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INTRODUCTION

One Square Metre of Forest – About the project

We warmly invite you and the children to embark on a voyage of discovery! Our destination is the forest – as an environment, habitat and place full of wonder. A complex network of mutual dependencies prevails in forests. They are home to countless different species of plants, animals and insects, and a wonderful place for humans to experience new things and to relax. As our planet’s “green lung”, the forest provides oxygen and also fulfils an important climatic function as a carbon sink.

Thirty percent of the earth’s land mass is forested. We wish to focus on just one small section of this ecosystem: one square metre of forest. We strive in this way to open the children’s eyes to things that they may have overlooked in the past and to provide a new awareness of the fauna and flora. The children should “learn to see” – for those who take a closer look will discern the forests’ unique beauty, learn to appreciate the inherent value of nature and understand the need to preserve its diversity.

The “1 m² of forest” exploration kit provides ideas and resources to consider the most varied of aspects of forests at schools and other educational establishments. It is aimed at children aged 9 to 12 years and can be used for interdisciplinary school projects. In addition to specialist content, the following subjects also play a central role: nature appreciation and conservation, preservation of biodiversity, sustainability and sustainable development.

The “1m² of Forest” toolkit is part of the EU initiative “The Future We Want” organised by Climate Alliance, a city network with more than 1,700 members in 26 European countries. During the project involving countless European partners, we consider the questions of how we can develop behaviour and strategies for life (and survival) on a planet with limited raw materials and what we can learn from indigenous people who dwell in the rainforest.

For rainforest inhabitants, thinking in waste-free cycles is a matter of course – after all, nature only knows this form of use. People living in high-tech societies should strive to better understand natural mechanisms and to adapt their ways of life and production processes accordingly.

This sustainable development must take all areas of life into account and be addressed time and time again in educational work.

The project aims to bring together European partners and indigenous people who dwell in the rainforests in the Amazon region to exchange and discuss future opportunities for development. This will allow the people in Europe to gain a new perspective.
I spy
with my
little eye
INTRODUCTION

To get things started, the children should first be familiarised with the subject of forests. You can review their existing knowledge and expand on this.

1.1. What is a forest? / Workbook page 02

| Project introduction, individual work, discussion | Pen | 15 min. |

The “1m² of Forest” project involves taking a closer look and discerning the details and relationships. A simple guessing game using the three close-up photos on page 2 aims to prepare the children for the next activities. An outline of the entire project is provided next to these.

(Solutions, from top to bottom: a spider’s eye, thistle blossom, bark beetle tunnels)

1.2. I spy with my little eye / Workbook page 03

| Individual work, discussion | Pen | 20 min. |

Most of the children will already have an idea what a forest is like and know a great deal about them from their own experience, school, films and stories. They should write down ideas of what might be hiding in the forest in the circles on page 3. It may also be interesting to learn where the children obtained their knowledge.

1.3. Forest inhabitants / Workbook pages 04/05

| Discussion, individual work | Red sheet (see pocket in the teaching guide) | 20 min. |

When the red sheet is laid over the picture, the forest inhabitants concealed in the picture are revealed. All of these animals are connected in some way: the mouse is the fox’s prey, the tree provides the perfect nesting place for the owl, the squirrel helps to scatter the tree’s seeds by carrying off the nuts to hide them elsewhere – then often forgetting them! Which of the connections are the children able to discern? (Focus on the food chain.)

Info:
The forest offers nesting places for animals, habitats for plants and a source of food for both. If the trees are cut down, this habitat would be destroyed – along with all those who depend on it.

1.4. Trees and their leaves / Workbook page 06

| Individual work, discussion | Pen, online research | 20 min. |

“What types of trees do you know?” Use this question to find out what the children already know and gradually go into more detail. Draw their attention to the many different leaf shapes, which have in turn led to myriad descriptions for their shapes. Botanists use hundreds of different adjectives to describe the shapes of leaves, some of which may sound a little bizarre. Indeed, some really are rather unusual: obovate, subulate, dentate, deltoid, lanceolate, pinnate...
To immerse themselves in the world of leaf shapes, the children should trace the outlines of different tree leaves. This will enhance their awareness of the wealth of different shapes and perhaps also the details (e.g. fine serration along the edges) that they might not have noticed otherwise.

