

Educational tales

to increase 5-12 years old children awareness of global warming

and to search solutions with them

Special file for teachers and activity leaders

www.contespedagogiques.be
www.educapoles.org

5-8 years old ... 7 tales

8-10 years old ... 4 stories

10-12 years old ... 4 stories

The stories proposed in this file are a tool for the teachers who want to increase their pupils awareness of global warming but also for libraries, workshops, youth groups or families.

The texts are validated by scientist, followed by educational note, crafts and mind games.

They are free of charge and available in French and in English on www.contespedagogiques.be and on www.educapoles.org

In each tale, easy solutions to make are suggested because it's important that children promise to make small gestures to protect the climate. It's also why the characters promise to answer any projects, drawings or children's letters they may receive

- either via Internet professor.sneeze@gmail.com

*- or by post Professor Sneeze C/O M.Dielemans
7, Avenue des Frères Legrain
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Belgium*



5-8 years old

... 7 tales

... with Professor Sneeze

Objectives :

Trough this tales, children will discover that greenhouse effect, global warming, the hole in the ozone layer, glaciers melting, floods and forest fires are due in part to our behaviour.

They will become aware that small changes in daily life to save on energy will help the earth and are more necessary than ever.

They'll also penetrate into the fascinating universe of polar countries, into the way to survive there and will learn some new vocabulary words (nunatak – blizzard – sea ice – ice cap ...)

The Earth has a fever

Theme : global warming

Summary :

A strange phenomenon happens in Rabbitville. The sea moved forward and little waves are hitting the school's door. The inhabitants are astonished and appeal to Professor Sneeze, the village scholar.

No matter how many times he searches in his books, he doesn't understand what is happening. Thus he asks, Chives the seagull to fly above the sea in order to find clues which could put him on the right track.

After several tries, Chives finds that this year, a wasp spent the summer in Greenland. It's unusual because usually it's too cold in this country. So Breackness and Reckless' help, two polar explorers will be necessary. They'll go on expedition to the North Pole in order to bring back samples and ice core that Professor Sneeze'll analyse.

From the little bubbles air prisonned in the ice, Professor Sneeze'll discover that the earth is seriously ill because of the pollution and that she has a fever. It's why the ice melts and the sea level rises.

Very worried about this discover, the Rabbitville inhabitants promise to change their habits to cure the earth.

Suggested activity : *Let's read the titles press !*

- After telling the story, come up with titles which talk about the climate problems in the newspapers. Not to read the articles, it's too complicated, just cut the titles. Individual or group's work following your sensibility.

- On a sheet of paper, ask a child to write some words like for example :

Dear Professor Sneeze,

It's not to worry you a little more but look at what we read in the press !

- Then make stick all the different titles in an artistic way (it's not necessary to have a lot)

- After, finish writing for example :

Since now, each of us promises to take a good resolution for the planet.

- Send all the children drawings to Professor Sneeze C/O M.Dielemans, 7 Av. Des Frères Legrain, B-1150 Brussels, Belgium or via Internet professor.sneeze@gmail.com

- Professor Sneeze promises to answer guiding them to another story.

Sunburn in the ice region

Theme : *the hole in the ozone layer*

Summary :

Professor Sneeze receives on his computer a frightening message about the climate, signed only "T. South Pole". He doesn't like travel but, intigued, he decides all the same to go there to search for "T."

During the travel, he meets someone called Doctor Shrimp. In the South Pole, he finds again his friends Breackness and Recklesswho are helping scientists.

T. is a beautiful scientist who beleives to have problems with her measuring instruments. Professor Sneeze and his friends are going to help her but in reality, the instruments are right and they'll discover a disaster : the earth is hurt, there is a hole in the transparent and unblowed balloon wich protects it. They risk to be burn ...

The situation is so serious that the group decides not to break up but to stay together to form "the club of the ice region". Together they would be stronger and better able to heal the earth's injury.

Suggested activity : *A little polar math !*

In this story, Professor Sneeze and Lady Trumpet resolve a lot of mathematics problems. Let's make like them !

*With handlings, try to resolve a polar sudoku (available on www.contespedagogiques.be mind games columns)
And for the oldest children a polar calculation (same site)*

Then ask the children : « What else can we do like Professor Sneeze ? »

Let's talk the children but get them slowly to gestures to do to protect the planet.

Finish with coloring the animals depicted in the sudoku.

Where are the igloos of Iglooville ?

