

# Welcome to GCSE Geography



Where will it take us today?

# TOPIC 4- SUSTAINING ECOSYSTEMS

*BY THE END OF THIS UNIT, YOU WILL KNOW THE FOLLOWING*

***WHY SHOULD TROPICAL RAINFORESTS MATTER TO US?***

- 1. WHAT BIODIVERSITY EXISTS IN THE TROPICAL RAINFOREST (TRF)*
- 2. WHAT THE DISTINCTIVE FEATURES OF THE TRF BIOME ARE*
- 3. WHY THE TROPICAL RAINFORESTS ARE BEING 'EXPLOITED' AND HOW THIS CAN THIS BE MANAGED MORE SUSTAINABLY*
- 4. CASE STUDY: sustainable rainforest management*



# Topic 4: Sustaining Ecosystems

The link between human wellbeing and ecosystem wellbeing is vital.

**This is what we will be exploring in this session:  
nutrient, energy and water transfer in TRFs**

## **Know**

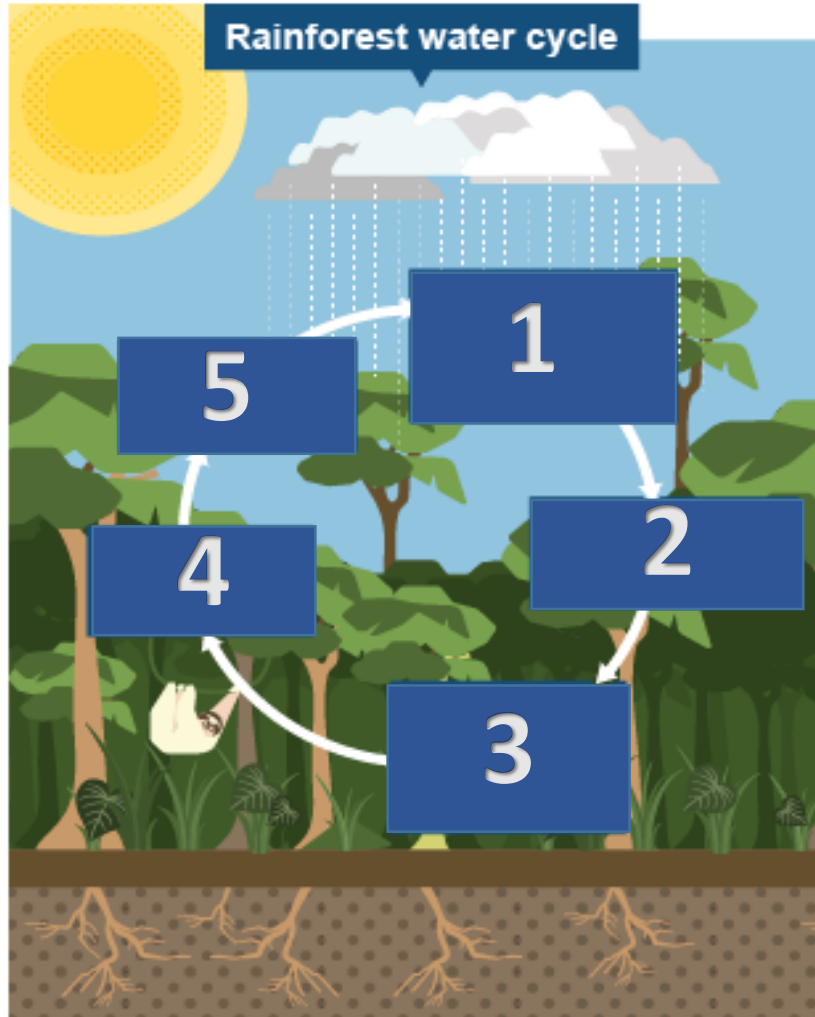
What the nutrient, energy and water cycles in a rainforest ecosystem are like

## **Understand**

Why they are like this and what the future might hold



# TRF water cycle



Trees intercept the rain

Water evaporates

Trees take up water

Some rain reaches the ground

Heavy daily convective rainfall

1. Why does it rain so much?
2. What sort of rainfall does this bring?
3. How is this helpful to the ecosystem?
4. How is this potentially harmful to the ecosystem?

