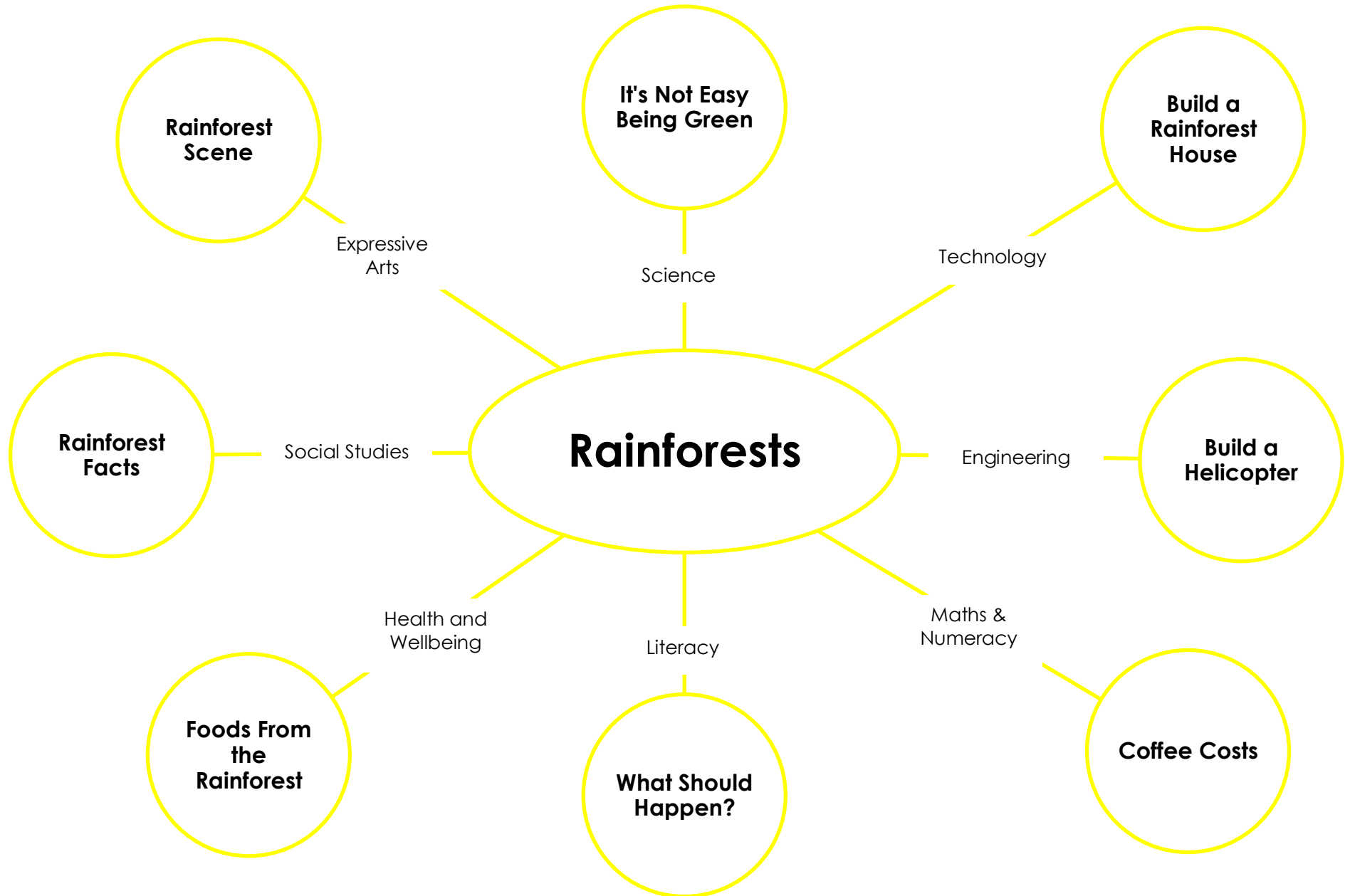




Learning from Home



Science Challenge



It's Not Easy Being Green

The rainforest is full of trees and plants. Plants, just like animals, need food to survive.



Your Task: Investigate why a green leaf needs chlorophyll to stay healthy.

You Will Need: black paper (sugar paper works well), indoor potted plant with green leaves, scissors, paper clip, tape

Note: Make sure the plant you use is alive. If you use a fake one, not a lot will happen. Make sure you are allowed to do this experiment on the plant.