Theme : *problems of global warming in the Arctic country : the opening up of a sea passage for the oil tankers, the thawing of the permafrost, ... the Kyoto protocol*

Summary :

Breckneck and Reckless, two polar explorers, set off to Iglooville in order to test new material for the coldest part of the winter.

When they arrive, they are disappointed : there are any igloo ,just fat inhabitants spending all the days to eat blueberries which shouldn't be there in the winter. It's so strange they ask Professor Sneeze to come.

And they aren't at the end of the surprises ! They also discover that fishs coming from warm water venture near the sea ice, that oil tanker tries to pass in the middle of the ice sea which melts in order to find a new shorter route and that school's ground collapses.

Professor Sneeze understood it's urgent to react but he knows that alone it's impossible.

He decides then to write a "Code of conduct for saving the planet"and invite everybody to sign it.

It's a succes. Even the Petroville's inhabitants promise.

When the cold finally comes again in Iglooville, everyone builds a beautiful igloo to spend winter except Breckness and Reckless who prefer to go away on the sea ice with their sledges.

Suggested activity : **Create your own "Code of conduct for saving the planet" ...**

Writing with their friends a « code of conduct for saving the planet », our characters want to understand that everyone has to work to save the planet.

It's up to you to convert the « Kyoto protocol » to a scale suitable for your class or group.

Each child should draw or write, according to his age, something that he (or she) promises to do to save energy and thus protect the planet from global warming.

Put the copies together to form a notebook, display it prominently in a passing place or if you prefer send them to Professor Sneeze

All your codes will encourage Breckneck and Reckless to continue their expeditions.

Tears on the other side of the world

Theme : *the melting of the glaciers*

Summary :

At the other side of the earth, in Antarctica, Titel a young snow petrel spins between the icebergs. Suddenly he hears crying ...It's a little iceberg which is worried because it melts too quickly.

Titel wants to help it but he's so alone. Happily he ends up meeting Breackneck and Reckless, two explorers who, touched by the iceberg's sadness, will contact by satellite their friend Professor Sneeze.

But the winter approaches, Breackneck and Reckless are obliged to return to Rabbitville waiting next summer. During this time, Professor Sneeze discovers that all the glaciers across the globe are melting like the iceberg. It's so catastrophic that he wants to go there to understand why.

Breackneck and Reckless, as for them, have the idea to build a base for Professor Sneeze. So he'll be more comfortable to work at the end of the world. Doctor Shrimp, Lady Trumpet and other scientists will also take part in the trip... What they discover is alarming. It's them, with their lifestyle who accelerate the glacier's melting.

To soothe the little iceberg, each one promises to change at least one of his habits.

Suggested activity : *Polar mandalas*

« Hustel our habits » is not easy to do and yet we don't have choice any more : the planet is in danger.

Then, let's take a little time to help children discover the polar countries' beauty showing them nice pictures that make they dream.

Then ask them to color the 2 mandalas you'll find in the crafts column on www.contespedagogiques.be

Choose a place to stick the drawings up ... and while the child will display, ask him what kind of thing he'll promise to do to protect the planet.

Mother Nature's Fury

Theme : flood and biomimicry

Summary :

Sudden torrential rains flood Rabbitville's village.

Missis Pretty, the village teacher and her pupils gone to harvest carrots are only able to return safely to school by using upside down their umbrellas as small boats... as for the house of Doctor Shrimp, it was taken away by a landslide.

Very upset by violence of such disaster while the village makes already much effort to save energy, Professor Sneeze and his friends, in order to fight global warming will take the kids to the observation of nature and the discovery of biomimicry.

