

BIODIVERSITY

THE VARIETY OF LIFE ON EARTH

Brings economic benefits
such as tourism



Provides basic ingredients
for medicine



All of our food comes from biodiversity.
From the plants that feed us and our
livestock to the bees that pollinate them



Encourages physical
exercise



Opportunities for people of all
ages to explore and learn



The building materials
for our houses



Reduces stress
and aids relaxation



The materials for
our clothes



Brings economic benefits such as tourism



Nature based tourism in Africa generates approximately the same amount of revenue as farming, forestry and fisheries combined.

But while we think of Ecotourism as jetting off on safari to Africa, many people from around the globe travel to Wales to see our natural landscapes and wildlife. This supports local economies and raises the profile of an area.

Visitors flocked to Porthmadog in 2004 to see the first pair of breeding Ospreys in Wales. This attraction now brings in people from all over the UK where they spend their money on accommodation, food and services.

All of our food comes from biodiversity. From the plants that feed us and our livestock to the bees that pollinate them



Everything we eat (with the exception of salt which is a mineral) is biodiversity. As well as the plants and animals that we eat we also depend on insects to pollinate our crops.

Biodiversity helps by:

Controlling pests –

natural predators including wasps and birds reduce pests such as aphids.

Pollination –

crops all over the world are pollinated by insects, birds, bats and other animals.

Healthy soil –

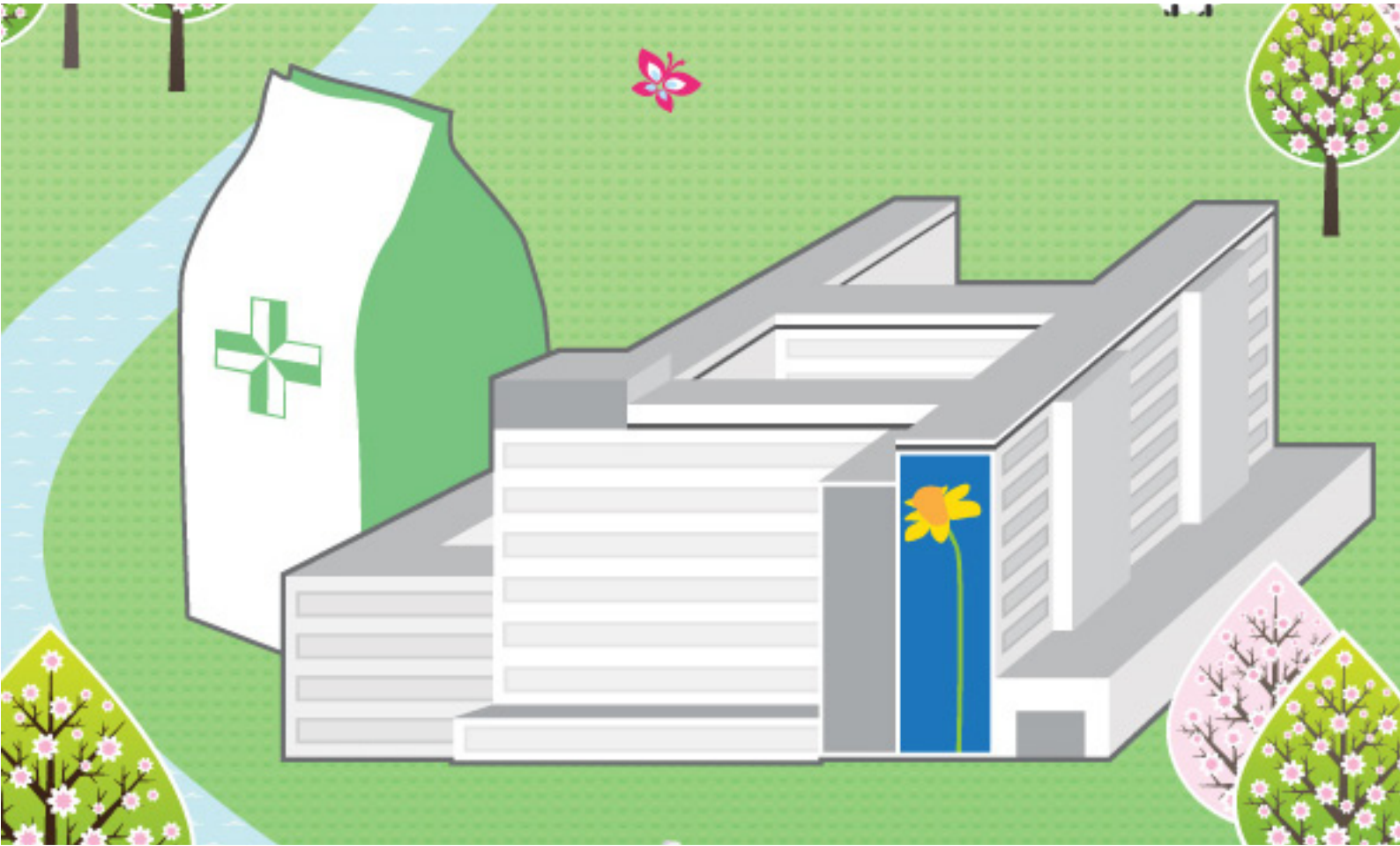
lots of organisms take part in breaking down dead matter making healthy soils.

