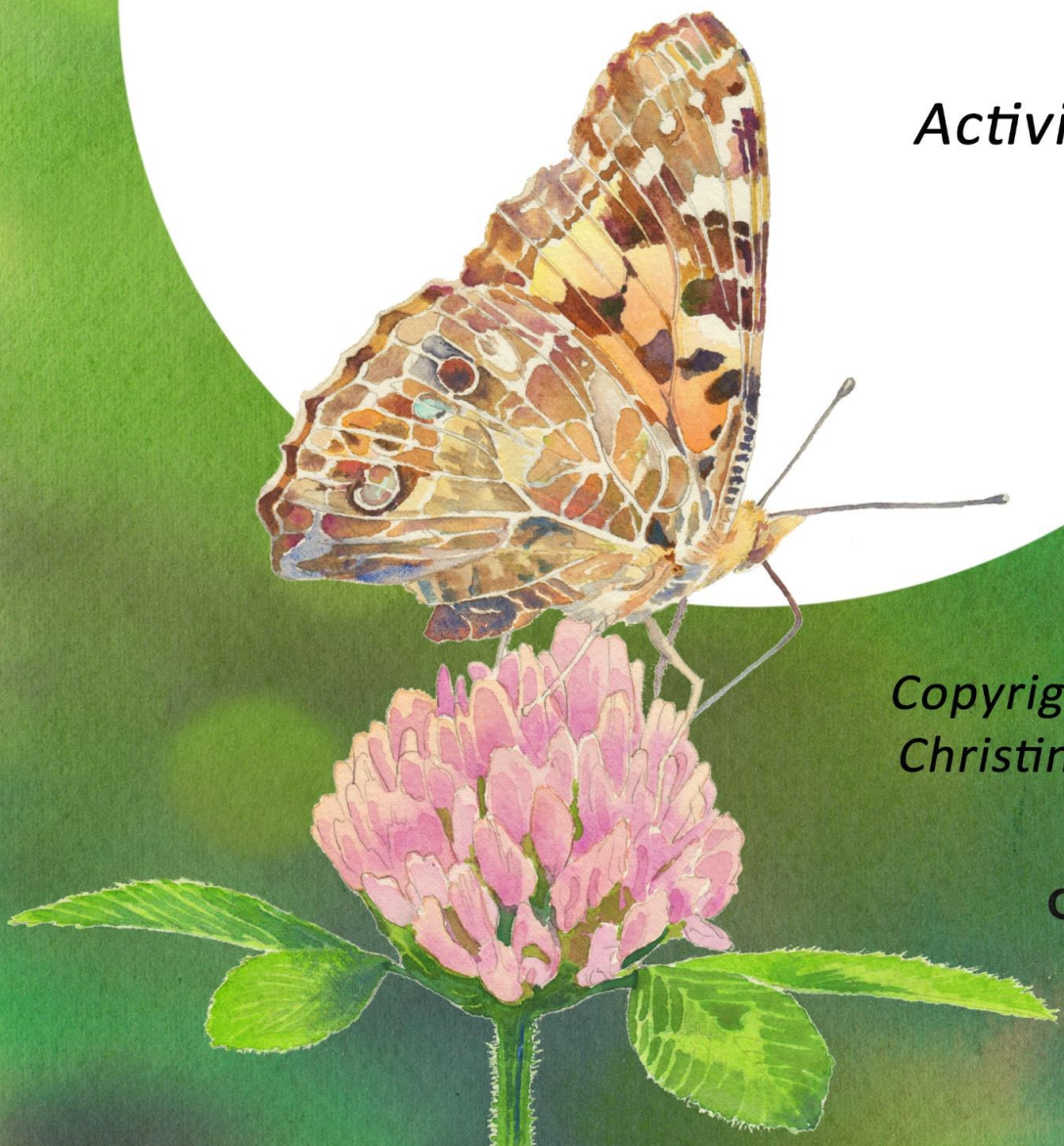
Design with Nature

Activity Book



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GRØNT forum

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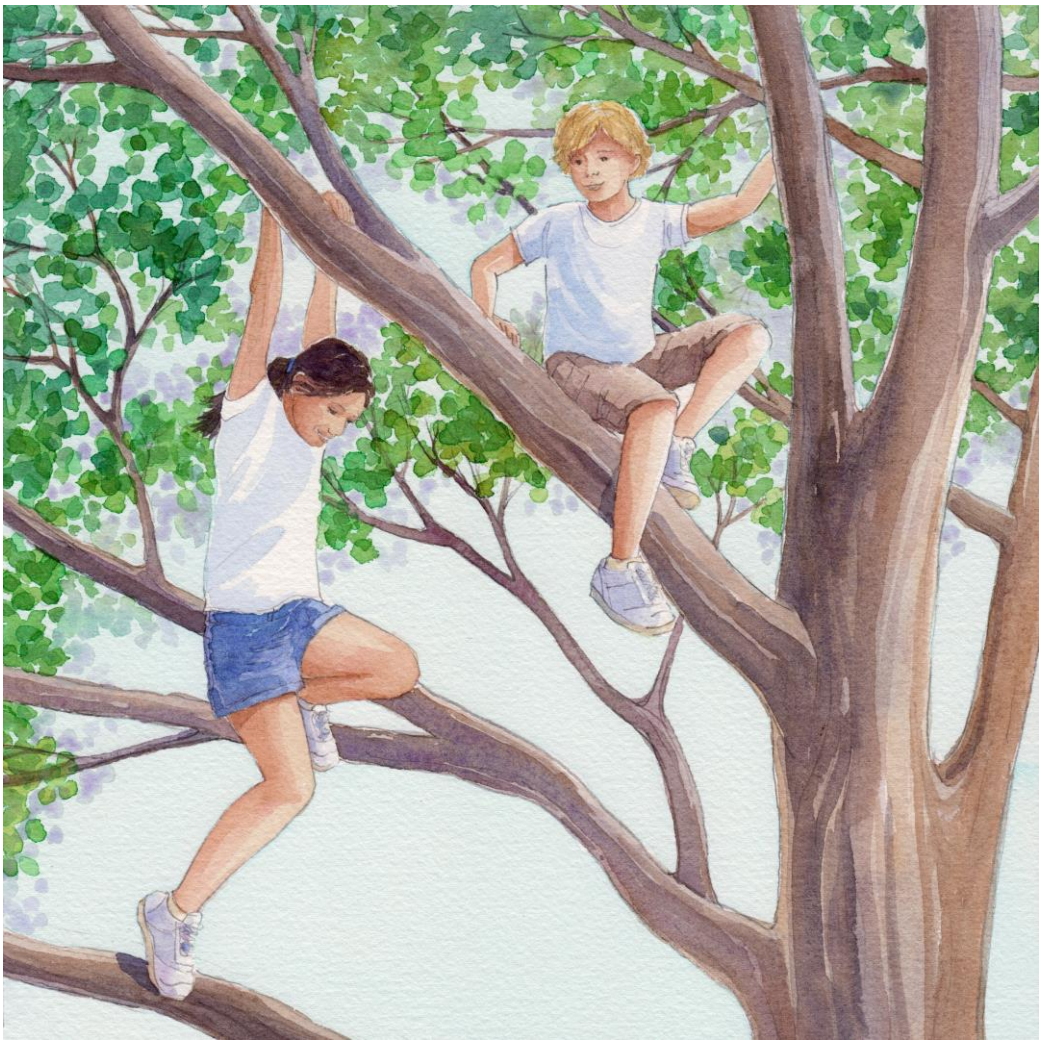
Living with Nature

Cities can be wonderful places for people to live. We learn from each other, make friends, and care for each other. If we design cities with nature in mind, wild animals and plants can live there too.



People learn about wildlife at school, but also by playing and exploring. When we spend time outdoors in contact with the natural world, we learn to love natural environments. This bond motivates people to protect and care for nature.

A row of street trees, or one big tree in the middle of a town square can bring beauty and joy to people. Mature trees can provide habitat for mammals, birds and THOUSANDS of bugs.

Draw your favourite tree!

Getting Close to Nature