The different leaf shapes can also be attributed to the ways in which the plants have evolved to adapt to their environment. In humid regions such as the tropics, for example, leaves are often long and thin to allow the excess water to drain off. In arid regions such as the desert, leaves tend to be thick and covered in a waxy layer or little hairs. The large size allows leaves to store water better and to survive longer periods of drought. And yet different species of plants can have very different leaves even in similar environments. Beside the environmental conditions, protection from predators plays an important role in the formation of different leaf shapes and sizes.

Images (see workbook):
(1) oak, (2) robinia, (3) chestnut, (4) willow, (5) maple and (6) beech.

Info:
Use an online nature guide such as www.leaf-id.com to identify the different species of trees.

1.5. Roughly how many types of trees are there? / Workbook page 07

<table>
<thead>
<tr>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the picture show a European forest? It is possible to tell the region and forest type from the leaf shapes on page 7.</td>
</tr>
<tr>
<td>15 min</td>
</tr>
</tbody>
</table>

There are different types of forests: coniferous forests, deciduous forests, mixed forests, recreational forests, natural forests, European primeval forests (nature parks), tropical rainforests, commercial forests, monocultures, plantations.

While tropical rainforests make up just 3% of the world’s forests, 90% of all species on land can be found there!

Info:
High biodiversity prevails in the tropical rainforests. Up to 250 different types of trees often grow on just one hectare of forest. A total of more than 10,000 species of trees can be found there. It is difficult to determine the exact number as there are different definitions of a tree and large areas of rainforest have not yet been fully explored. By way of comparison: in Germany, there are around 65 different species of trees, of which the twelve most common make up 96% of the tree population.

Sources:
www.forestry.gov.uk/forestry/infd-8qnk35
1.6. How much forest is there on our planet? / Workbook page 08

On page 8 is a map of the world for the children to cut out. They will then need to fold it into a globe and glue it together (based on an idea by Richard Buckminster Fuller). Where do rainforests grow and why?

If the children colour in the seas, it will help them to make out the areas of land mass. They can then create a 3D globe by cutting along the solid lines and folding along the dotted lines. The dotted lines should be folded in to create a globe. The dark tabs should be folded out the other way and stuck together to create a stand for the globe.

Tip:
Use a ruler and pen to go over the dotted lines again before folding the globe up.

Info:
The tropical rainforests are being destroyed at an alarming rate: every year, 13 million hectares fall victim to chainsaws, slash-and-burn farming or flooding. This corresponds to an area the size of one football field every two seconds! The main reasons for this destruction is to make space for pastures and oil palm, soy or banana plantations, extract ores, oil or gas, build dams and obtain timber for the furniture and paper industries. One of the main functions of a rainforest is to provide protection against erosion. If there is no forest, the soil is rapidly leached of all goodness and washed again by the rain, making reforestation impossible. In other parts of the world, the tree population is increasing due to intensive reforestation. However, most of the new forests are exploited as commercial forests and are often monocultures.

Sources:
www.sdw.de/betrohter-wald/wald-weltweit
www.regenwald.org
Global Forest Resources Assessment of the Food and Agriculture Organization (FAO) of the United Nations; the figures relate to the period from 2000 to 2009.

1.7. What is a forest for you? / Workbook page 09

Pictures of forests are shown on pages 3, 7 and 9. What differences can the children discern?

What types of forests have the children visited to date and which have they already heard of? How do they imagine the forests they have not yet visited to be? Which types of forests do the children feel – or think that they might feel – the most comfortable in? Where is there more to explore?
What is a forest for you?

What can you see here? Describe the differences between the forests pictured on pages 3 and 7.

(See workbook.).