Suggested activity : **Let's discover biomimicry !**

- *In the story, Professor Sneeze embarks on a journey of scientific discovery. In trying to find the most effective ways to conserve energy, Professor Sneeze turns to biomimicry. This science studies how certain life forms in nature carry out processes from which we humans can obtain ideas for solving practical problems, particularly concerning sustainable development.*
- *At the moment there is a lot of research going on in the field of biomimicry. Some of the questions researchers are studying include:*
 - *How does a glass sponge living at the bottom of the ocean in Antarctica produce glass at such low temperatures?*
 - *How do termites build their mounds so that it remains cool in spite of high temperatures outside?*
 - ...
- *We hope that, as Professor Sneeze learns in the following story, children will also learn to look at the world around them not just simply with a sense of wonder, but that they will also gain a better understanding of it.*
- *Here is a track to follow:*
 - *Put on the blackboard on 2 rows 10 drawings:*
1st row : a kangaroo, a duck, a bird in flight, cotton seeds and a pinecone
2nd row : flippers, a plane, a parachute, a woman wearing a baby sling, and a tiled roof
- *Following this you could say to the children that in the first row, the pictures are living things you find in nature and in the second row, the pictures are of man-made tools or devices used for certain purposes that look like parts of living things you find in nature. Then have the children match the pictures two by two.*
- *Once the children have finished the exercise, try to have them find other examples of man-made devices that resemble living things or parts of living things you find in nature.*
- *This exercise is available and printable for the child's notebook on www.contespedagogiques.be and on www.educapoles.org*

Will-O-Wisps in the Bear's House

Theme : Forest fires and the urgency to prevent the climate from warming to keep the methane accumulated in the tundra imprisoned in the frozen Polar Regions

Summary :

During the summer a fire ravages the Rabbitville's forest.

Professor Sneeze and his friends take refuge profoundly underground in burrows hastily digged.

When they went out, the distress is so terrible that Breackneck, Reckless and Doctor Shrimp prefer to go far toward the polar countries ... but a fire is also rife in the tundra !

With the help of Missis Pretty and that of Professor Sneeze came to join them, they discover that a potent greenhouse gas is prisonned in large quantities in the frozen ground of the polar countries ... and that is imperative to prevent the climate to warm up in order to keep it prisoner ...

Suggested activity : *let's extinguish the fire !*

The story ends on an optimistic note. Each character secretly makes a wish for the planet. From this sentence, a discussion is possible with the children:

- *In your opinion, what did Professor Sneeze wish for?*
And Breakneck, Doctor Shrimp and Ms. Pretty ...?
- *And you, what would you wish for the planet?*
- *How do you save energy?*
- ...

Let's try to extinguish the fire ...

● *Distribuate to the children a sheet of paper on which a flame is drawn. Inside the flame, having written 4 gestures to do to save energy. For example :*

- *ask to mum to put a lid on the pan when she cooks ;*
- *switch off the light each time we leave a room ;*
- *in the shop, advise mum to buy products from our country and not these which come from a distance by plane ;*
- *switch off computers, television, domestic appliances as soon as we don't need them and not to let them in sleep mode...*

● *Each child colors his flame as he likes (yellow, red, orange), writes his name on it and then cuts it out.*

● *Gather all the flames and stick them on a panel in order to form a big fire. The teacher draws logs under the flames to make the fire real.*

● *Child's mission is to complete 4 gestures written on the flame. When he makes one, he crosses the sentence out. When the 4 sentences are crossed out, he takes the flames off. Little by little, gradually as children make gestures, the fire is going to reduce then to stop.*

● *This symbolically action wants them to understand that at their level, they can yet act for the climate.*

Pahatchi Hatchi

Theme : *The discovery of wave power as well as the existence of a new kind of bear. The crossing between a grizzly and polar bear.*

Summary :

Professor Sneeze looks for a way to produce renewable electricity from the power of the waves. He thought so much that he sneezes constantly, and contaminates the people of Rabbitville

Ms. Jolie the teacher wants to find a solution to this problem. She travels alone into the polar regions in search of an imaginary plant to stop his sneezing. She will meet "Pizzly," a two-tone bear, half grizzly and half-polar ... Fortunately, her friends will help her!

Suggested activity : **Introduction:**

- *After reading the story, show the children a small roll tied with a ribbon (pdf to print, roll and tie) and ask them to guess what it is.*

Answer: This is a copy similar to the old roll of the doctor.

- *Have the student open the roll and show to the class the drawing of the Antytschoo medicinalis*

- *Hang the drawing up and let each child tell what they remembered about this plant.*

Follow-up activity:

- *Now the teacher adds on the drawing of the Antytschoo a brown bear's paw (pdf to print and to cut) and let the children speak.*

If necessary, ask a few questions:

. Whose paw is this? . What is the name of this bear? (Pizzly) . What is special about him? (it has 2 colors) . What does he do?

- *When the name "Pizzly" is said, take down the paw drawing and replace it with the picture of the entire bear. (pdf to print) and write its name.*

- *Then ask the children: Who is its father? (a white polar bear) Who was its mother? (a brown grizzly bear)*

Place the drawing of the grizzly (pdf to print) and the drawing of the polar bear (pdf to print) above Pizzly to form his family tree.