Inside the city, we need “mini forests” for animals to live in, and people enjoy forested places close to their homes.

Look at the painting on the next page. How are people enjoying nature?

Getting close to nature can improve our health! Views of natural places from windows, or landscape pictures on walls can help people in hospitals feel better. Even small gardens on rooftops or balconies are restful.

People can relax and enjoy nature in quiet pavilions

Did you know…..

Grassy lawns are wonderful for playing games like football, and they are nice to lie down in the sunshine. But most cities have too many lawns, and mowing grass uses energy and creates pollution.

GREEN TEAM TO THE RESCUE!

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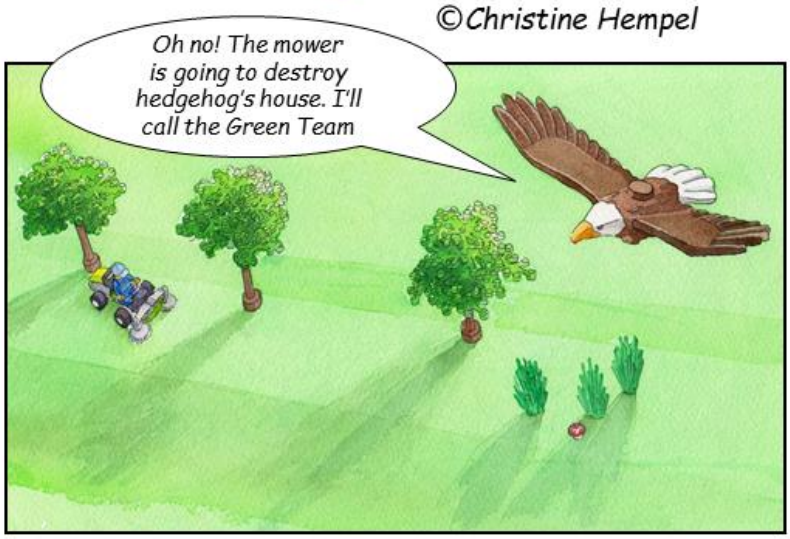
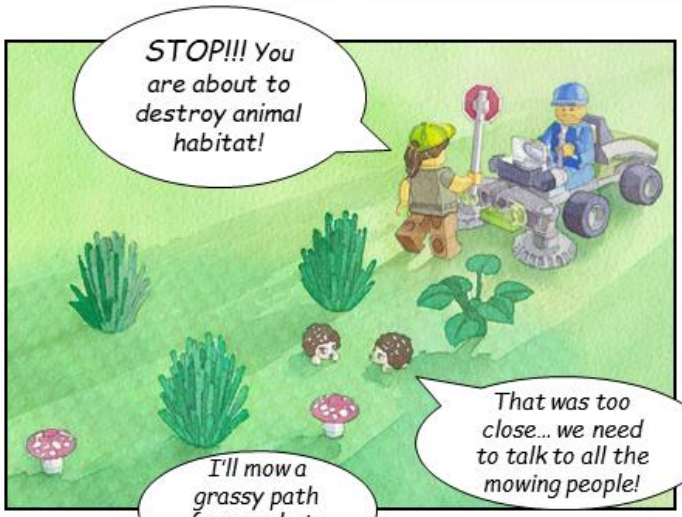
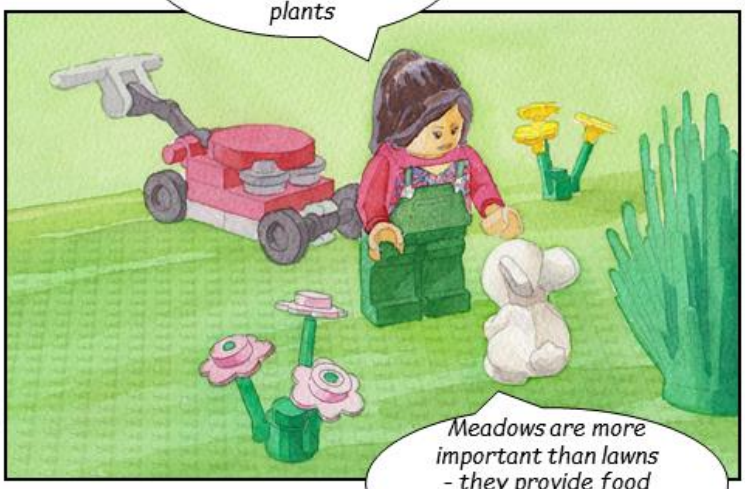
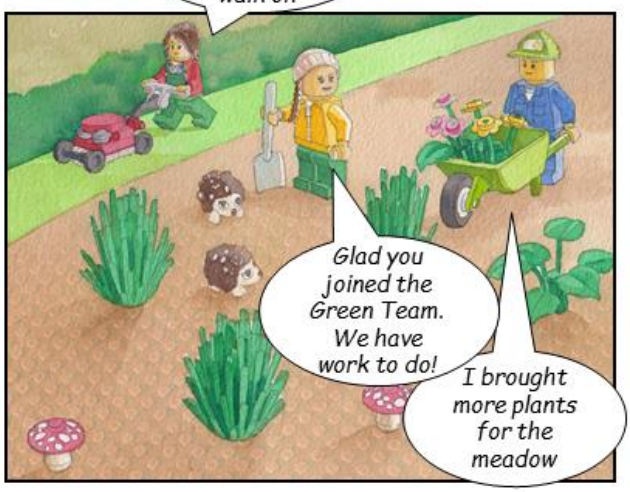






