

# Scientists and Inventors

Science Topic – Spring 1

Lesson 1 - Wednesday 13<sup>th</sup> January

# Madagascar in Danger



## **Aim**

- I can explore deforestation and conservation in Madagascar.
- I can set up an enquiry to find out about soil erosion and report on my findings.

## **Success Criteria**

- I can investigate the effects and dangers of deforestation in Madagascar.
- I can explain how Gerald Durrell helped to save Madagascar's living things.
- I can set up an enquiry into the effects of soil erosion.
- I can describe and explain my findings.

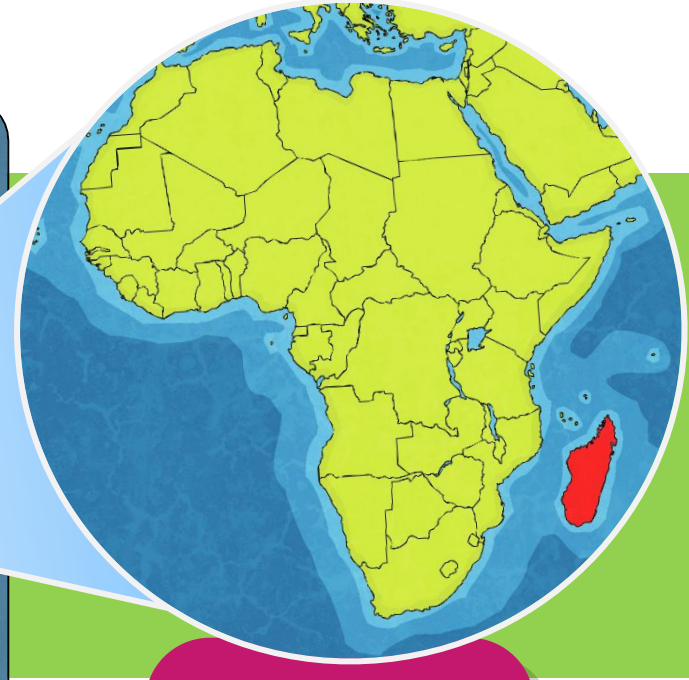
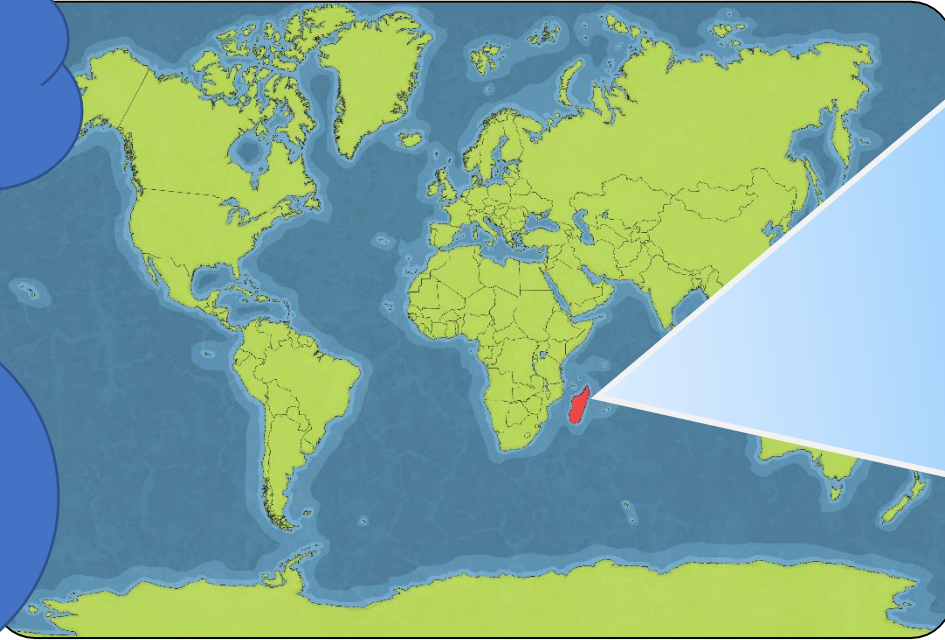


# Madagascar

Map of the World

Do you think  
Madagascar is in  
the Northern or  
Southern  
Hemisphere?

Can you  
spot the  
UK?



Madagascar  
is here in red.