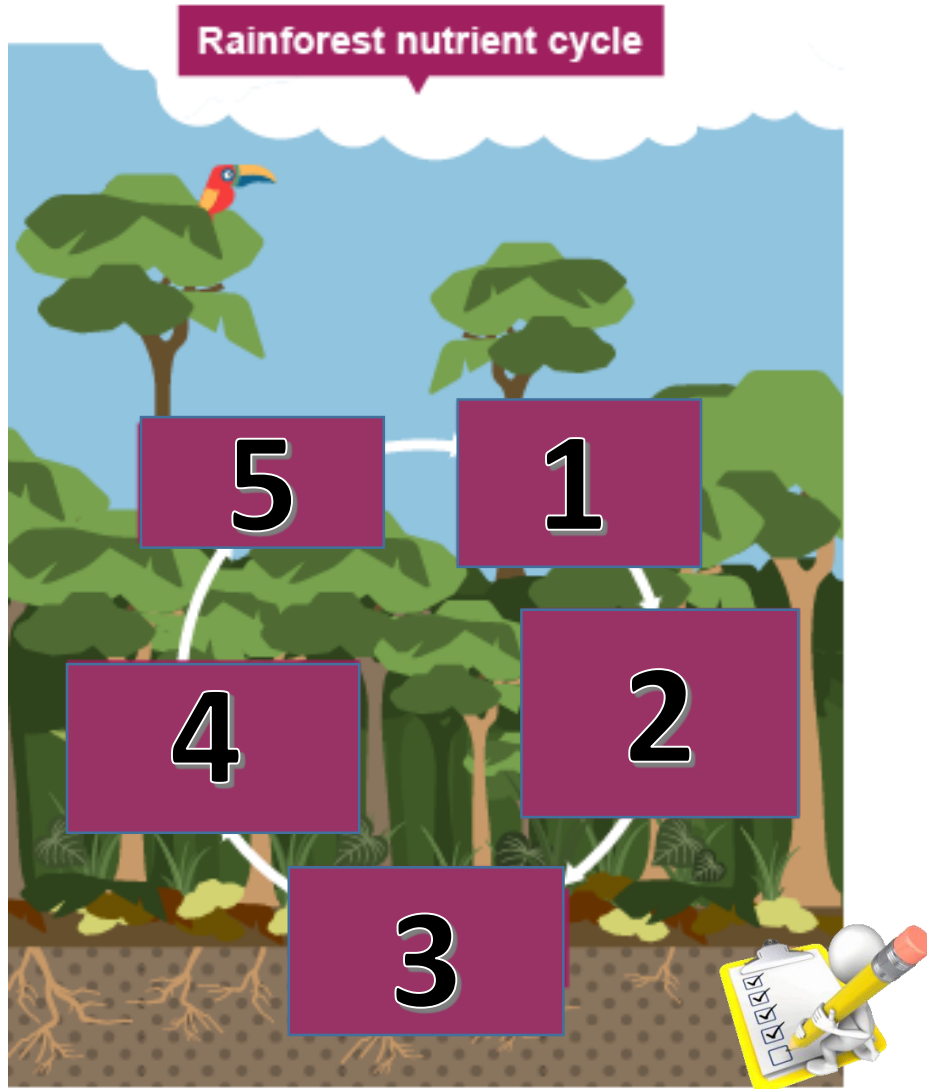
**Know** How the water cycle in a rainforest operates

**Understand** Why this is

come  
get it!