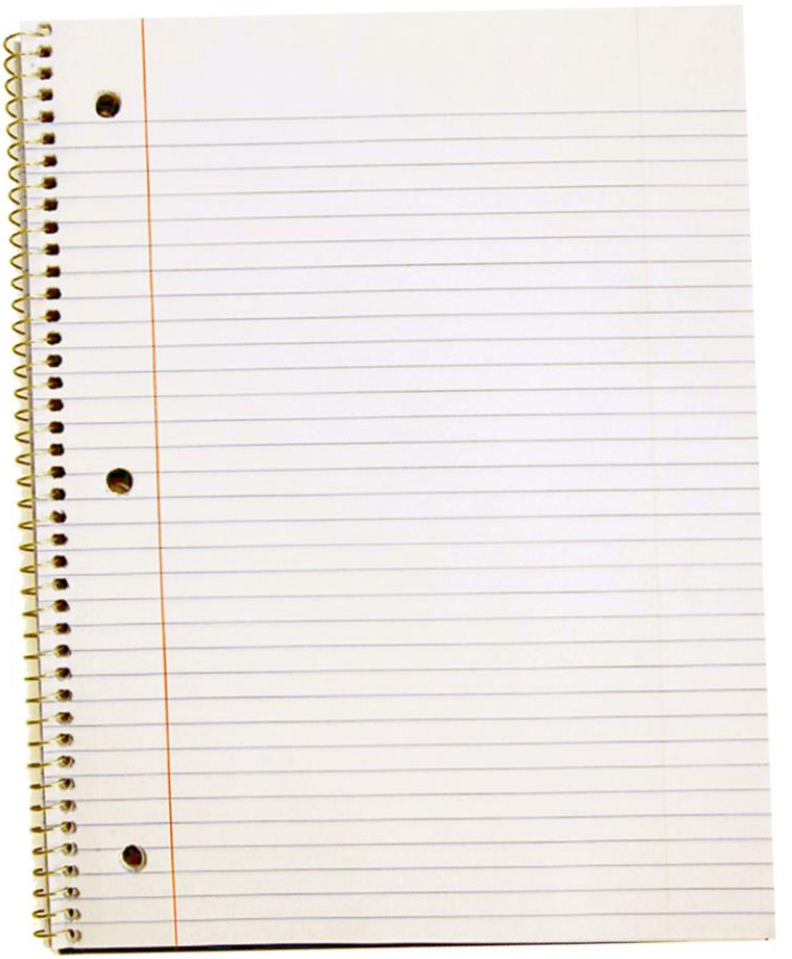


Nobody seems to use this lawn and it needs a lot of mowing. Why not design a pretty flower meadow for birds, bees and butterflies instead?

Long grasses and wildflowers can replace under-used lawns to reduce the need for mowing and reduce costs. Many small animals build homes in meadows, and the flowers and small fruits that grow feed insects, birds and some mammals. They can be simple grass meadows, or beautiful and colourful tapestry gardens

Creating Natural Habitats

Make a note of places to create new flower meadows in your community!



Meadows are habitats that provide food and shelter for a diverse community of wildlife.

Colour me in…

Draw your own birds, bees or butterflies!

Some animals migrate very long distances in fall and spring, stopping at exactly the same place along the way every year!

Traffic Design for Animals!

People need to travel easily within cities, and from one town to another. Animals need to get around too. Migrating birds and insects use trees and shrubs to stop and rest on their journey. They love plants with fruit, nuts or flowers to eat, water to drink, and safe places to sleep when they are passing through.