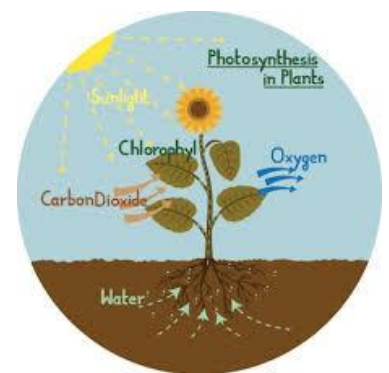
Instructions:

1. Cut 2 pieces of black paper big enough to cover one leaf on the plant.
2. Sandwich the leaf between the 2 pieces of paper
3. Clip the paper at the top and tape the sides.
4. Make sure that the leaf doesn't get any sunlight.
5. Wait for 7 days.
6. Uncover the leaf. Does it look different compared to the rest of the plant?

The Science:

If plants don't get sunlight, they can't make chlorophyll. Chlorophyll is the chemical that gives leaves their green colour. Without sunlight, the green pigment gets used up. It can't be replaced in the leaf, so you end up with a leaf that loses its green colour and finally dies.

Some plants like venus flytraps, can eat insects for food but most plants can't. Most plants use water, carbon dioxide gas and sunlight to help them make food but to do this they also need chlorophyll. This process is called **photosynthesis**. Plants also release oxygen (the gas we need to breathe) as a byproduct of photosynthesis.



After about a week without the covering, the leaf should turn green again.

Technology Challenge

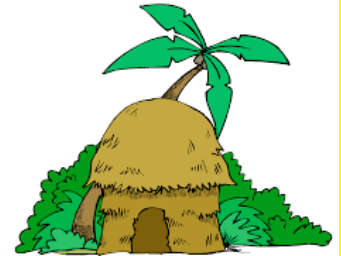


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Build a Rainforest House

There are several different tribes of people who live in rainforests, and they use natural materials to build their homes.

Tribal people's houses are generally communal structures made from wood, mud and clay, bamboo and straw. Sometimes these round huts can accommodate up to 400 people!



Task: Create a rainforest house using clay.

Note: If you do not have clay you could use another material such as plasticine or as an alternative, you could make your own salt dough but make sure you **ask an adult** for help first. **Click here to find out how:** <https://www.toucanbox.com/activities/making-salt-dough-at-home>. You could create the house outside using mud.

You Will Need: clay (or another material like plasticine), old chopping board, modelling tools, rolling pin, dried beans, split peas, shell pasta, leaves and flower heads, lollypop sticks, matchsticks, small bowl of water, pebbles

Instructions:

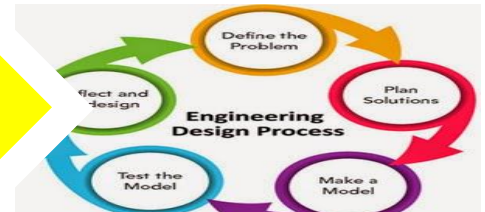
- 1. Create the floor of your house.** Get a palm sized piece of clay, press into the chopping board.
- 2. Now make the walls.** Roll out a rectangular piece of clay, curl it into a circle and place it on the base slab upright.
- 3. To attach the walls,** rub a little bit of water on the surfaces that need joining.
- 4. Cut out doors and windows** using the modelling tools.
- 5. Create the roof.** Make an ice cream cone shape using the clay (same method as the walls)
- 6. To finish,** add the pasta, beans, lolly sticks, leaves etc. to decorate.



Activity and images from earthcubs.com via TES

Clipart from www.clipart-library.com

Engineering Challenge



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Build a Helicopter

Rainforests aren't the easiest of places to get to. Explorers will often fly to the edges of a rainforest in a helicopter. This is also how extra supplies may be delivered quickly.

The Brief: Design and build an eco-friendly helicopter using only paper and paperclips.

You Will Need: A4 sheet of paper, paper clips, scissors (with adult supervision)

Build It - Step1: Take a piece of paper and make three cuts as shown in the illustration. Then fold the paper in on itself at the bottom half – use a paper clip to keep the sides together.

Step 2. Fold the two halves of the remaining paper away from each other, to form the helicopter blades.

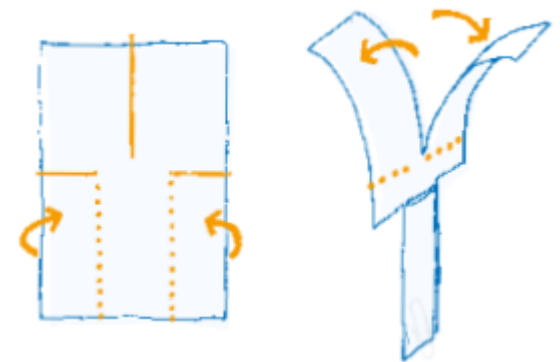
Test It: Stand carefully on a chair and drop your helicopter, making sure it stays upright as you let go!

Reflect: Does your helicopter fly? Do you think the design works well? Could you make it fly better and for longer?

Improve it: Use any points raised in your reflection to improve the design of your helicopter.