# TRF nutrient cycle



Nutrients enter the soil

Trees grow rapidly

Decaying vegetation decomposes rapidly

Trees shed leaves all year round

Shallow roots take up the nutrients

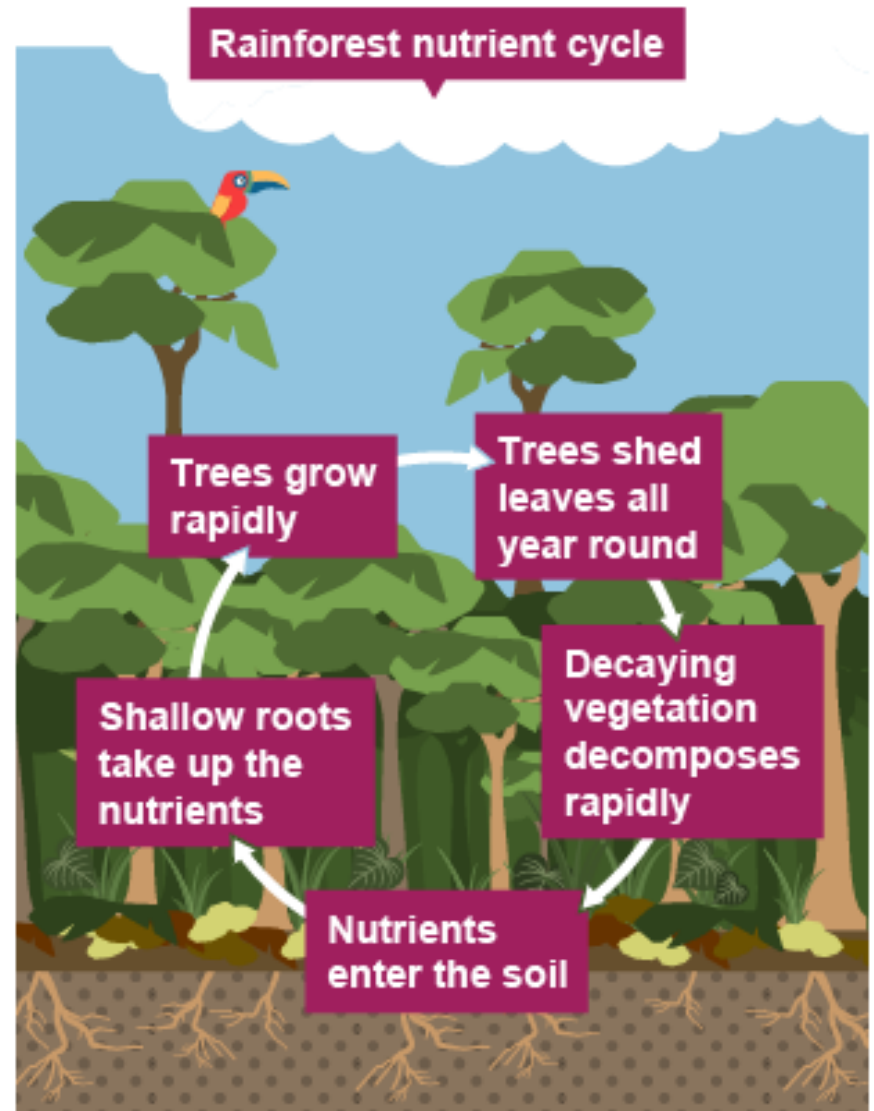
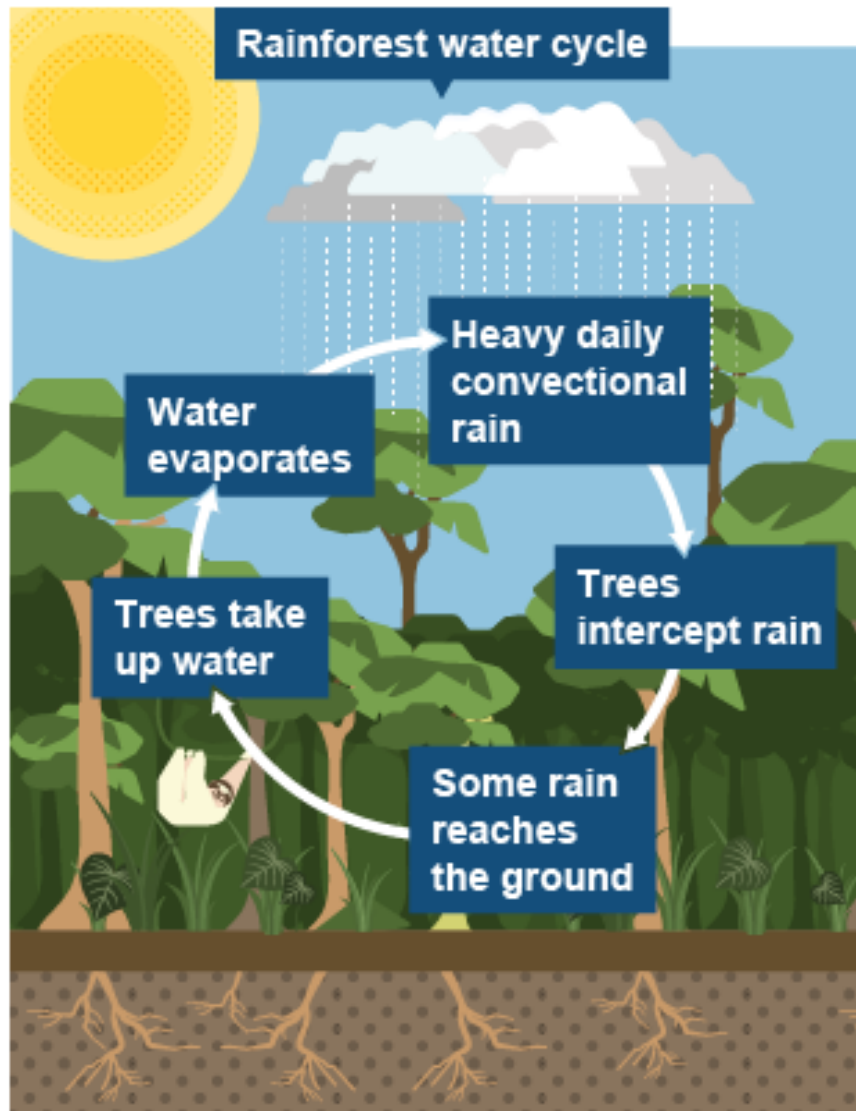
come  
get it!