Flowers on roadsides give animals food and shelter when they travel

The stream is a path for fish and other wildlife

People watch seabirds at the cliffside observatory

A bridge lets animals cross the highway safely

- *City streams and creeks are roadways for fish, reptiles and amphibians, don't bury them underground!*
- *Flower gardens, green roofs, birdfeeders and fountains provide places for birds, butterflies and insects to rest and eat along their journeys*
- *Animals need to cross highways and train tracks, think about tunnels and bridges to keep them safe*
- *Large parks and urban forests make "green corridors" so animals can find their way our of town to the countryside. Roadside flowers make pathways for insects and birds too.*

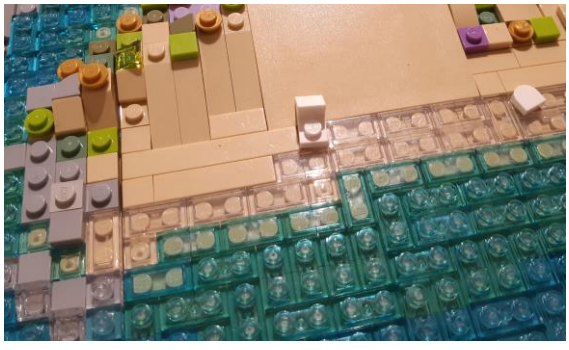
Many types of mammals, birds, insects, reptiles and amphibians can live inside or our cities.

Try taking a picture of one!

Put a picture of your favourite animal under the tracing paper and draw one of your own!

Caring for our Water

All living things need clean, healthy water! Designers can use nature to help keep our water sparkling clean



This island has a beautiful sandy beach

This pool has sun, shade. a breeze and a beautiful view

This fountain gives neighbours a place to cool off and play

Design for Cleaner Water

Cities can be badly damaged by floods and storms, but plants can help!

Marshes and wetlands prevent flooding and provide habitat for wildlife

Plants can be used to help clean wastewater!

- *The roots, trunks, branches, and leaves of street trees soak up rainwater like a towel or mop.*
- *If we use less hard paving, and more natural materials like grass and gravel on parking lots and roads, storm water can be absorbed more slowly and pollution can be filtered.*
- *Natural wetlands and marshes absorb storm water, and help to prevent floods.*
- *Plants can filter out pollution and can help clean up city wastewater and sewage. Some plants can help to clean up contaminated land.*

Water

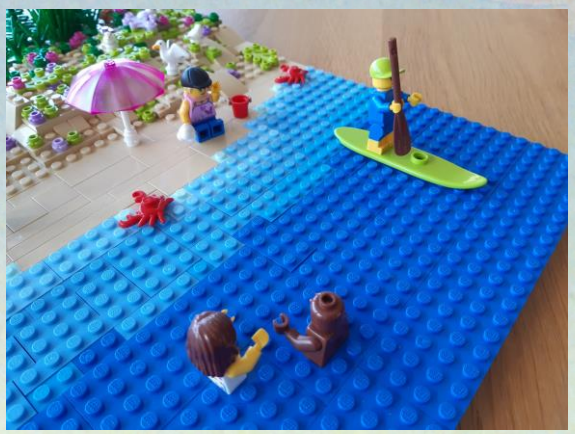
On farms, manure from animals and the fertilizer that feeds crops can pollute streams and rivers.

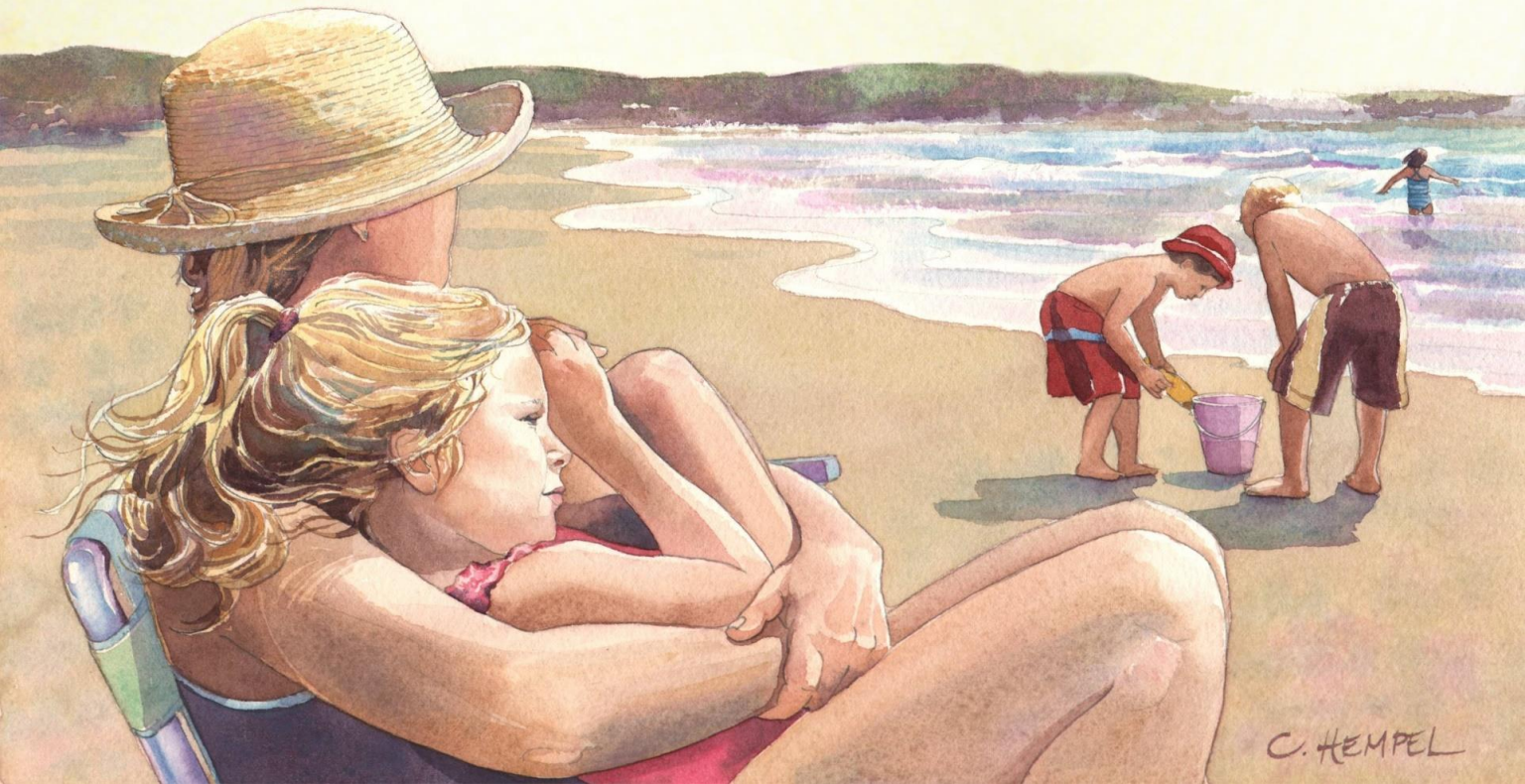
Buffer Strip" plants protect the river from farm field run-off