A eucalyptus plantation in Uruguay is pictured on page 9 (see workbook), which is used to extract cellulose. Tropical rainforest once grew here.

What is a commercial forest?

A healthy ecosystem is based on diversity. Commercial forests in which just a few species of trees (monocultures) grow only provide a habitat for a few species of animals and plants. Pesticides are used to prevent the spread of insects and fungus that could damage the trees. These can have a negative impact on the fauna and flora – as well as humans. Because the trees were mostly planted at the same time in monocultures, younger trees cannot effectively protect the older ones from the wind, which leads to widespread storm damage.
TRAINING
“Learning to see”
What is beauty?

There really is absolutely no right or wrong answer to this question. It is entirely up to you what you find beautiful. Every person on our planet has their very own perception – and this can even change over time.

When people live together, they often develop common notions of beauty. The result is clothing fashions and traditional dress, unique building and city construction styles, and endless different styles in painting, music and other arts.

Shared values can be spoken of when a consensus is reached within the group on what is beautiful.

It is interesting to learn why something is considered beautiful. Art, philosophy and science all seek to identify possible formulas for beauty.

This search essentially involves observing what individual people find beautiful. It helps to consider different aspects here such as colours, patterns, shapes and functions.

It is particularly important to take a close look and to describe exactly what can be seen. There is no right or wrong, but rather only a subjective perception – and this can be trained. The following pages contain a series of exercises to help you train your sense of perception.
In order to understand, value and protect forests, we must first appreciate all of their characteristics, components and inhabitants. Seeing can and must be trained. We provide some suggestions for discussions and practical exercises here that will help draw children’s attention to optical or mechanical manifestations. The aim is to change their perception to enable them to appreciate the forest from an enlightened perspective.

2.1. What is beauty? / Workbook page 11

**Discussion**  
20 min.

Beauty is often used as a term or scale – an object or person is perceived as more or less beautiful. But who actually decides what is beautiful? Do all of the children understand beauty to be the same thing? What about all the other people on our planet?

**Info:**
Which characteristics and values do the children consider to determine beauty?
- External features: e.g. colour, surface structure, pattern, geometry, function/shape...
- Inner values: friendliness, respect, tolerance, attentiveness, willingness to help, honesty...
- Social values: culture, religion, fashion, status...

2.2. Colours / Workbook pages 12/13

**Group work**  
Pen, coloured pencils  
20 min.

The children may already have been introduced to the world of colour during art class and learned that there are cold and warm colours, light and dark shades, primary colours and mixed colours.

Colour descriptions and shades can evoke new impressions. The children should use the descriptive words and their own ideas to describe the imaginary flower they create on page 13.

They should cut out the colour descriptions and shades and store them in a safe place. These can be used later for the presentation board (inside the back cover) to describe their finds.

The children can also use the colour samples on page 12 later on to present their forest finds.

**Info:**
Why do birds dwelling in the rainforest have brightly coloured features? One reason is for camouflage, as the birds often hide among plants with vibrantly coloured flowers and are then difficult to spot. Another reason is the search for a mate. The more beautiful and colourful the feathers, the more attractive it is. This will in turn increase their chances of finding a mate.

2.3. Surface structures, patterns / Workbook page 14

**Homework, discussion**  
Paper, pencil, glue, scissors  
20 min.

**Surface structures**
Taking rubbings will help draw the children’s attention to surface structures (colours and materials are less important here).

**Unique:** the children can add their unique fingerprint here.
Patterns
Four examples from nature illustrate the practical benefits of different patterns.
How do they fulfil their respective purpose?
Images from left to right: shield bug, poppy, physalis, peacock butterfly

To make clear how unique natural patterns and structures are, the children can attach a fingerprint at the bottom of page 14 (see workbook) and compare these with one another.

2.4. Patterns and ornaments / Workbook page 15

<table>
<thead>
<tr>
<th>Individual work</th>
<th>Pens</th>
<th>10 min.</th>
</tr>
</thead>
</table>

Different structures that seem like patterns to us can be found everywhere in nature. The children should identify individual elements in the six examples of patterns from nature. They should then combine these elements to create a new ornament.