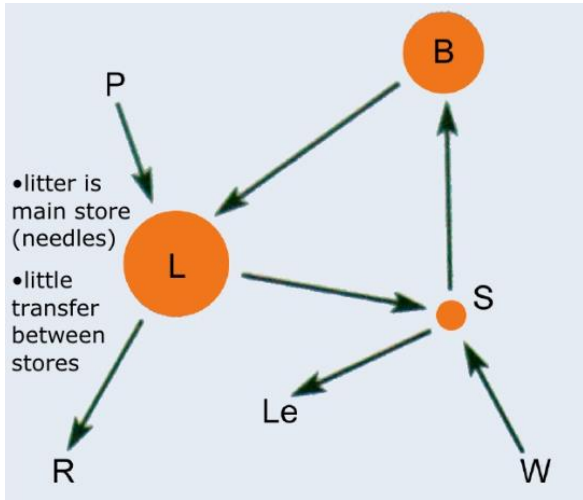
**Know** How the nutrient cycle in a rainforest operates

**Understand** Why this is

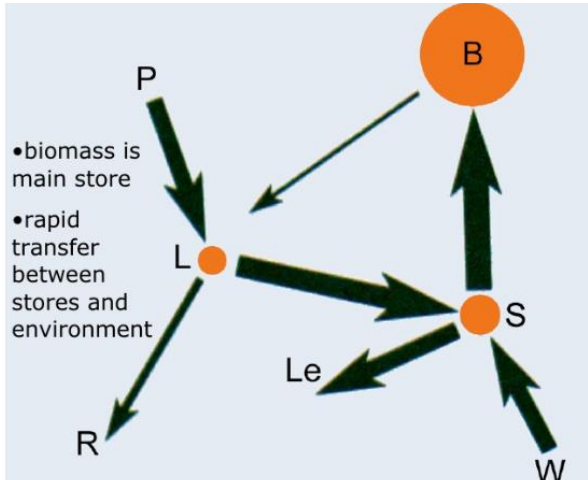
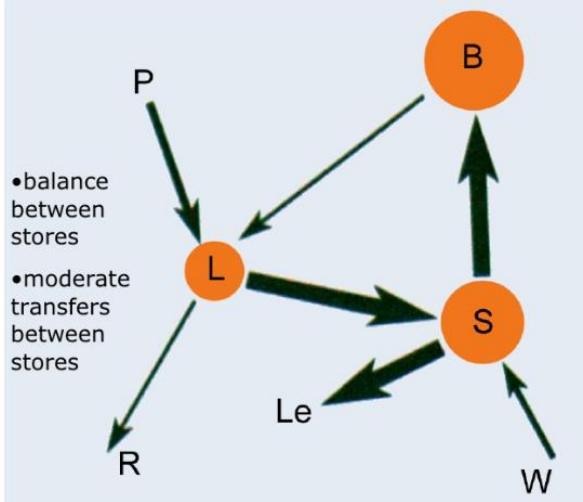
# The Answers!!!!



# TRF: Nutrient Cycling – which of these is the nutrient cycle of the tropical rainforest biome?



Can you match these nutrient cycles to the correct forest biomes?



**Choices:** temperate; boreal (coniferous) and tropical rainforest

come get it!