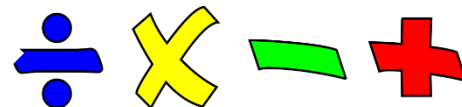
Extension:

1. Have a go at building helicopters of different sizes – does size make a difference to how well they fly?
2. Use different materials to build helicopters – you could try cardboard, cloth material, sandpaper, foil...or any other materials you have at home. Which work best?



Activity adapted from and image from www.jamesdysonfoundation.com

Maths & Numeracy Challenge



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Coffee Costs

Coffee is a beverage brewed from the roasted and ground seeds of the tropical evergreen coffee plant. Coffee is one of the three most popular beverages in the world (alongside water and tea) Coffee beans were first discovered in Ethiopia, a country in Africa. Traditionally, coffee was grown in the shade of the rainforest canopy. (Upper layers of tree tops)



Task: Look at the information in the table below which tracks the costs involved in obtaining coffee from its source to someone being able to buy coffee here in Scotland. Complete the table. Look at the percentage column showing the **Share of the Price** and convert each into fractions and decimals. Simplify wherever you can. Then imagine the price is £1, 10p and 20p – work out the amount that goes to each partner in the supply chain.

There are some examples of how to convert percentages (%) to fractions and decimals below and the first row of the table is done for you.

$$\text{E.g., } 7\% = \frac{7}{100} = 0.07 \quad 25\% = \frac{25}{100} = \frac{1}{4} = 0.25$$



Supply Chain	Share of the Price	Fraction	Decimal	If Price of Coffee: £1	If Price of Coffee: 10p	If Price of Coffee: 20p
Coffee Picker's Wages	5%	$\frac{5}{100}$ $\frac{1}{20}$	0.05	5p	0.5p	1p
Producer	10%					
Exporter	5%					
Importer	20%					
Tariffs	15%					
Processing	10%					
Price (to the buyer)	35%					

Info and photograph from www.britannica.com
 Clipart from www.clipart-library.com



Literacy Challenge



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What Should Happen?

Task 1: Read the two points of view below and discuss each with someone at home. If you had to choose one side, which side would it be? Why?

Logger

These are the reasons why I need to cut down the trees:

- *I need money to feed my family.
- *The wood is used to build houses and to make items to sell. This helps the community.
- *Many areas that are cleared have had new trees planted.

Tribe

These are the reasons I need to protect the rainforest:

- *The rainforest is our home, and it has been for generations.
- *I need the forest to gather food and for shelter and medicine.
- *We protect the trees and animals. Many animals lose their homes, and some could become endangered or even extinct.



Task 2: Write a report (at least a side of A4 long) persuading a family member to support whichever side you have chosen. Look at the table below to remind yourself of the features of a persuasive text.

Title shows what the text is about. Often uses "How...or Why..."	Opening paragraph introduces the topic or idea.
Cause and effect conjunctions (joining words) logically link points to supporting facts / details.	Final paragraph (conclusion) links back to the opening paragraph to sum everything up.
Only one side is discussed – don't mention the other side's opinion or argument.	Each point is explained , and details given to back up your argument.
Rhetorical questions (which don't require an actual answer) are often used.	Strong / emotive adjectives make it harder for the reader to disagree. E.g., "They are being <i>destroyed!</i> "
Ambiguous phrases (e.g., probably, almost certainly etc.,) are used.	Present tense verbs are used. E.g., "I am pleading..."