- *Let the children tell what they know about the polar bear. Write the answers next to the drawing. Complete if necessary:*

. It lives on the sea ice, in the tundra in very cold regions near the North Pole. . It swims well. . Its skin is black, its fur looks white, its hair is transparent. . It mainly eats seals and sea animals, but in summer, when he is very hungry, he will also eat birds and their eggs, berries and algae.

. It has a thick layer of fat that protects it from the cold.

- **Do the same with the grizzly:** . It lives in forest and mountainous areas. . It swims well. Its fur is brown, sometimes black or blonde. . It spends his winter sleeping in the warmth of a den. . It eats everything it finds which he can chew (plants, berries, roots, fish, insects, small or large animals). It is omnivorous.

- With its 2 colors, Pizzly looks like both its polar father and its grizzly mom. So why does Professor Sneeze think Pizzly is lying?

Answer: Because normally polar bears and grizzly bears live in different regions and should not meet each other. Professor Sneeze repeats what is written in his books.

- How is it possible that daddy and mommy of Pizzly were able to meet? What did the white hare say?

Answer: The climate is changing and warming up. Everything is upset. The bears are changing their habits and territories, thus meet from time to time in the summer.

- What does panicked Professor Sneeze suggest when he understands that it is global warming causing the changes in the bears?

Answer: He believes that it's absolutely necessary to stop the climate change. He invites his friends to test his invention with him to produce energy without heating the climate, and it is from the waves.

-Have the children explain what this invention looks like: surf boards connected by a special mechanism that move to the rhythm of the waves, thus producing electricity.

If possible, show the children a small descriptive video see below for examples:

<http://www.youtube.com/watch?v=slawyq4PXxE>

<http://www.youtube.com/watch?v=2Q7P-w5BGdw>

<http://www.youtube.com/watch?v=mcTNkoyvLFs>

- Waves are not the only thing that can produce energy without heating the climate. Ms. Jolie spoke of two other well-known ways. What are they?

Answer: The wind and sun

-The sun, wind and waves are used to produce energy without heating the climate. This energy is called "renewable energy". Have the children repeat these words!!!

And what can we do to stop climate change?

Let the children tell some of the things they are already doing with their parents, and finish by saying "we need to save energy."

- To make discover 10 easy actions <http://www.contespedagogiques.be>

Conclusion

If we help Professor Sneeze to prevent climate change by saving energy, we become like him a "Sea Ice Ambassador" and we can put a snow star next to our signature <http://www.contespedagogiques.be> (click on Ambassador)



8-10 years old

... 4 stories

Objectives :

Trough these stories, children will understand that the present way to live wasting energy will have serious consequences on the future generations.

Thus, they'll find the urgency to save on energy and will learn simple gestures they can make themselves.

They'll also take awarness that natural elements like wind, sun and water are able to produce enough energy to make clean electricity.

They will also discover that the Earth has its "moods" or "tempers" and that some natural disasters are not necessarily due to global warming.

Avalak and the Electric Prince

Theme : *renewable energy + to produce your own electricity*

Summary :

Avalak is a very alone and capricious king. His attitude often passes from kindness to terms of abuse.

But he is very rich and for the comfort of his subjects, he provided his kingdom with up-to-date equipments using a lot of energy.

When the energy manager dared to point out that at this rate of consumption, the resources were soon running out, he was dismissed and the king manages himself the three power stations, cutting off the current in each of his anger.

But one day a beautiful siren came to occupy all the king's thoughts ... he even forgot to switch on the power.

Not daring to complain, the inhabitants will have to fend for themselves and Elektrik, a subject with a predestined name is going to find solutions with the help of the wind, the sun and the water ...

Suggested activity : *Let's produce electricity !*

Through this story children discovered that natural elements such wind, sun and water are able to produce enough energy to produce electricity.

From that, to them to do library or Internet research in order to discover other renewable energy (tomato, lemon, potato, ...)

Then carry with them the scientific experiment explained on www.contespedagogiques.be or on www.educapoles.org

Detectives Puisi and Tiphok

Theme : *global warming and drinkable water*

Summary :

Summer 2050... It is abnormally hot in the country of the midnight sun.

Overwhelmed by this heatwave, Puisi and Tiphok, two seals detectives are going to investigate... At the other side of the world, with the help of a magic potion, "The Wise One" will allow them to go back in time ... and so discover a stupefying world where the inhabitants waste energy and water.