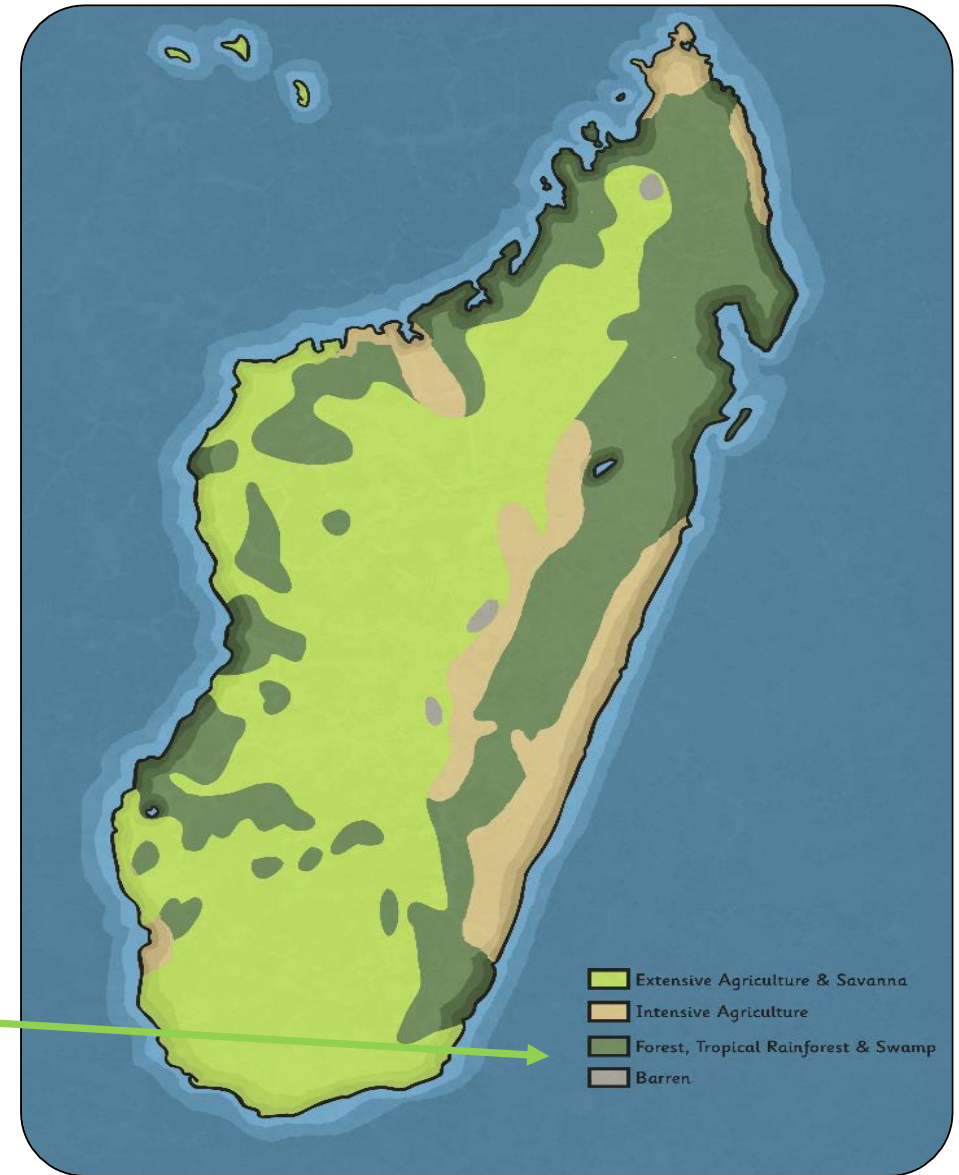
# Madagascar

Madagascar is an island that lies approximately 400km off the south-east coast of Africa.

This island formed around 160 million years ago, and is the fourth largest island in the world.

Madagascar has several different landscapes and geographical areas.