Activity adapted from earthcubs.com via TES

Image from <https://en.wikipedia.org/>



Health & Wellbeing Challenge

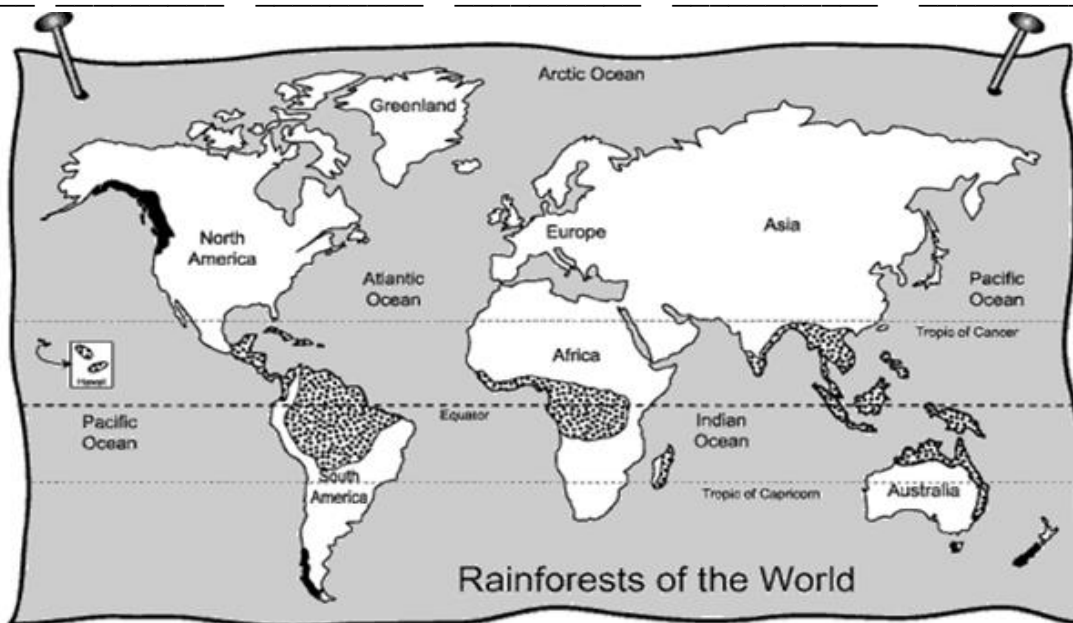
Foods From the Rainforest

At least 80% of the food we eat originates from the rainforests of the world. Fruits like avocado, coconuts, oranges, lemons, bananas, pineapples, mangoes and tomatoes can all be found in the world's rainforests, along with vegetables such as sweetcorn and also nuts such as brazil, cashew and macadamia. Many spices such as vanilla, ginger and cinnamon are also grown in rainforest plantations.

Task 1: List three foods **you** eat that come from the rainforest? _____

Task 2: Click here to look at an interactive food map which shows where our foods come from: <https://blog.ciat.cgiar.org/origin-of-crops/>

Task 3: Now label each food product below and draw a line from each one to the countries where they are grown.



palm oil

vanilla

avocado

bananas

mango

cinnamon

Activity from: <https://livingrainforest.org/> Images from www.clipart-library.com Map from TES

Social Studies Challenge



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Rainforest Facts

Find the answers to the questions below by carrying out your own research. You could use books and / or the internet. When you're done, you'll know much more about how special our rainforests are.

What does deforestation mean?

Where is the largest rainforest in the world?
(Highlight your answer)

- a) The Philippines
- b) The Congo Basin in Central Africa
- c) Peru
- d) The Amazon Basin of South America

Fill in the blank: One environmental consequence of deforestation is _____. This happens when heavy rains wash nutrients from the soil.

What percentage of remaining rainforests are located in the Neotropics? _____%

Fill in the blank: Indigenous people _____ in the rainforest. They depend on the forest for their food, clothing, medicine, cooking and building materials.

What percentage of the rainforest has South America lost? _____%

Why did El Salvador lose 70-85% of its rainforest in 1984-1985?



If rainforest the size of two football fields is destroyed every second, how many football fields are destroyed in 5 seconds?

True or False: Rainforests contain over half of all plant and animal species in the world? **(Circle your answer)**

True False

Name two things you can do as a person to try and stop deforestation.

- 1) _____
- _____
- 2) _____
- _____

Name two consequences of deforestation:

- 1) _____
- _____
- 2) _____
- _____

Activity and images from earthcubs.com via TES

Expressive Arts Challenge



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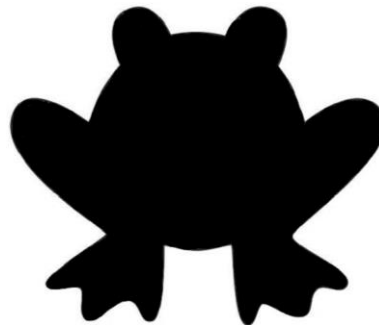
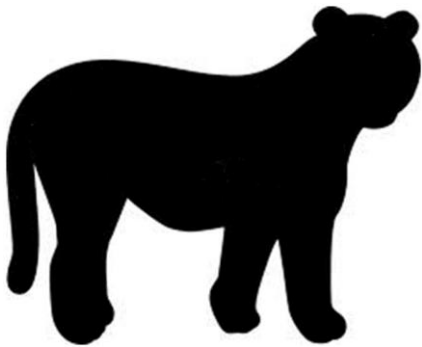
Rainforest Scene

Task: Create a rainforest scene. Focus on the **shape** of your animals but use pattern and detail for the background.

You Will Need: templates of any rainforest animal, sugar paper (different colours), glue, coloured felt tips, scissors (ask an adult for help if you need it), ruler

Instructions:

1. With your coloured felt tips, draw around the templates below or draw your own (as big or small as you like) onto bright colours of sugar paper. You may want to use other rainforest animals - there is a vast choice!
2. Cut your shapes out.
3. Glue your shapes anywhere onto another coloured piece of sugar paper. Fill in the spaces between animals with lines and dots! Use a ruler to draw your lines.



Activity and images from TES