?

It is a chemical gas known as carbon dioxide. It is found naturally in our atmosphere and it is produced by almost every living being.
The problem comes when this gas is produced by modern society in big quantities. It goes into the atmosphere and raises the temperature of the planet. This higher temperature threatens life on Earth.

CFCs are substances that destroy the ozone layer, which filters the dangerous UV-B rays that come from the sun; and even make a hole on it.

These ozone holes over the Arctic and Antarctica are enormous.

--Because of CFCs and other ozone depleting substances (ODS).

Where do the ozone depleting substances come from?

Those are gases, including CFCs, that come from some air conditioners, some pesticides and fire extinguishers.

This is the reason why your skin hurts; you have been exposed too much to the UV-B rays, which is caused when CFCs and other chemicals deplete the ozone layer over our heads. This also affects the life of fish and our friend Lucy.

In the past, the problem of ozone depletion and climate change were presented as two different problems. We now know that they are closely related.

Man-made CFCs are also potent greenhouse gases and significantly contribute to global warming.

It's worrying...
I also heard that the water and fish are polluted by chemicals with the funny-sounding name of "POPs" (Persistent Organic Pollutants).

Those are toxic substances that cause adverse effects on the health of people and animals.

POPs get concentrated when big fish eat small fish...

This is also another cause of your sickness, Tilman. The seals that you are eating have eaten fish, which are accumulating in your fat tissue, weakening your body's immune system.

Don't worry. I will prescribe you a treatment based on natural herbs to detoxify and we will find you food you can safely eat. You will recover soon.
WHAT IS CLEAR IS THAT CFCs, GREEN HOUSE GASES AND POPs ARE AFFECTING OUR ATMOSPHERE, OUR LAND AND OUR FOOD AND ULTIMATELY OUR HEALTH.

SCIENTISTS AND GOVERNMENTS NOW ARE TRYING TO FIND WAYS TO ADDRESS THESE PROBLEMS THROUGH THE COORDINATION OF THE MONTREAL PROTOCOL, THE KYOTO PROTOCOL AND THE STOCKHOLM CONVENTION.

WE HAVE ALSO FOUND THAT IF WE CONTINUE LETTING POLLUTANTS ESCAPE INTO OUR ATMOSPHERE--

--ALL LIFE ON EARTH WILL BE SEVERELY COMPROMISED IN THE UPCOMING YEARS.

WHAT? OZZY, ZOE, WE NEED TO DO SOMETHING QUICKLY!

LET'S GO TO ANTARCTICA TO VISIT MY FRIEND CAMILO.

I HAVE HEARD THAT THE OZONE HOLE IS EVEN BIGGER THERE.

MAYBE HE KNOWS MORE.

ANTARCTICA
Hi Camilo! Please tell us what is happening here and what we can do to help reduce the impact of both ozone depletion and climate change.

Listen friends, here in Antarctica, we have a bigger ozone hole than in the Arctic. Also, glaciers on the coasts and ice sheets are melting due to global warming.

But see who else is here to help...

Frank the frog? But, what are you doing here? Frogs do not live in Antarctica!

See my special costume? I am on a special mission as you to help protect the Earth from global warming.

I have been discussing with Camilo different ways to do it.

We have a global problem. It is the climate change, but we have the power to make a change. We act, we don’t just talk.

We control the climate change.

It is true and there is so much we can do. We need to consider how our lifestyle contributes to these environmental problems and assume responsibility for our individual actions. How we live, what we eat, what we buy. We need to make sure that Earth is here in a good condition for the next generation.

By reducing the impact of our personal activities and saving energy in our homes, schools and workplaces, we can contribute a lot to help save planet Earth.

Look there, we have learned some suggestions.
SIMPLE ACTIONS YOU CAN DO YOURSELF WITH THE SUPPORT OF YOUR PARENTS TO REDUCE THE IMPACT OF GLOBAL WARMING AND OZONE LAYER DEPLETION: (PLEASE DISCUSS EACH OF THESE ACTIVITIES WITH THEM AND FIND THE BEST WAYS TO DO IT).

**PLANT A TREE:**
Try to plant a tree at least once a year in your home garden, school or community. This simple action will do that the tree will absorb much carbon dioxide when it is growing. You will help the Earth in this task.

[www.unep.org/billiontreecampaign/](http://www.unep.org/billiontreecampaign/)

**RECYCLE AT HOME:**
Ask your parents to help you design a recycling system at home so you can classify the wastes and recycle materials such as paper and glass bottles.

**AVOID THE USE OF ODS:**
Avoid the use of sprays containing CFCs. Check with your parents the labels of products you buy to make sure they are ozone-friendly. Use also energy-efficient and ODS-free refrigerators and air conditioners. 40% of total electricity produced globally is used in refrigeration and air conditioning equipment, hence energy saved in such equipment would reduce the greenhouse gas emissions.

**REPLACE THE LIGHT BULBS IN YOUR HOME WITH ENERGY SAVING LIGHT BULBS:**
Ask your parents to help you do this. This simple action will save a lot of energy and emission of carbon dioxide. Our family's electricity bill will go down! Recycle the used light bulbs as they contain mercury.
TURN OFF THE AIR CONDITIONER WHEN YOU ARE NOT USING IT: YOU WILL ALSO SAVE A LOT OF ENERGY AND CARBON DIOXIDE WITH THIS SIMPLE ACTION. THE ELECTRICITY BILL WILL ALSO REDUCE!