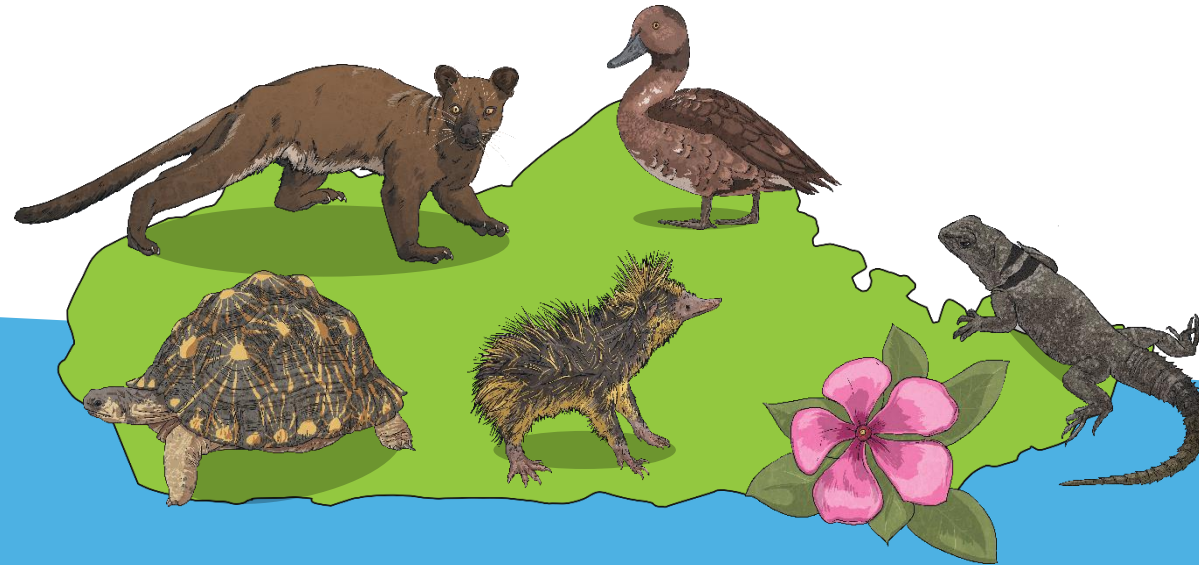
Look at the key to see what each colour on the map represents.



# Madagascar

Madagascar has been an island for many millions of years. The plants and animals found in the forests of Madagascar have evolved and changed differently from living things on other land masses such as Africa or India.

This means that Madagascar is home to many plants and animals that are found nowhere else on Earth. As many as 90% of the living things on Madagascar are thought to be endemic - this means that they are unique to Madagascar.



# Madagascar

These species of plants and animals are only found on Madagascar.



Darwin's orchid



Grandidier's  
baobab tree



aye-aye



fossa



panther chameleon



lemur



# Conservation

Unfortunately, many of the plants and animals that live on Madagascar are becoming endangered. This means that they are at risk of becoming extinct.

Some scientists and conservationists have set up conservation areas to try to save these animals.

A conservationist is a person who works to protect and care for the environment and living things.

Gerald Durrell was a conservationist who worked hard to save Madagascar's unique plants and animals.

But what dangers do the living things on Madagascar face?





# Deforestation

Many people who live in Madagascar rely on farming for their food and their livelihood.