Special grasses, trees and shrubs can filter polluted water as it drains away from fields. The roots of plants along river edges also help protect soil from eroding during storms and floods.

Sandy beaches are wonderful places to enjoy the water

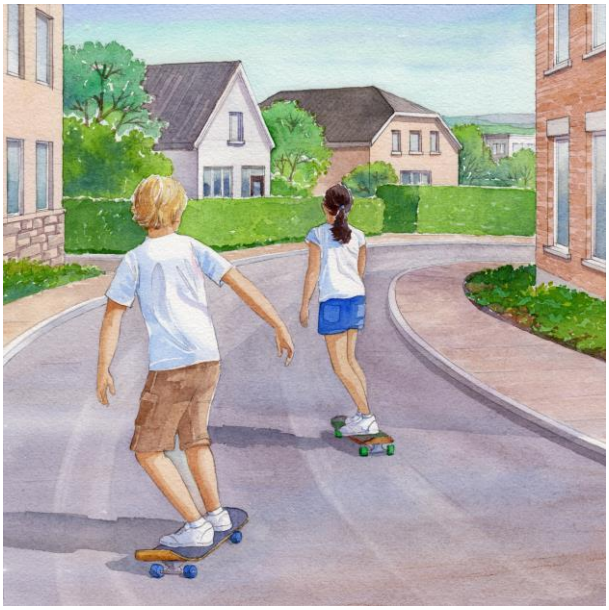
Sand dunes are hills that form on beaches. They grow delicate plants and grasses, and over time create soil that can grow scrubs and trees. These plants help protect coastlines from storms, tides and floods. Beaches are sturdy, but we should never walk or play on fragile sand dunes.

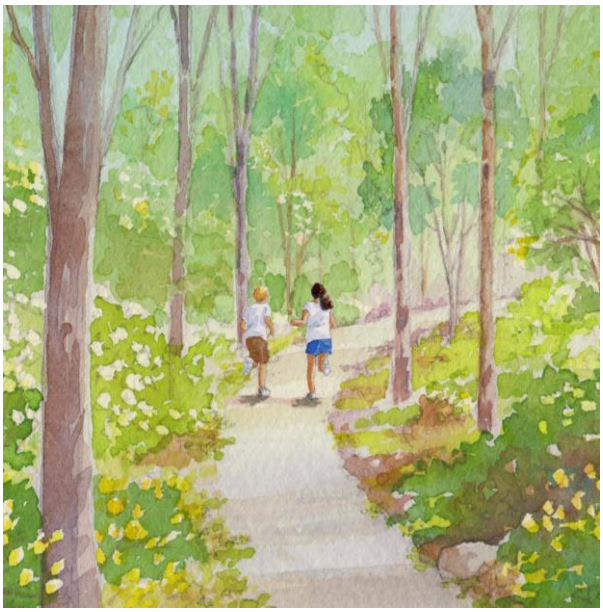




Fresh Air!

Many cities have too much traffic and too many cars that pollute the air. There are better ways to get around!





Without cars, people get more exercise, explore and have more fun along the way.

How would you like to get to school?

Air

- *Design public transportation to be efficient, affordable and fun to use and people will leave their cars at home!*
- *Create cycling and walking paths that are safe and fun. Our bodies, our hearts, and our minds will be healthier too.*
- *Burning fossil fuel can pollute the air, but cities can use "green" technology like solar panels to create energy*
- *Street trees and forest patches help clean the air and provide shade to keep us cool*

