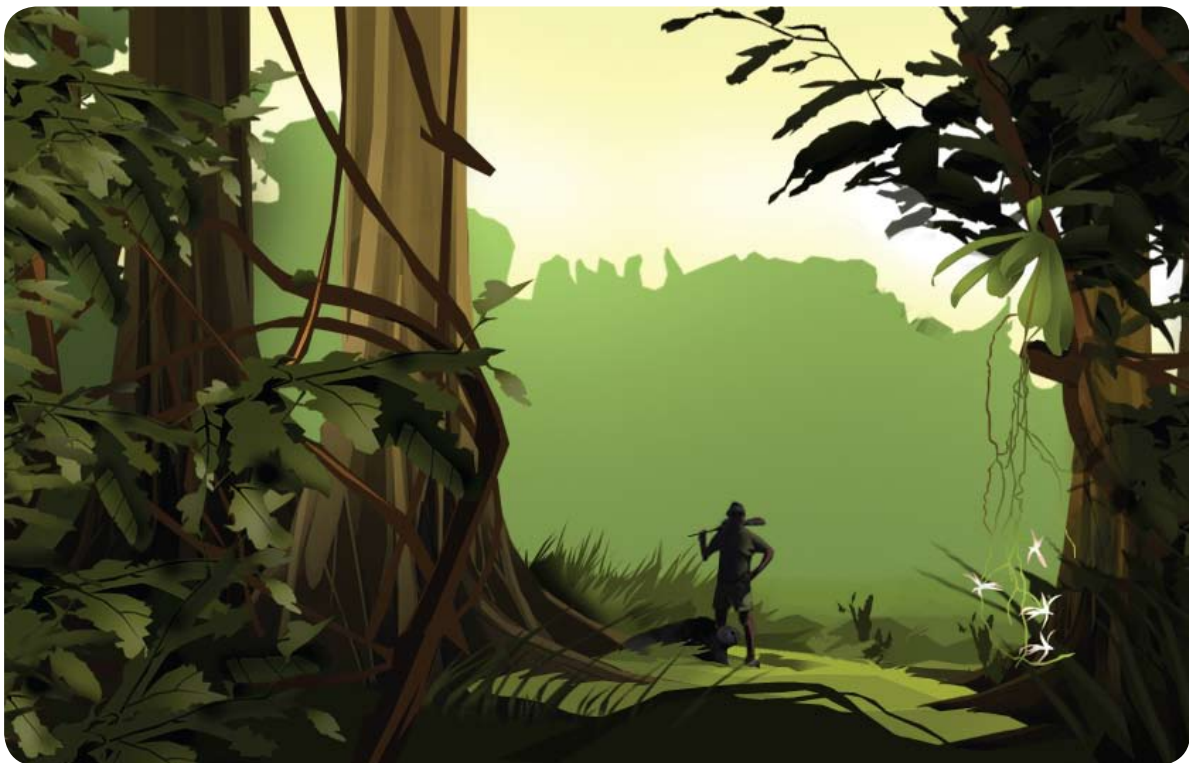




Sheet 1 : Biodiversity

A) DESCRIPTION OF THE ANIMATION

This animation focuses on the concept of “biodiversity” and its importance for human beings. It also draws attention to the various pressures that people place on the natural environment through pollution, growing urbanisation, the destruction of animal habitats, excessive use of natural resources, the introduction of non-indigenous species that become invasive – and so on. All of these threats represent a serious danger to biodiversity, particularly when they are combined with some sort of other occurrence phenomenon, such as human-induced climate such as the changes to our climate being caused by human activities.



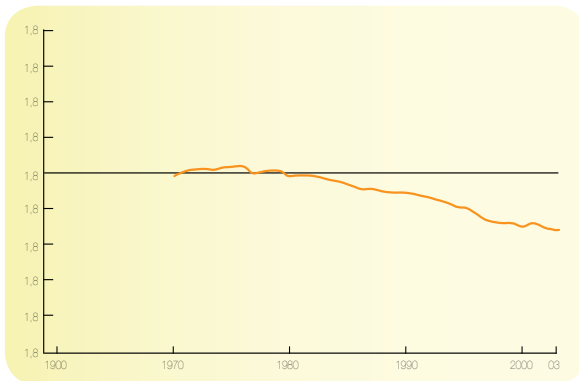
Sheet 1 :

Biodiversity

B) LET'S TAKE A CLOSER LOOK...

BIODIVERSITY IN FREEFALL: ALARMING FIGURES

The growing presence of human beings in most habitats or ecosystems has changed the existing ecological equilibrium. Man is responsible for the extinction of numerous species, as well as for causing an unprecedented level of damage to biodiversity.



The Living Planet Index (LPI) created by WWF enables us to measure changes in biological diversity. The LPI tells us that between 1970 and 2003, biodiversity fell by 30% .

If we continue at the present rate, approximately 12% of birds, 25% of mammals and at least 32% of amphibians will be faced with extinction between now and 2100.