AVOID HEAVILY PACKAGED PRODUCTS AND PLASTIC BAGS: WHEN YOU GO TO THE SUPERMARKET, TRY TO AVOID HEAVILY PACKAGED PRODUCTS. ASK YOUR PARENTS TO TAKE YOUR OWN BAG TO AVOID THE USE OF PLASTIC BAGS. YOU CAN SAVE LOTS OF POUNDS OF CARBON DIOXIDE IF YOU CUT DOWN YOUR GARBAGE.

USE LESS HOT WATER: IT TAKES A LOT OF ENERGY TO HEAT WATER. YOU CAN USE LESS HOT WATER BY INSTALLING A LOW FLOW SHOWERHEAD AND WASHING YOUR CLOTHES IN COLD OR WARM WATER INSTEAD OF HOT. YOU WILL SAVE A LOT OF ELECTRICITY OR GAS IN YOUR HOME!

BUY RECHARGEABLE BATTERIES: BATTERIES CONTAIN HEAVY METALS, SUCH AS MERCURY AND CADMIUM, WHICH HAVE BECOME A MAJOR SOURCE OF CONTAMINATION.

TURN OFF AND UNPLUG ELECTRONIC DEVICES YOU'RE NOT USING: SIMPLY TURNING OFF AND UNPLUGGING YOUR TELEVISION, DVD PLAYER, STEREO, AND COMPUTER WHEN YOU'RE NOT USING THEM, YOU WILL SAVE A LOT OF ENERGY AND CARBON DIOXIDE A YEAR!
WOW, THERE IS SO MUCH WE CAN DO. WE CAN CREATE AWARENESS OF CHILDREN ON THE IMPORTANCE OF PROTECTING THE OZONE LAYER AND DIMINISH THE IMPACT OF CLIMATE CHANGE BY TEACHING THEM EASY WAYS TO CONTRIBUTE FROM THEIR SIMPLE LIVING ENVIRONMENTS.

WE ALL CAN MAKE CHANGES... WE WILL TAKE THIS MESSAGE ALL OVER THE PLANET. WE HOPE THAT CHILDREN OF THE WORLD JOIN US TO HELP WITH THIS MESSAGE AND SPREAD THE VOICE TO THEIR FAMILIES AND TO THEIR FRIENDS.

BECAUSE WHEN IT COMES TO PROTECTING OUR PLANET EARTH...

EVERY ACTION COUNTS!
DEFINITION OF TERMINOLOGY

ANTARCTICA: A continent in the South Polar region.
ARCTIC: The North Polar region.
ATMOSPHERE: Layers of air, composed of gases and particles, surrounding the earth.
CARBON DIOXIDE, (CO2): Gas formed by burning or rotting of materials containing carbon and by breathing.
CFCs: Chlorofluorocarbons. A family of man-made chemicals that if released destroy the ozone layer.
GLACIER: Glaciers are made up of fallen snow that, over many years, compresses into large, thickened ice masses.
GLOBAL WARMING: Is the observed increase in the average temperature of the earth's near-surface air and oceans.
GREEN HOUSE GASES: Gases that warm the earth by trapping heat in the atmosphere, which leads to global warming. Some greenhouse gases can occur naturally in the atmosphere, while others result from human activities. Greenhouse gases include carbon dioxide, methane, CFCs and others.
HEAVY METALS: Metals of high density which are often toxic to human health.
KYOTO PROTOCOL: The international United Nations (UN) treaty that is helping to fight against global warming and climate change.
MONTREAL PROTOCOL: The international UN treaty that is helping to restore and protect the stratospheric ozone layer.
OZONE: A form of oxygen with three atoms in a molecule; found in the stratosphere as a protective ozone layer ("good ozone"), and also close to the ground as a pollutant in smog ("bad ozone").
OZONE DEPLETION: Destruction of the stratospheric ozone layer caused by the breakdown of certain chemicals (for example chlorofluorocarbons).
OZONE-DEPLETING SUBSTANCES (ODS): A compound that contributes to stratospheric ozone depletion. Those include CFCs, halons, methyl bromide etc.
Pesticides: Chemicals for killing insect pests that damage food crops.
POPs: Persistent Organic Pollutants: Certain chemicals usually found in pesticides that pollute the environment and are especially harmful as they stay around for a long time.
Stockholm Convention: A global treaty to protect human health and the environment from persistent organic pollutants (POPs).
Stratosphere: The region of the upper atmosphere (about 10km to about 50km above our heads) where the ozone layer is found.
UV-B RAYS: Ultraviolet rays: An invisible form of energy harmful to most living organisms.

THE TARA BOAT
IF YOU WANT TO LEARN MORE ABOUT THE TARA BOAT ACTIVITIES, PLEASE VISIT THE WEBSITE: www.taraexpeditions.org AND CONTACT THE CAPTAIN OF THE EXPEDITION, MR. GRANT PEDERSEN AT THE FOLLOWING EMAIL: contact@taraexpeditions.org

FRANK THE FROG
IF YOU WANT TO LEARN MORE ABOUT FRANK THE FROG ACTIVITIES, PLEASE VISIT THE WEBSITE: ano.jersi.org

INVITATION TO ALL CHILDREN
OZZY AND ZOE WOULD LIKE TO KNOW ALL IDEAS AND PROJECTS THAT YOU ARE DOING IN YOUR HOME, SCHOOL OR COMMUNITY TO HELP FIGHT AGAINST OZONE DEPLETION AND CLIMATE CHANGE. WE WOULD LIKE YOU TO WRITE TO US AND BECOME PART OF THE OZZY OZONE FAMILY.

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PROTECT OZZY, OZZY PROTECTS YOU!