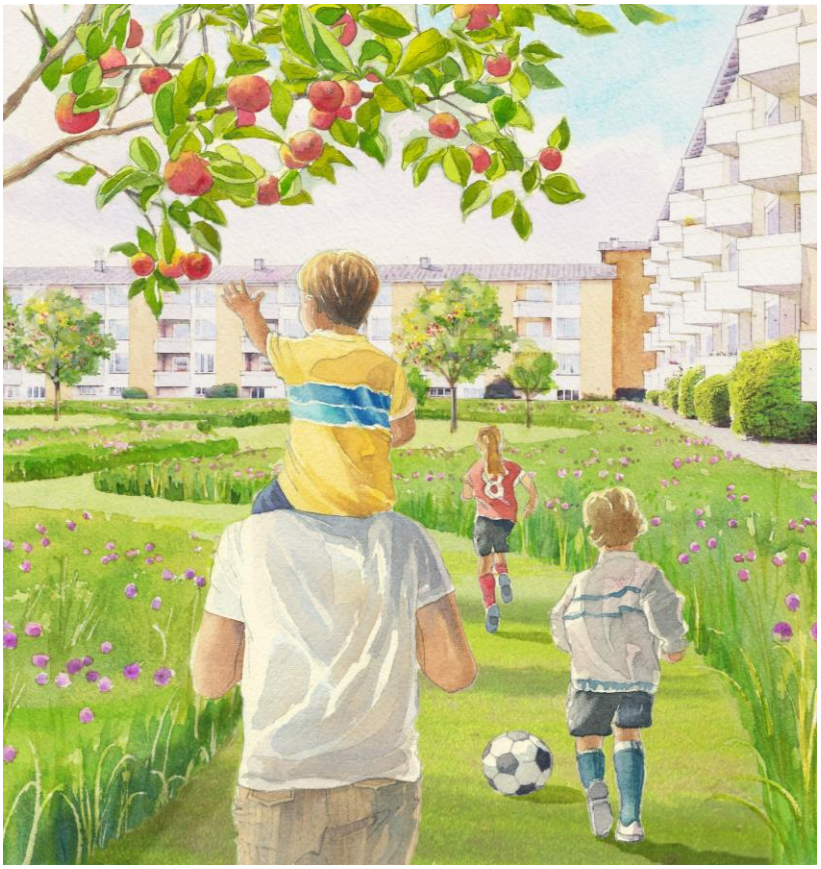
A train is an efficient way to travel to other cities

A recycling center, incinerator and energy plant helps reduce waste

Trees provide shade and protection for these houses

Our Earth

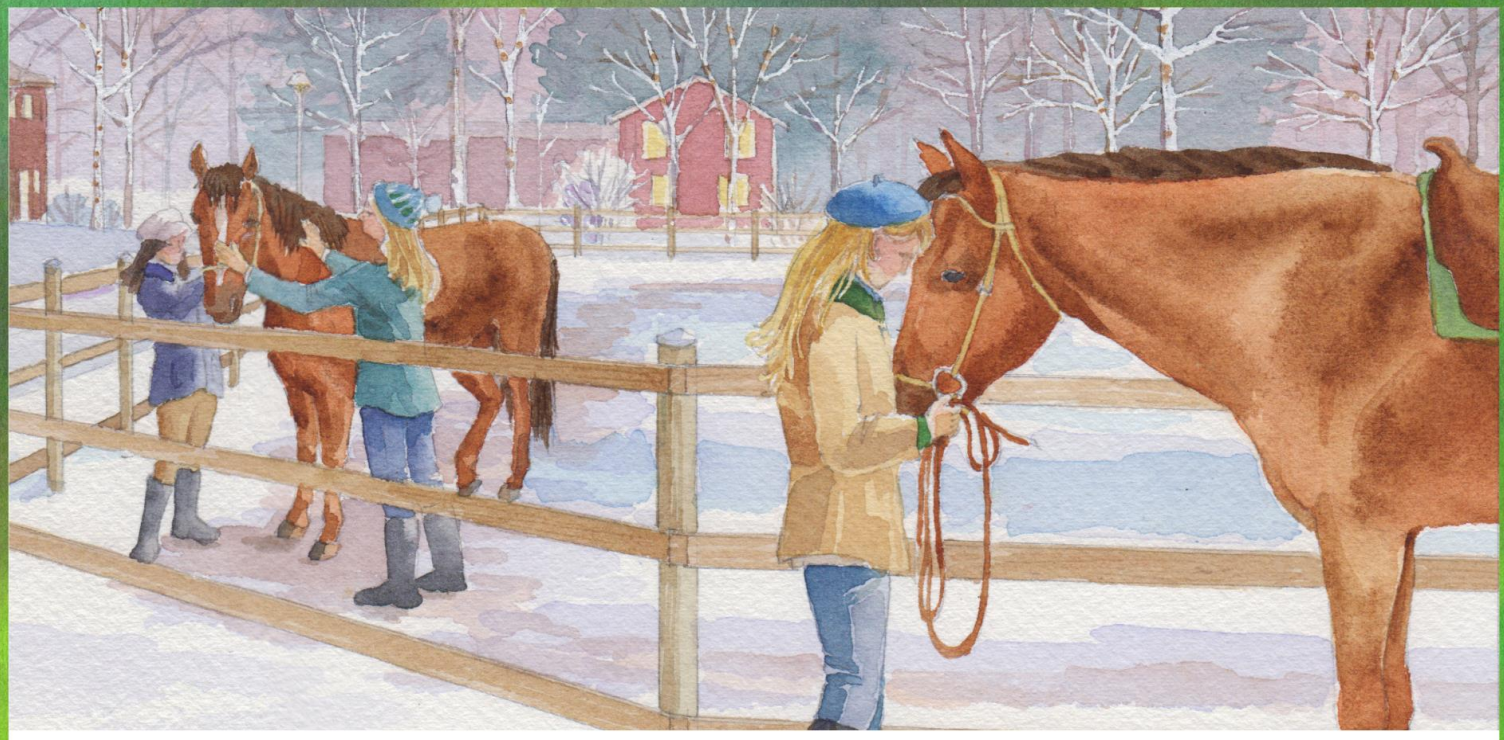
It's hard to see, but the rock, water and soil below the ground affect what happens above the ground.



Rock and soil varieties support different types of plants and trees. The local geology and water systems underground can change where building can be built, where food can be grown, and how we play!