Disease resistance –

genetic differences help provide resistance to disease and pests.

The Irish Potato Famine was caused by the potato blight fungus. Because of a lack of genetic diversity it was able to spread and destroy the crops. Around 1 million people died from this famine. Thanks to genetic diversity we now have crops that are resistant to blight.

Provides basic ingredients for medicine



Many plant and animal species are useful in finding treatments and cures.

For example:

Salicin found in Willow trees is a natural pain killer and led to the development of aspirin, one of the most popular pain killers in the world.

Digitalin is taken from our native foxglove and has been used for many years to treat heart conditions.

The Rosy periwinkle of Madagascar produces Vincristine which is used to treat childhood leukaemia.

Sweet wormwood from China is the only known source of Artemisinin which is an effective treatment for malaria.

Morphine from poppy plants is used internationally as a pain relief.

It is estimated that of the 250,000 known plant species only 5,000 have so far been researched for possible medical applications

Trees and plants filter the air we breathe, river systems filter the water we drink



Plants purify the air. Many trees and plants use carbon dioxide as food. They convert this into energy through photosynthesis which produces oxygen. They also filter harmful particles such as industrial pollutants and reduce greenhouse gasses.

Wetland systems such as rivers, streams, reedbeds, swamps and marshes filter water. These natural processes recycle essential nutrients, treat sewage and remove pollutants and particles from the water leaving it clean. Molluscs in estuaries remove nutrients from the water.