Images from left to right:
Top – cinquefoil, blue passionflower, poppy
Bottom – cactus spines, hoverfly, grub trails on a leaf

On the left are examples of patterns taken from the pictures; on the right is the ornament created using these.

Question:
What is an ornament? Humans use patterns from nature to create ornaments.
Why do humans design ornaments? The children should share examples from their daily lives.
2.5. Shapes / Workbook page 16

| Discussion, work task | Origami paper, internet access | 20 min. |

Every living creature has developed a specific shape through evolution. Mushrooms are used as an example to describe the function of shapes in nature.

Three different examples are shown on page 17 in which humans have copied natural shapes in technical structures. Links are provided to instructions on how to recreate these shapes in origami models. Can the children think of any more examples where humans have copied something from nature?

2.6. Geometry / Workbook pages 18/19

| Individual work | Two coloured pens, internet access | 20 min. |

Patterns in nature tend to not be random but rather to follow specific laws. Many can be presented and described geometrically. Some of these patterns are based on the Fibonacci sequence that is described here. The children should continue the Fibonacci sequence. A pine cone and sunflower are used to explain the Fibonacci numbers. They should then create their own Fibonacci pattern in a diagram.

Page 19 features a link to a playlist with a video entitled “Doodling in Math: Spirals, Fibonacci, and Being a Plant” (www.youtube.com/user/Vihart) that considers the Fibonacci phenomenon.

2.7 Functions and strategies / Workbook pages 20/21

| Discussion, work task | Scissors, adhesive tape, pen | 20 min. |

The survival of a species is elementary to all living creatures. They have developed the most varied of strategies for this. Are the children able to name any strategies plants use to spread their seeds? Different methods are described in the workbook.
The instructions to make a maple seed model to see how it flies can be found on page 21. The children can cut out the template on page 20.

**Info:**
Can the children remember how the maple seed flies? Some of the maple seed models will fly better than others. There are countless different ways to spread seeds. They fly, roll, are eaten, get caught in animals’ fur or simply drop to the ground. Over time, the seeds have evolved so that they can be spread in the most effective way possible.

The children should stand in a circle and all throw their model up into the air at the same time. The longer the seeds remain in the air, the further they will be carried by the wind.

**Tip:**
Instructions for making the model are available in the online playlist at http://1qm-wald03.u-x.de. The children should write their names clearly on their model so that these can be identified after the test flight!

The children should hold their seed model like in the picture above when they throw it up in the air.
A field trip to a local forest, park or even just a tree in the school grounds is a central component of the project. "One square metre" should be examined in great detail. The focus is on exploring the wealth of different shapes and aesthetics. The tasks aim to help the children to explore the details that they may well have overlooked otherwise. The magnifying lenses for smartphones included in the kit can also be used here to reveal the invisible.

Afterwards, the children can review everything they discovered during their trip. They should each select one of the items they found to include in their exhibition. The unfamiliar world discovered with the zoom should be recreated on a larger scale in a paper model.

IMPORTANT!

Pictures of the children's finds can be presented in an online gallery as a complement to the practical exercises and field trip. Before they can upload their pictures, access must first be granted to the website.

Website: http://1qm-wald.klimabuendnis.eu

Please request access before you go on your field trip! Watch the following video for instructions on how to register. Your username and password are indicated in your introductory letter.