Layers of sand, clay, limestone, springs and an aquifer underground

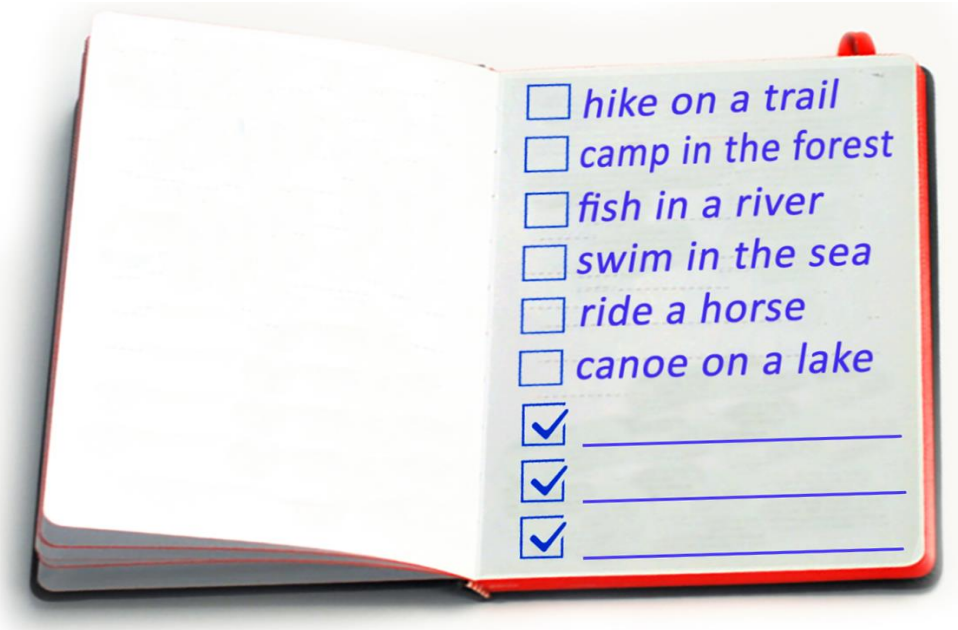
Special plants and trees can grow in the harsh conditions of the cliffs



Protecting Rural Nature

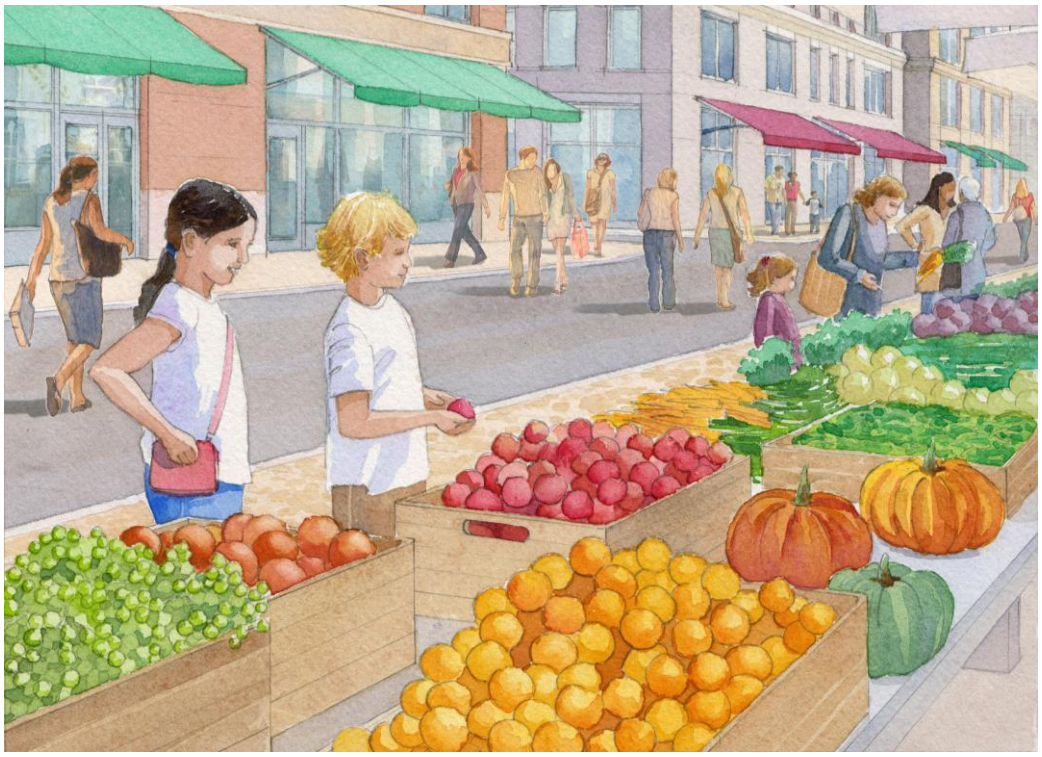
It is important to conserve large areas of land in the countryside for wildlife conservation, recreation, forestry and agriculture.

What do you like to do in the country?



Markets for Local Food

Cities need neighbourhood markets so that farm-grown products are easy for people to buy every day



People buy food direct from farmers at weekly markets

Urban farmers grow and sell food right in the city

Growing Food in Cities

Most of our food comes from rural farms, but there are plenty of places in the city to grow food.