The speed at which species are dying out has accelerated out of control and is currently happening at a rate not seen since the dinosaurs became extinct. In fact, the current rate of extinction has "probably multiplied by a factor of over 1000 on a global scale compared with the 'natural' rate observed over the course of the Earth's history" .

Growing concern over this rapid erosion of biodiversity and recognition of its importance for mankind led to the adoption in 1992 of the Convention on Biological Diversity being adopted in 1992.

The aims of this worldwide treaty aims to achieve :

- to achieve the conservation of biodiversity and its

- sustainable use;
- the fair sharing of the benefits gained from using genetic resources.

CLOSE-UP ON AN ECOSYSTEM RICH IN BIODIVERSITY: TROPICAL RAINFORESTS

Forests are vital for life to be sustained on Earth. They hold a reserve of abundant species and fulfil a whole series of essential functions :

- they stabilise the soil and stop it from eroding;
- they prevent flooding by capturing the water and releasing it gradually;
- as the forests grow, they soak up absorb carbon dioxide (CO₂) ;
- they produce oxygen;
- they maintain thermal balance on the Earth's surface and regulate the cycle of rainfall.



©: Congo Brent Stirton - WWF-UK

The tropical rainforests produce raw materials, generating resources in firewood that supply around 300 million people with energy; they also provide a whole series of non-woody forest products, such as fibres, resin, latex, fruit and traditional medicinal products.

The rainforests are also essential for the genetic improvement of plants. In Mexico for example, a type of wild corn that is resistant to the main viruses has been discovered in wooded areas. As a result, this corn has become an important genetic resource used in corn improvement programmes. The forests also play a major role as a source of new pharmaceuticals used in the fight against cancer and other serious diseases. The periwinkle found in the forests of Madagascar, for instance, has enabled scientists to design a drug that is showing very good results in

Sheet 1 : Biodiversity

the treatment of leukaemia.

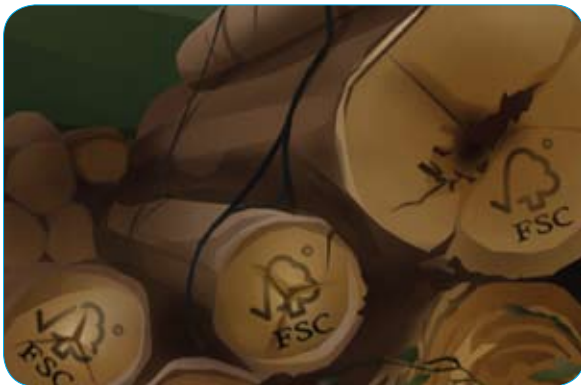
But for all that, 15 million hectares of tropical rainforest are destroyed every year – the staggering equivalent of 36 football fields every single minute!

Towards sustainable forestry management

Forestry is one of the main causes of deforestation. According to estimates made by the World Bank, this activity is responsible for the disappearance of 20% of the world's rainforest.

The FSC Label

FSC certification provides a constructive approach to forestry and tree-felling, by combining social, environmental and economic interests.



The FSC (Forest Stewardship Council) has developed 10 general principles and criteria for responsible forestry management. When owners of forest land want to apply for certification, they are required to have an audit carried out by an independent inspection body.

Every stage of the timber-handling process (sawmill, importer, dealer, etc.) is audited by an independent body before certification is granted. This traceability guarantees that any FSC-labelled timber bought comes from a forest managed in line with FSC criteria.

Agro-forestry

Agro-forestry is a process that consists of bringing together trees and crops or livestock on the same plot of land. A number of agro-forestry projects have succeeded in boosting crop yields by 25 to 100%. by using m Multipurpose trees are used to stop soil erosion and improve fertility levels by creating a microclimate that is favourable both to crops and livestock.

Sheet 1 :

Biodiversity

C) GROUP ACTIVITY TO BE CARRIED OUT IN CLASS

A DIFFERENT CLIMATE FOR EVERYONE

Aims

- to learn about the diversity of species
- to match different climate zones with the corresponding flora and fauna

Equipment

- 30 "animals" and "plants" cards in plastic sleeves with a piece of string threaded through the corner and hung round the neck (see examples in the box below describing the activity).
- 4 climate cards:
front: climate type name (temperate, polar, desert, tropical) + photo to show what it is
back: features of the climate
- 1 large map of the world
- several dictionaries
- 1 buzzer /1 whistle

Timing

50 minutes

Process

Preparation – 5 minutes

Place:

- A "climate" card in each corner of the classroom (polar, desert, tropical and temperate)
- The map of the world close to the blackboard
- An "animals" and "plants" card on the back of each pupil

Step 1:

Game – 15 minutes

- All of the pupils are given an animal or plant card that they can't see because it is hanging down their back.
- Each child then moves around the classroom and asks questions to the other children to try and guess who he/she is. The other pupils can only answer these questions by "yes" or "no".

After 5 minutes

- Those pupils who have not yet found the answer can ask for clue 1

After 2 minutes

- Those pupils who still don't have an answer can ask for clue 2
- Once all of the pupils have found out "what" they are, they then head for one of the corners of the classroom where there is the name of the climate type they think they belong to (example: a polar bear to the polar climate, a plantation of banana palm trees to a tropical climate, etc.)