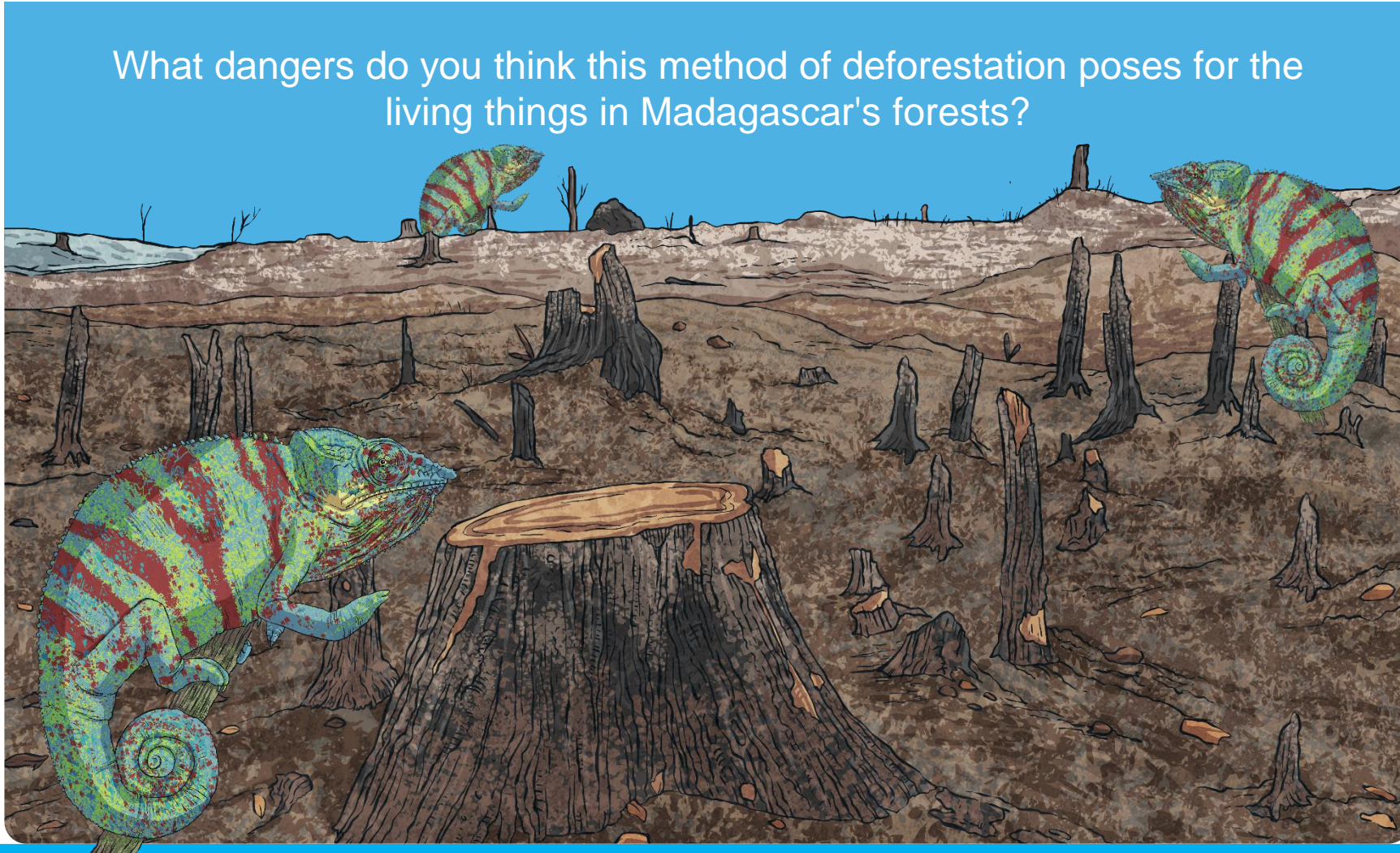
In order to make space for fields, people cut down the trees in the tropical forests. This is known as deforestation.

The people use a technique called 'slash and burn'. First, trees are cut down for wood use. Small trees are planted in their place. A few years later, these trees are cut down to make charcoal. The next year, the plot of land is burned, and a crop of grass is planted.



# Deforestation

What dangers do you think this method of deforestation poses for the living things in Madagascar's forests?





# Explaining Dangers

When the trees of Madagascar's forests are cut down and burnt, this causes the soil to drain away into rivers and lakes when it rains. This is called soil erosion. Nutrients in the soil are washed away too, so any soil left behind is very poor and plants and trees will not grow back.

This is leading to something called desertification in Madagascar. This means that the areas of the rainforest that are deforested will not grow back, and are turning into deserts.

The animals and plants that live in the forests of Madagascar will have no habitat and no food to eat. They are in danger of dying out.

Around 20 species of animals in Madagascar, including lemurs, are critically endangered. This means that these species are in imminent danger of extinction.



# Gerald Durrell and Conservation

- Gerald Durrell was born in India in 1925, and was an English conservationist.
- He worked hard to conserve the endangered species of Madagascar.
- Gerald Durrell founded the Durrell Wildlife Trust and the Jersey Zoo, which is now called the Durrell Wildlife Park.
- He set up his own zoo in 1959 especially to look after endangered animals from around the world.
- He made several expeditions all over the world to find endangered animals and bring them back to his Wildlife Park in Jersey, where he cared for them and set up breeding programmes so that these species could successfully have young.





# Gerald Durrell and Conservation

Once Gerald had a base for his animals and his work, he founded the Durrell Wildlife Conservation Trust to run international conservation programmes.

He also opened a training centre at the Wildlife Park, to teach scientists about conservation. Over a thousand biologists and conservationists have attended training at the Durrell Training Institute.

In 1990, the Durrell Wildlife Trust established their conservation programme in Madagascar.



# Gerald Durrell and Conservation

After Gerald Durrell's death in 1995, the Durrell Trust continued to work in Madagascar, and the Durrell Conservation programme in Madagascar is now the Trust's largest programme in the world.

The Durrell Trust runs eight main conservation sites in Madagascar, and they work with local people to develop more sustainable farming methods.

The Durrell Trust focuses on the most endangered species on the island, including the aye-aye, lemurs, the angonoka tortoise and the Madagascar pochard (a species of duck).



Read through the previous slides again about Gerald Durrell and his conservation work.

- Makes some notes about key events in his life and his main achievements.