Make people aware of their bad habits, make them sensitive to saving energy in order to change the course of events is the difficult mission of Puisi and Tiphok but ...

Suggested activity : *Let's create symbolically the ice floe !*

Ask the children to choose one or more gestures they will do themselves to save on energy and fight against global warming.

- By folding and cutting, to create with them ice crystals in white paper (see craft column on www.contespedagogiques.be).

- Each crystal created will be the symbol of this gesture.

- On a blue base representing the sea, stick every crystals together so the ice floe recreates itself little by little.

The more gestures we promise, the bigger and more beautiful the ice floe.

- Then to put life on the ice floe adding seals and pinguins only created with circles (see craft column on www.contespedagogiques.be).

- !!! If you prefer to draw bears on the ice floe, don't put pinguins !!!

Bears live in the North pole and pinguins in the South pole. They never meet each other.

There are seals in the North pole and the South pole.

A Feast on Thin Ice

Theme : *global warming and starvation*

Summary :

All bets are off in the kingdom of the polar bears ... It's impossible for them to catch seals, their essential food, without the ice. But the sea is melting more and more, starvation threatens them.

Nanouk, the lonely king, will he find the solution ? Do humans also have problems of starvation ? ...

Follow-up Activities:

- *Usually, close to the poles, where it is very cold, the sea freezes and becomes so thick that one can walk on it or be pulled by a dogsleight on it ... We can also drive a snowmobile on that ice. In some areas a plane can land on it. That frozen sea is called "sea ice".*
- *Many animals live on the sea ice: one can spot walrus (but only on the North Pole), seals, polar bears (solely on the North Pole) who indeed like to eat the seals, but can only catch them on the sea ice because in the water seals are much better swimmers than bears and remain out of their reach. There are also penguins on the sea ice (only at the South Pole though) and several kinds of whales or large sea animals.*
- *Do you know how the sea morphs into sea ice?*

First, when the water temperature drops to a bit under 0C or 32F, the sea shapes small pieces of ice that look like pancakes and that are called "pancake ice".

When the temperature drops further the pancakes stick to each other to create a large white sheet of ice that gets thicker bit by bit.

But the sea constantly moves. It breaks the sheet of ice into pieces which then coalesce and then break again etc ... Sometimes ice fields collide and raft over one another. The sea ice moves with the sea, it is ever changing.

- *But the climate is warming up. The sea freezes less and less easily and the sea ice shrinks. The life of the animals is disturbed, leading among other things to starvation for the polar bears.*

- *And yet, there is a solution to fight this climate warming ... we have to save energy.*

Write on the blackboard: "Let us save energy".

- *Do you know actions we could take to easily save energy?*
- *We should let the children speak but we need to correct them so they understand the difference between pollution and climate warming.*
e.g.: to not throw paper on the ground, is good for the environment but does not help the climate warming (although if the paper is being recycled, it will save some paper).

Find 10 easy actions see www.contespedagogiques.be

- *Hang a poster that is all blue (it could be made with a blue paper tablecloth) and say: "Here is a sea without sea ice."*
- *If everyone works hard to save energy, the sea will again be able to freeze and morph into sea ice.*
- *Encourage each child to choose the action among the list of 10 identified earlier that he/she is confident he/she can accomplish to save energy.*
- *Give to each child an ice pancake cut in white paper. To show that he/she truly commits to perform this action, he has to sign his/her name on the pancake, as if it was a contract with the Earth (you may choose to use only one color marker or a pencil to keep the board homogenously colored). Each child will then put the pancake on the poster in the middle of the sea.*
- *Look how the sea ice develops as everyone tries to save energy ... When the poster is finished, add the polar animals.*
- *If we all keep our promises we will help the sea ice to develop again ! ...*

The Tempers of the Earth

Themes : *earthquake, volcanic eruption, tsunami and global warming*

Summary :

On the Island of Flowers, Kori uses her unusual capability of being able to finely perceive each scent, to prepare delicious flower flavoured sweets which she sells every day to the island's inhabitants.

A slightly mysterious polar explorer also lives on this island ...When he gives Kori one of his books, he unwittingly instills in her the desire to discover Ice-Block Island.

On the day of her departure, Kori makes a mistake and gets onto the wrong boat... A long journey begins. From island to island, her travels are fraught with unexpected difficulties which come from nature. Kori will discover and come to understand the different "Tempers of the Earth".