**What might the desert and the polar nutrient cycle look like?**

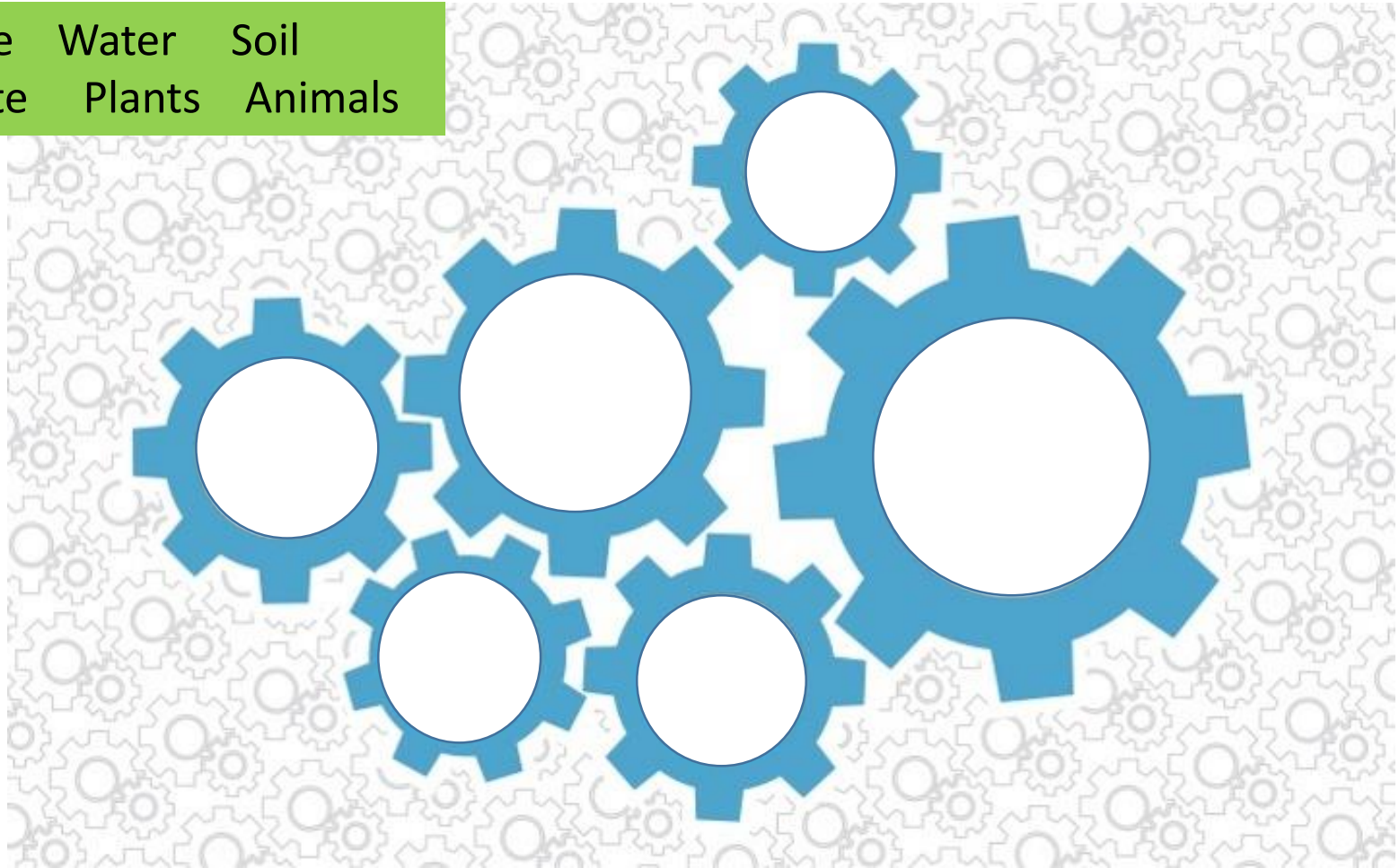


**Know** How the nutrient cycle in a rainforest is different to other forest biomes  
**Understand** Why this is



# Biome futures depend upon the workings of all the parts

People Water Soil  
Climate Plants Animals



**MUST:** Label the cogs – clue – size is relative to importance

**SHOULD:** Explain your thinking



# Consolidation

EASY:

Identify 2 inputs

Identify 2 outputs

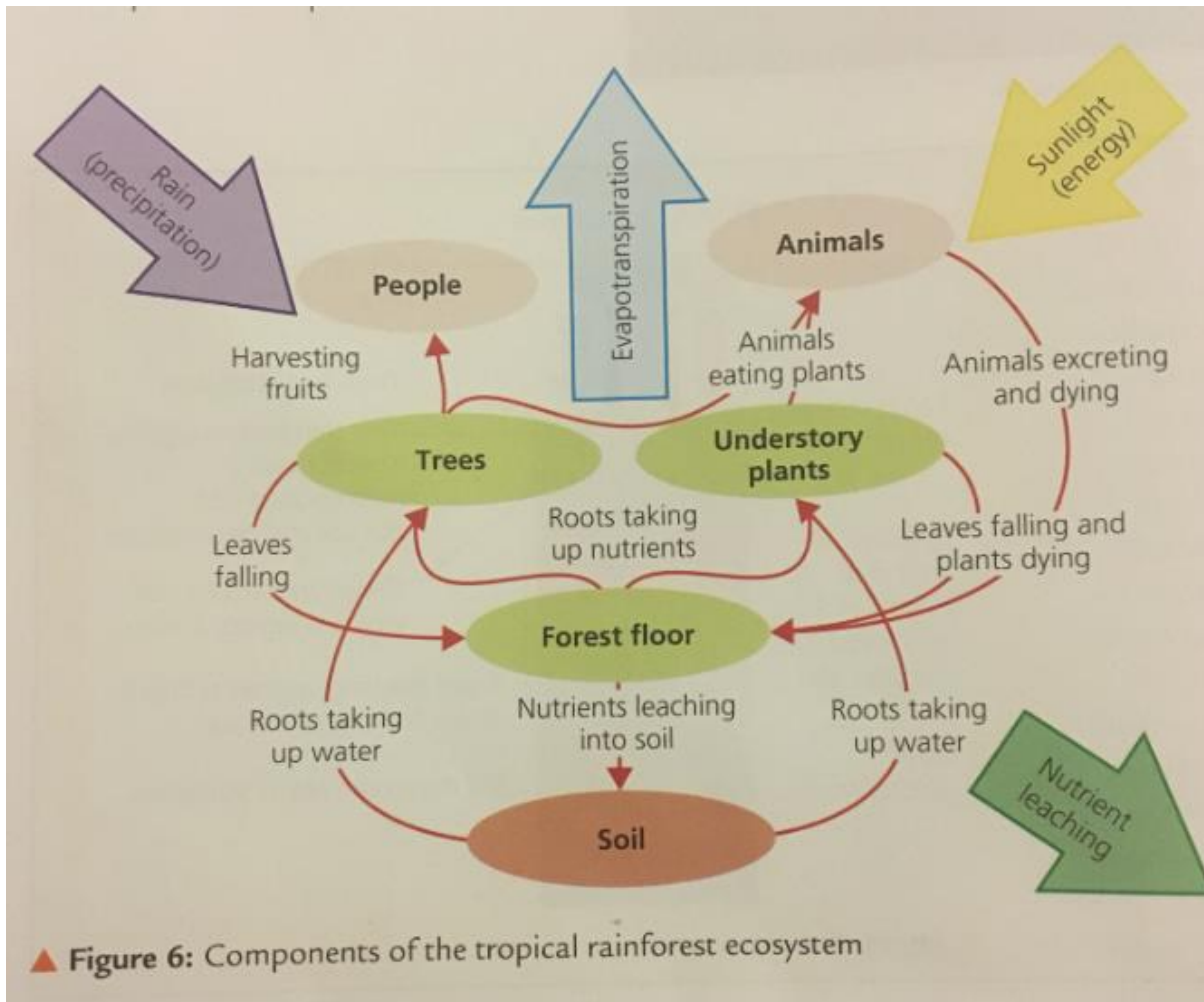
TEASER:

What 'I' is shown by this diagram?

CHALLENGE!!

What if .....

a) Half the trees were removed?



<p>What name is given to the plants that use trees for support eg they grow in the tops of the branches? a) epiphyte</p>	<p>How long is the growing season of the TRF? a) 12 months</p>
<p>What type of rainfall does the TRF get? a) convection</p>	<p>What name is given to a plant that clings on to other plants and lives off them a) parasites</p>
<p>What are the tallest trees called and what layer do they stick out of? a) emergent; canopy</p>	<p>Not many shrubs/small trees grow in the under storey because there isn't enough ..... a) light</p>
<p>Chopping the trees down in a rainforest causes soil erosion and flooding – T or F? a) True</p>	<p>What 'b' describes the roots of the tallest rainforest trees? a) buttress</p>
<p>Why don't trees put their roots down into the soil? a) They want to grab the nutrients before other trees do and the soil isn't very fertile</p>	<p>What does the canopy protect the soil from? a) Leaching and baking</p>
<p>How tall do trees grow to in the TRF? a) 50metres plus, some get to 85m!</p>	<p>What are the temperatures like in the rainforest? a) 26 degrees+; pretty constant</p>