### Independent Task:

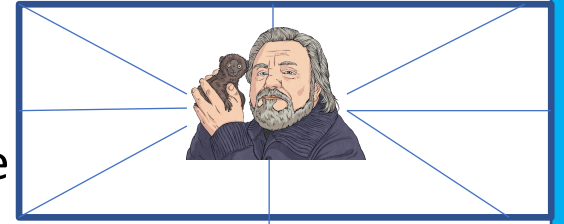
#### Make a rainbow biography about Gerald Durrell.

1. Write 'Gerald Durrell' or draw a picture of him in the centre of your page
2. Draw lines (**with a ruler!**) to make sections to write in.
3. Use the information you have to write a key fact or event in each section.

**Remember to do this in chronological order!**

(Starting with his birth and ending with his death)

4. Colour in each section a different colour.

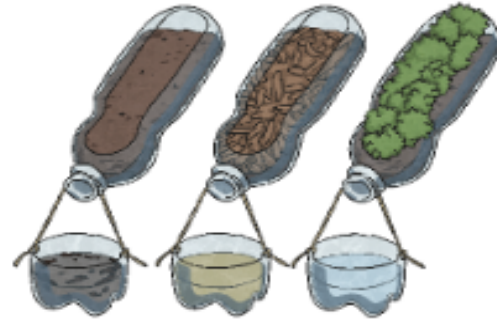


# Investigating Deforestation

I can investigate the effects and dangers of deforestation in Madagascar.

## You will need:

- 3 plastic bottles with a rectangular hole cut in the side
- 3 bottom halves of plastic bottles with 2 small holes in opposite sides
- 3 25cm lengths of string
- Compost
- Seedlings or small plants
- Mulch such as bark, dried leaves or twigs



1. Place the three plastic bottles on their sides, with the rectangular holes facing upwards. Make sure that the bottle neck sticks out over the edge of the surface they are placed on.
2. Keeping the lids of the plastic bottles on for now, place the same amount of compost in each plastic bottle. Don't fill the bottles too high - the level of the compost should be just below the opening of the neck of the bottle. Pack the compost down well.
3. Leave one bottle like this. This will be bottle C.
4. Add a layer of mulch to the second bottle. This will be bottle B.
5. Plant the seedlings in the third bottle. Make sure they are very tightly packed together when you plant them, and that the compost is firmed down. This will be bottle A.
6. Take one of the bottom halves of the bottles. Thread a piece of string through the holes and knot it at each side so that it forms a handle like a bucket. Repeat for the other 2 bottom halves of bottles.
7. Unscrew the lids of bottles A, B and C. Hook one of the buckets you have made over each open bottle neck.

## Optional Activity:

If you would like to carry out an experiment to explore the effects of deforestation further, follow the instructions.

You may need to collect the resources over the next few days.

The following activity sheet (on the next slide) is useful for you to evaluate what the outcome of the experiment was and consider why this was.

You can print both sheets off from the home learning page or copy them down.





# Investigating Deforestation

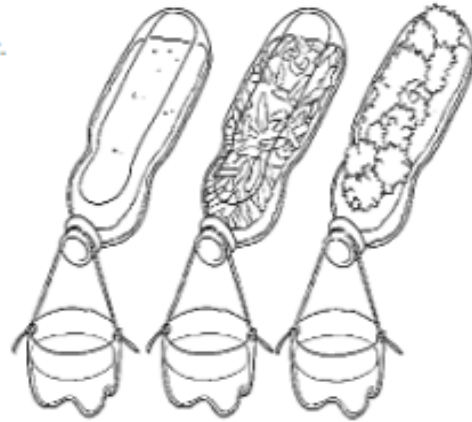
You are going to pour the same amount of water into bottle A, B and C. Bottle A is full of plants, just like the tropical rainforest. Bottle B has a layer of mulch, like the forest floor when the trees have just been cut down. Bottle C has no plants or mulch, and represents the area left when all the trees have been completely cut down and burnt.

What do you think you will see in each of the buckets when you pour water into the bottles?

Bottle A	
Bottle B	
Bottle C	

Try it! Pour the same amount of water into each bottle. Pour the water into the opposite end from the neck of the bottle.

Draw a picture of what you see in each bucket.



What do you notice about the differences between each bottle?

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Can you give a reason for this?

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You can print both sheets off from the home learning page or copy them down.



I hope you enjoyed learning about deforestation and the incredible conservation work that takes place and is so important in caring for our planet!

Enjoy the rest of your day Year 4!