- *Food forests are special gardens that are designed like natural forests and can grow many types of foods, like nuts, berries and herbs.*
- *Urban farms grow small crops and orchards – even chickens! People can learn about food by working on a farm, and buy food from growers on their walk home. .*
- *In community gardens, people grow food together with family and friends, sharing water taps and compost piles. A barbecue is a lovely way to celebrate the harvest.*

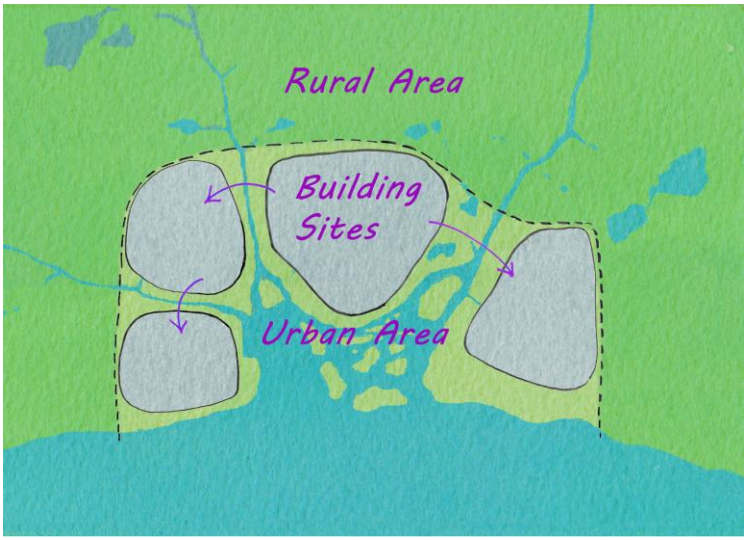
In a "Colony Garden" people have small plots and small buildings for gardening.

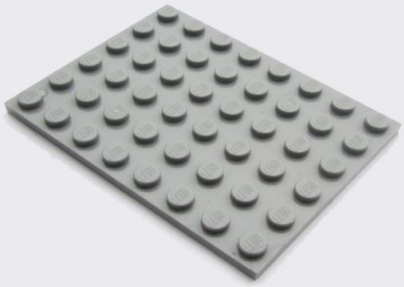
What kind of food would you like to grow in your neighbourhood?

Match the number for these 8 landscapes!

1. building area
2. urban forest
3. rural farm
4. silty marsh
5. rocky shore
6. building area
7. natural forest
8. sandy beach

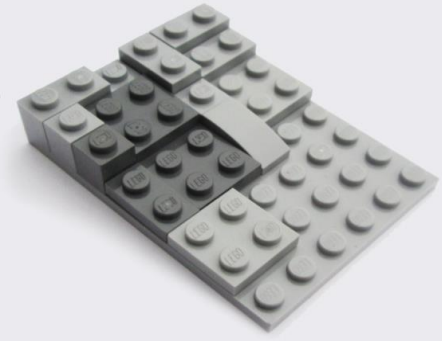
- *Shops, houses and most industries should be located in urban areas on stable soils that are not prone to flooding.*
- *Flood plains are not good for many buildings, but they can be used for parks or for urban farms.*
- *Rural areas should be preserved for agriculture, forestry or wilderness areas.*
- *Access to rural nature gives people the chance to escape the city and enjoy recreation in the countryside.*

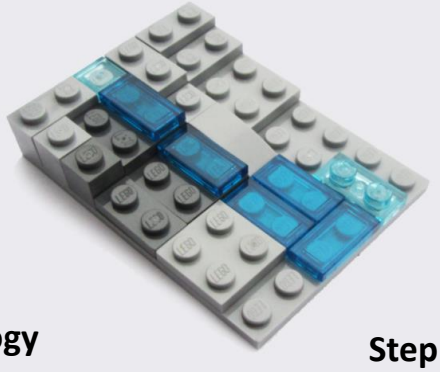




Design with Nature

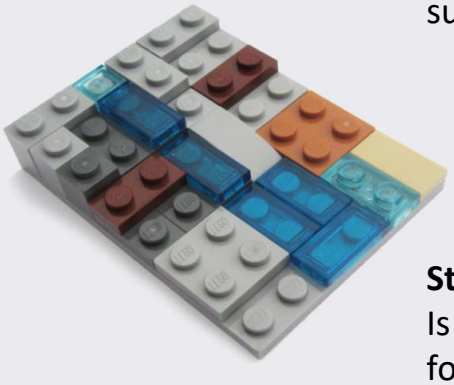
Would you prefer a cabin in the woods, a beach house, a farmhouse or something different?

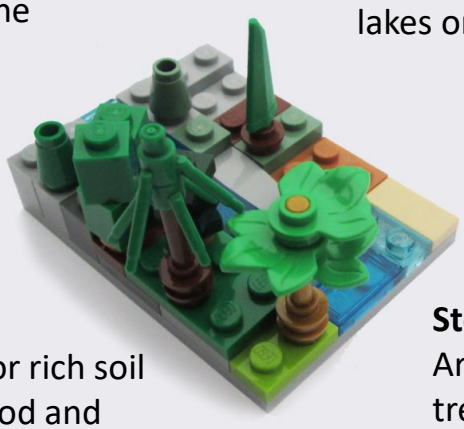




Step 1. Geology
Build the rock layers under the surface

Step 2. Water systems
Design the creeks, rivers, lakes or seas





Step 3. Soil
Is there sand or rich soil for growing food and plants?

Step 4. Plants
Are there forests, trees or plants growing in the landscape?

Step 5. Roads, buildings and gardens
Plan the best the locations for your structures to fit with the natural landscape

Design with LEGO!

Here are some more landscapes to inspire you. Build your own scene and send us a photo! *chempel@christinehempel.com*

About this book

This book was printed to accompany the exhibition "Design with Nature, Design with LEGO®" currently on display at the Vejle Library. The exhibit displays an imaginary city that is designed to be integrated with the natural landscape. Intended for children age 6-12, we hope that the activities, text and imagery engages young readers and their families to share creative ways to build our homes, neighbourhoods and cities.

Author and Illustrator Christine Hempel is an urban designer and illustrator with a passion for building engaging, ecologically-responsible and beautiful communities. More information about this and other projects can be found at www.christinehempel.com

We are grateful to Vejle's Grønt Forum and Ole Kirk's Fond for support this creative and playful project.