Follow-up Activities:

- *Beforehand, the teacher, with the help of the children, will have collected photographs, newspaper-headlines, books or drawings of natural disasters (volcanic eruptions, floods, landslides, tidal waves or tsunamis, earthquakes, melting glaciers, forest fires, etc..) There will be as many documents as there are children.*
- *Draw two columns on the board, one headed "The Earth's Tempers" written in white, the other headed "Global Warming" in red.*

Note: *Scientists usually show rising temperatures in red. The redder it is, the hotter it is. If necessary, show the children a red liquid thermometer*

- *Give out the documents to the children.*
- *Each child comes to stick their document in the right column. They should explain their choice. If placed in the red column, the child receives a red sticker; if in the white column, a white sticker.*

Note: *Be careful, climate change can affect the frequency and intensity of flooding and forest fires, but floods and fires are not necessarily related to climate change.*

Volcanic eruptions are not caused by climate change, but they can influence it.

- *The teacher then shows the class a world globe or world map. Allow the children to discover the continents, as well as their country.*
- *The children should try to stick their sticker at the correct place on the planet where a catastrophe has happened. For this, reference should be made to the names on their documents, otherwise, ask the class to use their memory. (TV reports, their own reading, their holidays, etc..)*
- *The teacher then explains:*
 - *White dots (natural disasters) are almost all known, but there could be others. Maps and measuring instruments can help scientists to foresee the times and places where there is a risk. Thus, it is possible to monitor the earth's tempers.*
 - *red dots (impacts of climate change) may appear anywhere in the world, and to avoid further ice melting and more floods and forest fires, we have to try to fight against global warming.*
- *Ask the children what to do to fight against climatic warming and to identify energy saving actions.*
- *Allow the children to speak, and write correct sentences on the board.*
- *Then ask the children: "Do you know an island like Ice-Block Island, where Kori absolutely wants to go? What is its real name?"*

First allow them to find clues:

- *nobody lives on the island apart from scientists*
- *there are penguins*
- *there is a volcano*
- *it is very cold*

Answer: Antarctica

(If the children talk about the islands near the North Pole, point out to them that there are no penguins in the North, instead there are bears. Also, the islands are inhabited. The North Pole is not an Island, but a point in the ocean.

- *It is the penguins which touch Kori emotionally, and give her the urge to fight against global warming.*
Then get the children to make the following craft work: "Penguin for a party" www.contespedagogiques.be (link craft then link penguin) and to put messages to save energy between the penguin's paws, just as Kori had done around her ice sweets. (See the sentences on the board.) Suggest several activities, for example, setting the table with decorations for when their grandparents or friends come for a meal, so that they, like Kori, can become valuable ambassadors for the climate.



10-12 years old

... 4 stories

Objectives :

Through these stories, children will discover that the current warming of the climate is unusual and closely linked to the industrial revolution which began in the late 18th century and that man is responsible for this change in the climate.

They will also recognize the major consequences of global warming for people around the world and the urgent need to change lifestyles.

They will learn how the ice analyzed by geologist is a memory of the climate while air bubbles trapped in the ice are memories of the composition of the atmosphere and they will be surprised by how these bubbles have been discovered.

They will also discover that on top of CO₂ produced in part by our energy behaviour there is another greenhouse gas, the methane which is very harmful to global warming because its heating power is 25 times greater than the CO₂. It's produced in part by bacteria and buried in large quantities in the frozen ground of polar countries.

Balbuzard and the keys of the knowledge

Theme :

The anthropocene, that is to say the new period of the Earth's history that began in the late 18th century with the industrial revolution. This word means "era of the human", because since the beginning of this period the excessive way individuals use fossil resources - coal, oil and gas - has impacted the environment and has altered the natural balance of climate.

Summary :

Balbuzard, a young eagle was saved from drowning by Claude, glaciologist who travels by ship to the polar countries of Antarctica where he will spend the winter.

A day, in the white desert, putting in his glass ice cubes taken from the ice cap, Claude noticed that his whiskey sparkles. With amazement, he discovered that air bubbles trapped in ice.

It's a huge scientific discovery that will revolutionize the understanding of global warming!

Analysis of air bubbles reveals a puzzle that will solve Osprey while being Claude aware of three serious consequences of global warming for people around the world ... because the air does not have a border, every little bit makes a place has repercussions across the world...