Encourages physical exercise

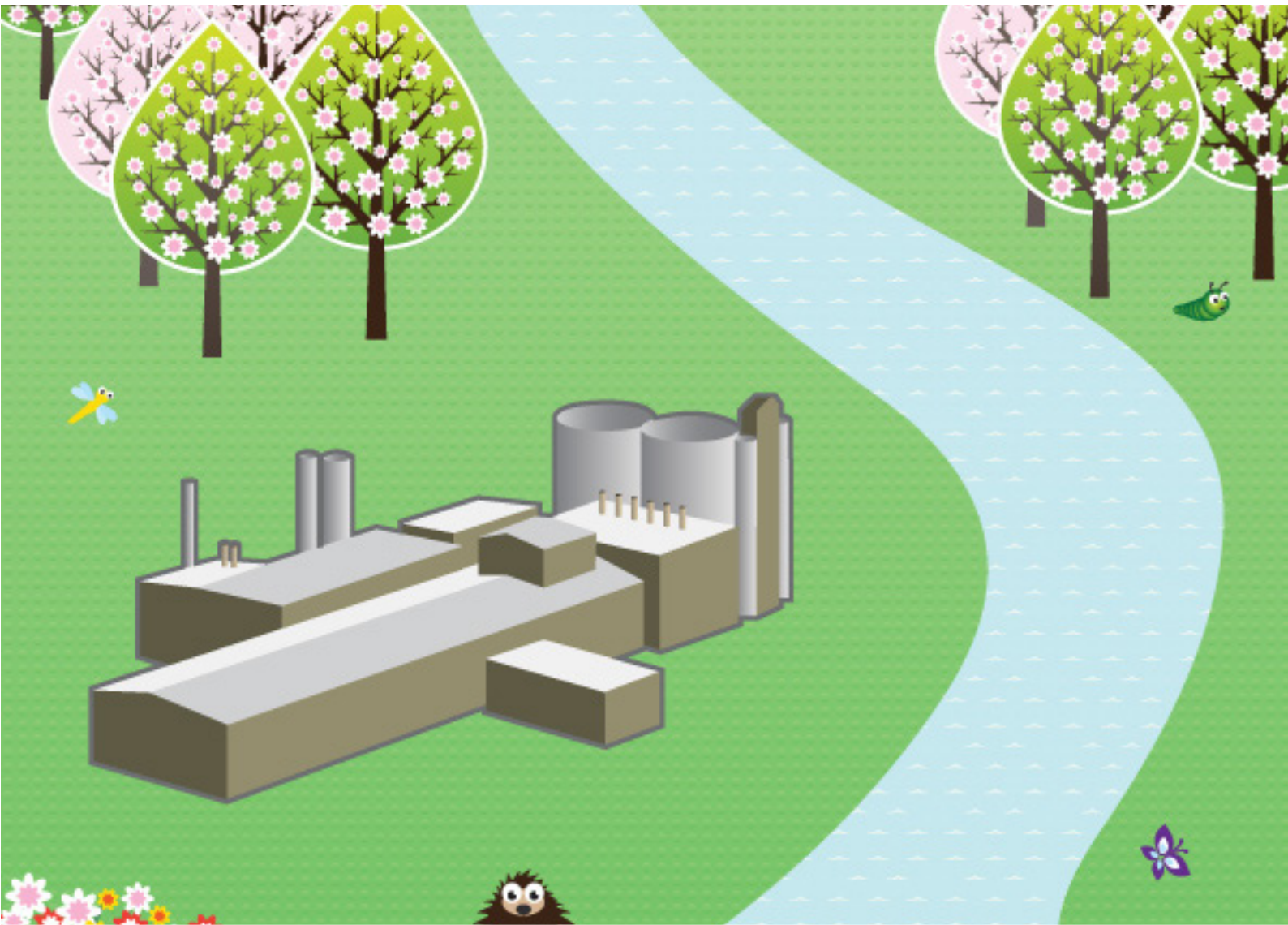


Recreational activities which encourage people to take exercise such as bird watching, fishing and shooting rely on biodiversity. Other activities such as walking, cycling, canoeing, climbing and sailing are enhanced by a thriving ecosystem. For example, walking and cycling holidays are mainly undertaken in biodiversity rich areas such as the highlands of Scotland and Wales.

Conservation holidays are also very popular. The attraction is often the time spent in areas rich in biodiversity. People also take on conservation tasks closer to home, perhaps as part of a local group. This encourages regular physical exercise and socialising.

Cardiff has a large number of friends groups who meet up regularly and do physical tasks in their local green space.

The fuel for our energy. Raw materials for industrial products



Without biodiversity there would be no timber to burn. Fossil fuels including oil and coal are all derived from biodiversity. Many years ago they were the living animals and plants that covered the planet. Over millions of years their remains have undergone immense geological processes which have turned them into the fuels we use today to power and heat our homes, factories, shops, offices and vehicles.

Industrial products including oils, lubricants, perfumes, fragrances, dyes, paper, waxes, rubber, latexes, resins, poisons and cork are all derived from plants.

