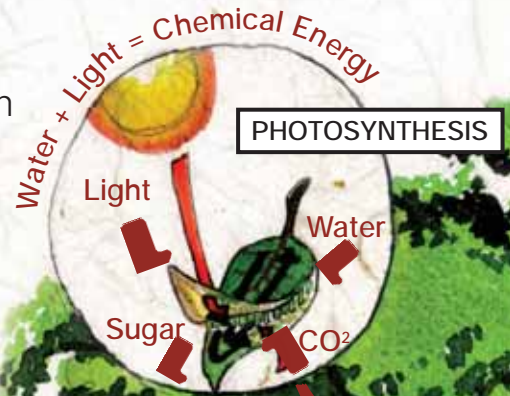


FORESTS FEED THE RAIN

The process of transpiration is a vital part of the water cycle. Water is taken in from the soil by the roots of trees, pulled up through the xylem cells of the plant right into the leaves, and then released as water vapour through tiny holes called stomata. Plants need transpiration to bring water to their leaves for photosynthesis, to deliver nutrients for leaf growth, and to keep leaves cool in the hot sun. In large forests, transpiration actually feeds water to the sky, supplying part of the rain, which in turn supplies the roots. Scientists studying the largest rainforest in the world - the Amazon in South America - believe that if it was cut down, rainfall would drop so dramatically that the forest could not grow up again. Trees also protect the land beneath from the heat of the sun, the cool of the night, and the fierceness of the wind. We need forests to keep the local climate stable.



PLANT A TREE BY A ROAD

Trees make the air sweeter. They actually filter the air, removing polluting gases and particles pumped out by cars as they travel down roads. We need trees to cleanse the air of lung-damaging nitrogen dioxide (NO₂), sulphur dioxide (SO₂), ozone (O₃), and carbon monoxide (CO). They also absorb noise, making the pavement a nicer place to be!

TREES HELP PREVENT CLIMATE CHANGE

Trees are so brilliant they can even help solve one of humanity's most serious problems.

By photosynthesis, they absorb the carbon gases which are released by burning wood, oil, gas, and coal.

This means that trees are on our side in the battle against global warming (See page 144). When forests are burnt and do not regrow, even more carbon dioxide ends up in the atmosphere. Economists calculate that every hectare of rainforest burned down will end up costing us \$1,300 every year in damages due to climate change.

Governments and private companies are realising how bad climate change, biodiversity loss, and damage to watershed will be for business. Now, there are more and more international projects involving "Payment for Ecosystems Services". In these projects, people who live near forests get paid for protecting the globally important resource that happens to be on their doorstep. We all need trees to keep Planet Earth's weather stable.