Suggested activity : *Let's create symbolically the ice floe !*

Ask the children to choose one or more gestures they will do themselves to save on energy and fight against global warming.

- By folding and cutting, to create with them ice crystals in white paper (see craft column on www.contespedagogiques.be).

- Each crystal created will be the symbol of this gesture.

- On a blue base representing the sea, stick every crystals together so the ice floe recreates itself little by little.

The more gestures we promise, the bigger and more beautiful the ice floe.

- Then to put life on the ice floe adding seals and penguins only created with circles (see craft column on www.contespedagogiques.be).

- !!! If you prefer to draw bears on the ice floe, don't put penguins !!!

Bears live in the North pole and penguins in the South pole. They never meet each other.

There are seals in the North pole and the South pole.

+ other information on the website

The Ice Magician

Theme : *Discovery of methane, greenhouse gas produced in part by bacteria and buried in large quantities in the frozen soil of the polar regions. Its warming potential is 25 times greater than CO₂.*

Summary :

It's desolation, this winter in the Inuit village of Angulak : the sea ice has not formed and the seals are gone.

The ice magician awakened after a long sleep realizes he has lost some of its powers and during the story he went looking for the thief ...

A spotted bear, a white orca, a disguised seal, an explorer, the summer home of Santa Claus and a nice story of friendship are the ingredients that lead children to discover the thieves : 2 greenhouse gases (CO₂ and methane) against which the magician is unable to fight.

Only men can fight and restore his powers ... Will they?

Suggested activity : *If I had magical powers!*

- *Following the story we suggest you write on the blackboard the following sentence: "If I had magical powers, I..."*
- *Tell children: « What would you do to find the magician's powers and to encourage people to save energy ? »*
- *Let children talk and let them invent things even wacky, because the magical powers open the doors of imagination children.*
- *Gathering on the backboard each sentences in the form of a poem where each line begins with the same old story « If I had magical powers,I... »*
- *Then going back into reality and writing on the blackboard : « But I am only child who for the moment..."*
- *Give each child a piece of paper and ask individually to write something he can do himself today to fight against global warming.*
- *Sharing ideas then everyone copies the poem written on the blackboard and he finishes with his personal fall.*
- *Then imagine a title and why not send creations to professor.sneeze@gmail.com*

+ *educational resources on the topic on www.educapoles.org*

Mystery ... for Mister H.

Theme : *fiction to discover scientific professions wich will be present in Antarctica*

Summary :

Friday the 13th at 13h 13 '13" a meteorite crashed to earth somewhere.

Mister H., an eminent cosmologist wants to discover it for the study. His search takes him to Antarctica. His road is fraught with pitfalls, because this stone is coveted by others ...

This fiction will enable children to understand the different scientific careers related to the polar regions.

Suggested activity : *Training to become a chief in Antarctica !*

Oral comprehension questions about the text on www.contespedagogiques.be

Then why not training to become a chief in Antarctica? Recipe on the website...

This story is more playful and less related to global warming, just for the pleasure of reading !

The Prince of the Winds and the Sea Snake.

Theme : *Discovery of renewable energy created by the movement of the waves*

Summary :

Wave of panic on Earth! The winds have all disappeared ... Alluaq makes the most of this special climate to set out and explore uncharted lands of Antarctica while Duda ventures alone on the Arctic ice, but ... nothing will go as planned.

The earth will shudder, thrusting Alluaq into the bottom of a crevice in the ice and holding Duda prisoner of a block of ice. The malevolent Mr. Fossil, the Prince of Winds and sea snakes will spice up this story to lead children to discover a new renewable energy generated by the movement of the waves.

Suggested activity :

Introduction

- Show the children a picture of a fossil and ask them what it represents. Allow the children to speak, the word "fossil" and its explanation will come out spontaneously. Write the word "FOSSIL" on the board.

- Take the dictionary to check the exact meaning of the word and stress the fact that it takes millions of years for fossils to form.

Follow-up activity

A. - In the story one of the characters is called Mr. Fossil. What is his job? Allow children to talk about the tupilek that Mr. Fossil built. If necessary, read again § p12 of the PDF to get the exact answer : he extracts and trades in oil, gas and coal.

- Divide the class up into three groups to do research. Pull out several texts from the internet that would enable them to answer the questions and hand them out.

- Ask the 1st group "Where does oil come from?" the 2nd "Where does gas come from?" and the 3rd "Where does coal come from?"