Opportunities for people of all ages to explore and learn



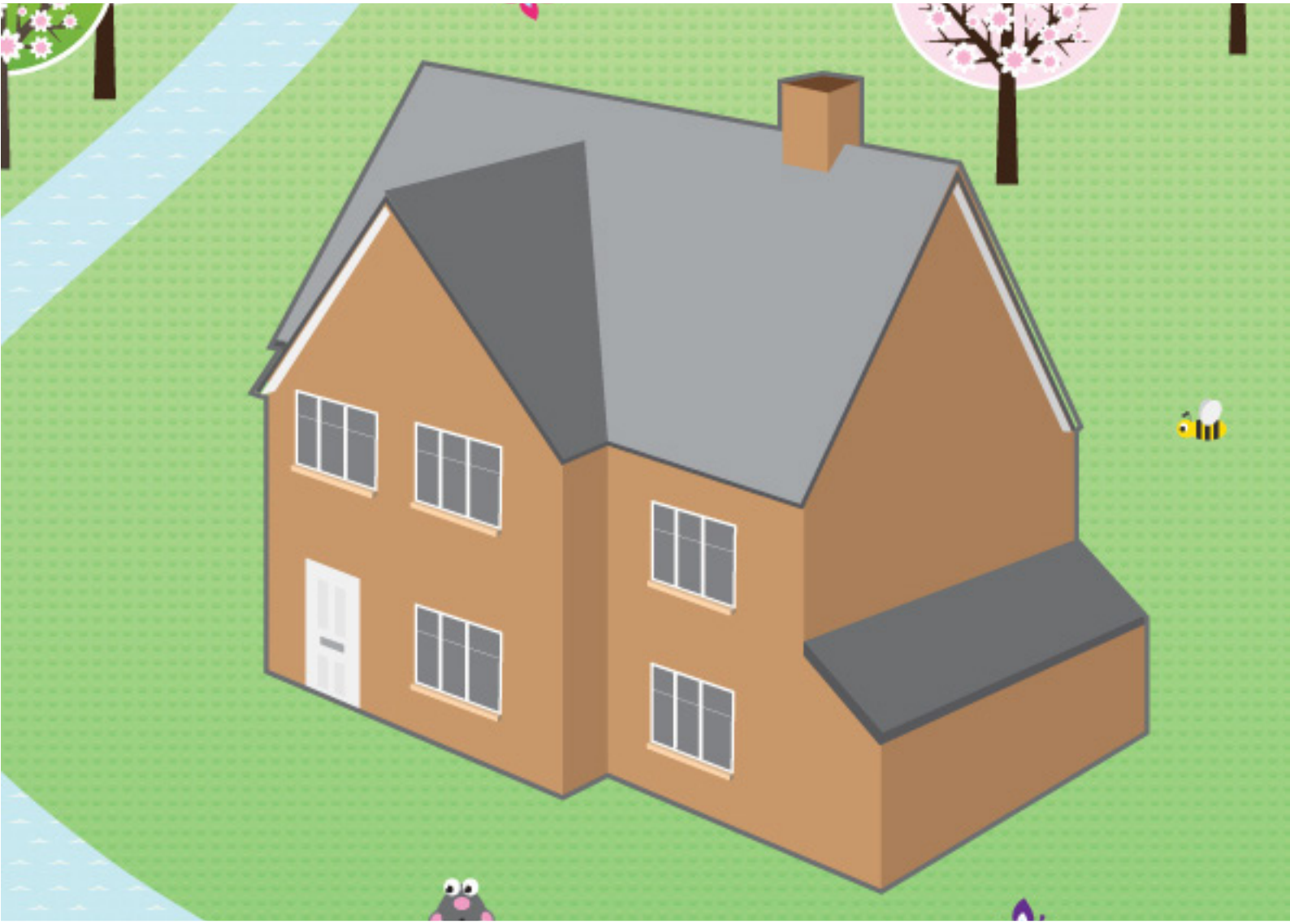
The natural environment is a giant classroom. Basic physics, chemistry, biology, geology, geography and history can be learnt from visiting a biodiversity rich site.

Outdoor classrooms are a popular way to engage children. They offer opportunities to link classroom based learning with real life situations.

These resources are free and open to all ages. They are also available on our doorsteps.

Events and guided walks by professional and voluntary organisations take place all year round. These are open to everyone and are a great opportunity to gain knowledge.