Sheet 1 :

Biodiversity

Step 2:

All together - 20 minutes

- Check that each member of the group is in the "right" place, in the right climate (if there is any discussion, use a dictionary to find out)
- Place each climate on the big map of the world and locate countries that represent those climates

Step 3:

Conclusion - 10 minutes

Summarise:

- There are countless forms of life on Earth (including human beings)
- And they all differ according to the climate they live in: which means they are climate-dependent. Examples of questions for rounding off the conclusion:
 - Could a polar bear live in a tropical rainforest?
 - Could a palm tree grow at the North Pole?
- Establish the link with the occurrence of climate change. What is likely to happen in each climate? And what will happen to the animals and plants that live in those climates?

Creating the animal/plant cards:

- Make two sets of 15 cards, each representing an animal or a plant. Each card has 2 clues, as well as one or more photos showing the species.

Example:

- 1) Photo of a camel: Clue 1: I sometimes help people travel through the desert - Clue 2: I have two large humps on my back filled with stored fat - Answer: I'm a camel
- 2) Photo of a cactus. Clue 1: I am a plant that is able to resist heat and drought very well - Clue 2: People don't like getting too close to me... I've got spikes! Answer: I'm a cactus
- 3) Photo of a parrot. Clue 1: I am a very colourful bird - Clue 2: I make all sorts of different sounds, and I can even learn to talk!!! Answer: I'm a parrot
- 4) Photo a banana palm. Clue 1: I am a tropical fruit tree - Clue 2: My fruit is yellow and long. Answer: I'm a banana palm tree
- 5) Photo of a penguin. Clue 1: I am a funny looking bird: I can swim very well, but I can't fly - Clue 2: The biggest one of us is called an emperor. Answer: I'm a penguin
- 6) Photo of a date palm tree. Clue 1: I am a fruit tree that grows around oases. For some people, I represent holidays. - Clue 2: My fruit is delicious... They are called dates! Answer: I'm a date palm.
- 7) Photo of a deer. Clue 1: I have a set of big horns called antlers that I use to fight for females in the mating season - Clue 2: I live in the forest and my offspring have speckled markings to camouflage them better. Answer: I'm a deer
- 8) Photo of an oak tree. Clue 1: Squirrels stock up with my fruit for the winter! - Clue 2: The mistletoe that grows in my branches was cut using a golden billhook by the Gallic druids. Answer: I'm an oak tree

Sheet 1 :

Biodiversity

- 9) Photo of a wild boar. Clue 1: I am related to the pig - Clue 2: My offspring are all stripey. Answer: I'm a wild boar
- 10) Photo polar bear. Clue 1: I am all white and live in the far north on the pack-ice - Clue 2: I am one of the main species threatened by climate change. Answer: I'm a polar bear
- 11) Photo of an orang-utan. Clue 1: I get around from tree to tree using creepers - Clue 2: I have a reddish-orange colour from head to foot! Answer: I'm an orang-utan
- 12) Photo of a scorpion. Clue 1: I hide under stones and lots of people are afraid of me for the poison in my tail - Clue 2: My sting can sometimes kill, but I am also represent the image of a sign of the zodiac sign! Answer: I'm a scorpion
- 13) Photo of a seal. Clue 1: I live mainly in the polar regions - Clue 2: I am hunted by polar bears and Inuits. Answer: I'm a seal.
- 14) Photo of a chameleon. Clue 1: I'm a reptile that changes colour so that I can as to camouflage myself better. - Clue 2: I have a very long tongue that I unroll out quickly to catch insects. Answer: I'm a chameleon.
- 15) Photo of a man. Clue 1: I'm a funny animal that gets around on two legs. Clue 2: Your father is one. Answer: I'm a man.

D) RESOURCES/ REFERENCES

- The climate is us, WWF Belgium, 2006. This file can be downloaded in pdf format from:
http://www.wwf.be/_media/BookWWFProf_fr_889149.pdf
- Living Planet Report, WWF-International, 2006. This file can be downloaded in pdf format from:
http://www.wwf.be/online_publications_2/living-planet-report/LPR_2006_FR.pdf
- Living beyond our means: Natural assets and human wellbeing, Board of Directors of the Millennium Ecosystem Assessment, 2005. The report can be downloaded in pdf format from:
www.millenniumassessment.org/documents/document.441.aspx.pdf
- Summary in French of the scientific consensus report from the CDB (Global Biodiversity Outlook 2). This summary can be viewed in French at:
<http://www.greenfacts.org/fr/perspectives-mondiales-biodiversite/index.htm>
- About the FSC:
<http://www.wwf.be/boisdurable/problemes/index.htm> .
- File aimed at young people for tropical rainforest:
http://www.wwf.be/fr/juniors/doc/dossiers/dossier_forets-tropicales.htm .
- The database of teaching tools provided by the Idée Network:
<http://www.reseau-idee.be/outils-pedagogiques/>