- Sharing answers. Find out and memorise:

"Oil, natural gas and coal develop from the slow transformation of the residue of dead organisms (plants and plankton) over millions of years".

PS: The oil and gas come from the transformation of marine organisms only (plankton i.e. microscopic animals and plants that live in water).

Coal comes from the transformation of plant organisms only.

- Why do we use oil, gas and coal? Allow the children to speak.
- In the story a name is given to these 3 energies. Which one? Answer: fossil fuels.
- If children do not remember, give 3 clues:
 - 1) millions of years ago
 - 2) show the photo of a fossil
 - 3) the name of a character in the story.
- Draw on the board a column with the title "Fossil fuels". Ask a child of each group to come and write the name of a fossil fuel.
- Will there always be fossil fuels if we continue to use them a lot? No
- Why? Because their reserves are limited and it takes millions of years to produce them. They cannot be renewed quickly.
- Help the children find the word "non-renewable" to describe these energies and write it on the board to complete the title.
- Explain to the children that, during millions of years, organic residues were charged with carbon (a chemical substance) in order to turn into energy fossil. This carbon is released into the air as CO₂ when we burn these fuels. But CO₂ is one of the greenhouse gases responsible for global warming and therefore bad for the planet.
- Get a child to write in red under the column of fossil fuels "Bad for global warming" and point out that Mr. Fossil extracts only fossil fuels.

B. - Show a drawing of a tupilek (see story) and ask:

"Why did Mr Fossil build this tupilek?" Allow the children to speak, but lead them to say that Mr. Fossil wanted to make the wind disappear because it is a source of energy that he doesn't use and that is in competition with him

- Ask the children the following questions:

Is the wind a fossil fuel? Why? If it is not a fossil fuel is it loaded with carbon? Is it good or bad for the planet? Why?

Answer: because it is a clean source, it doesn't pollute the atmosphere. It represents a way of reducing emissions of greenhouse gases.

Is its resource limited? ... Therefore, it is a renewable energy (get the children to find the word)

What is the name of windmills that convert wind energy into electrical energy? wind turbines

- Write on the board, in the other column, next to the word "oil" the words "wind" and "wind turbine"

- What other energy would Mr. Fossil like to destroy? Allow the children to speak.

If necessary, read again pdf pg17 to obtain the answer: "the sun"

- Same questionnaire for the sun as for the wind.

- Write on the board the words "sun" and "solar panels" in the correct column.

- Get the children to find a good title for the column... "Renewable energies" "Good for global warming"

C. - Why is Duda furious when she discovers what Mr. Fossil's job is?

Answer: Because Mr Fossil exploits energies that promote global warming and melt down her country of ice.

- And you, do you know what changes are caused by global warming? Allow the children to talk about the animals, plants, melting glaciers...

When they mention extreme natural disasters, tell them that these phenomena have always existed and that global warming only makes them more frequent and more violent.

- What does Duda hope to achieve by keeping Mr. Fossil prisoner?

Answer: That Mr Fossil will give up fossil fuels which are bad for the planet, and that he will invent a new way to exploit renewable energy.

- To make it clear that fossil fuels are bad for global warming, ask the children to cross out in red the names of the 3 fossil fuels written on the board.

D. - What does Alluaq then invent? Allow the children to speak and show them a picture of a "sea snake"

Get them to describe the picture and add details if necessary: 4 iron cylinders connected by oilpumps which are a little like articulations.

- Explain: The waves produced by the wind activate the 4 iron cylinders. Their movement drives the oil pump which converts this movement into electricity with a special mechanism. The electricity is then transferred to earth by the sea bottom.

- In the column for "renewable energy" get the children to write the words "waves" and "sea snakes"

- Do you know of any other renewable energies? Allow the children to speak. If they don't find any, give them a clue by writing the word "water" under the word "waves" ... to get them to come up with the word 'dams' (write the word on the board), hydraulic power plants and water mills.

- Do the same with the word "earth" as a clue ... then explain that the heat of the earth is also a renewable energy used thanks to heat pumps (write the word on the board)

Conclusion

- To memorise all this knowledge on the different energies the children have discovered, build a game: view the link www.contespedagogiques.be (board game Tic Tac Toe Energy)

- Clear the board and hand out the photocopies of the 10 pawns to cut out.

Comment on each drawing ... Take this opportunity to remind the children of the importance of saving energy

- Then go on to the "craft" and play stage.