The building materials for our houses



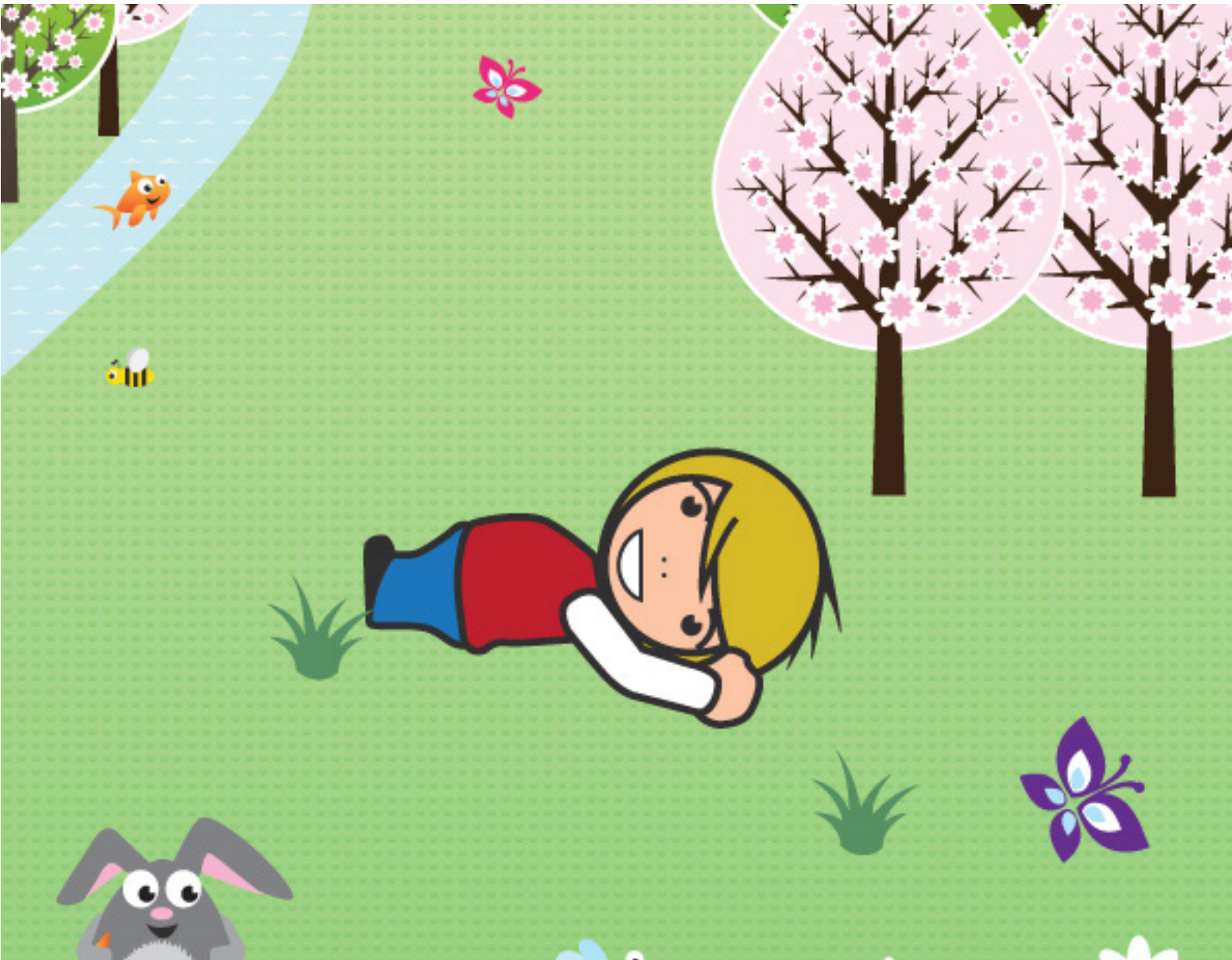
Our houses rely on timber from trees for their structure. Many houses are made of timber frames to hold up the floors and the roof. All plastics and other oil based products come from biodiversity – from the window frames to light switches.

Wallpaper and the paper used in plasterboard making up partition walls comes from plants.

Thatched roofs are made from reeds.

Lino (linoleum) flooring is made from materials such as linseed oil and pine resin. Wood flooring is made from timber and good quality carpets often have a high wool content.

Reduces stress and aids relaxation



Regular contact with biodiversity has many benefits. It has a positive effect on our mental health and well-being. It improves our ability to cope with, and recover from, stress, illness and injury.

Studies show* that after simply seeing an image of natural surroundings stress levels are greatly reduced. Results from such studies suggest that we are genetically programmed to react to natural surroundings by relaxing.

*Bird, W (2007) Natural Thinking. RSPB.

The materials for our clothes



Silk used in clothing is a natural fibre from the cocoons of the larvae of the Mulberry silkworm. The prism-like structure of the fibre gives it its shimmering appearance.

Cotton is a soft, fluffy, fibre that grows around the seeds of the cotton plant. It is native to the Americans, India and Africa. It is the most widely used natural-fibre in clothing today.

The wool used in our clothes usually comes from sheep. Other animals that give us wool include goats (cashmere), alpaca, camel and rabbits (angora).

Although no longer widely used in the Western world fur is an important resource for many people. Hunting communities rely on animal skins for clothing.

The leather used in clothing is a by-product of the meat industry, usually from cow hide. It is versatile and durable.