Video: http://1qmWald01.u-x.de

3.1. Preparing for the forest visit / Workbook pages 22/23

<table>
<thead>
<tr>
<th>Task instructions</th>
<th>Magnifying lenses, smartphone</th>
<th>15 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The toolkit contains magnifying lenses that will allow the children to transform their smartphones into mini microscopes. Please see page 23 of the workbook for instructions on how to attach the magnifying lens to a smartphone using an elastic band. Make sure the writing faces outwards. Use the picture of a golden ground beetle at the bottom of page 23 to practice focusing. The Latin name of the beetle, <em>Carabus auratus</em>, is concealed on its back. To obtain pictures that are in focus, you will need to go very close to the object with the lens attached to the smartphone (within a few millimetres!).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIELD TRIP

3.2. Forest rules / Workbook page 23

| Preliminary discussion | Scissors 15 min. |

We have learned that the forest is home to a great many wild animals and plants – and we must always be considerate of these. Many are also endangered and protected by special laws. It is therefore extremely important to discuss the rules outlined on page 23 with the children before the field trip and to also keep a close eye on them during the trip itself. The children can cut the rules out and fold them up to take along with them to the forest. They can use the back to make a note of their observations.

3.3. Visiting the forest / Workbook page 24

| Preliminary discussion | 20 min. |

There are thousands of different things to explore in the forest. To make optimal use of time during the trip, we have prepared a detailed plan. We recommend discussing the key tasks with the children beforehand to ensure that they know what they need to do when they arrive in the forest.

Important: When the online gallery has been set up, you will be sent a link that you should write on the board.

The children then simply need to write the final part of the web address in their workbook.

Upload address:
http://1qm-wald.klimabuendnis.eu/upload/.............

Forest rules

1
Avoid making any loud noises. This may startle the animals.

2
Wherever possible, stick to the paths.

3
Take care to not disturb any animals during your visit.

4
Do not pick any plants needlessly. If you do pick anything, then pick as few as possible.

5
Do not collect any endangered species.

6
Handle any creatures you catch (e.g. insects, spiders, worms, etc.) with care. They should only be kept in the insect trap or Petri dish for a short time for observation. You should then set them free again where you found them.

7
If you turn over any stones or dead wood to search for small creatures, be sure to turn them back over again.
Visiting the forest (see workbook)

1. Before you set off for the forest, cut out the exhibition notes on the left of this page.

2. Find a suitable place with a tree. Stand in a semicircle with the others for five minutes. Keep quiet and observe the site. What do you notice? What can you hear? What can you smell? What do you feel? What else can you observe?

3. Jot down a few preliminary observations about the exploration site in your exhibition notes.

4. Collect sticks to mark out the area.

5. Attach the string to the tree trunk and set up the sticks around the tree like in the picture on page 25.

6. After marking out the exploration site, begin taking a careful look around you. What can you find there? Pay close attention to the smallest of details. It is often possible to discover a whole wealth of details by taking a closer look.

7. Select two items that particularly interest you. They should be no bigger than half a walnut. Please return larger finds or creatures once you have taken a picture.

8. Complete the exhibition notes.

Back in school

Take a picture of the items you have found.

1. Upload your favourite picture to the following website:

   http://1qm-wald.klimabuendnis.eu/upload

2. Your teacher will then print the picture out for you.

3. Stick the picture in the space provided on the exhibition notes.

Need help uploading your picture? Instructions are available online:

   http://1qmwald01.u-x.de
FIELD TRIP

3.4. In the forest / Workbook page 25

<table>
<thead>
<tr>
<th>Field trip</th>
<th>Pen, writing pad, smartphone, toolkit</th>
<th>1–4 hrs.</th>
</tr>
</thead>
</table>

It is important and wonderful to experience the silence of the forest and the tranquil sounds there (audible as long as there are no other sources of loud noise nearby!). This is not as easy with large groups. Just a few minutes of consciously remaining still and quiet are enough to be able to hear a great deal more though.

The children should work in small groups during the field trip. Where possible, please divide up the materials in the toolkit between five groups. The diagram on the next page shows how the area the five groups should explore can be marked out with sticks. The children should work as independently as possible during their time in the forest.

If no forest is available, a chalk circle can instead be drawn somewhere in the local area.

Please also ensure that the children’s finds are not too large! They should fit into the box and therefore be no larger than half a walnut.

Info:
Checklist of toolkit materials

- 10 x collection pots
- 10 x collection trays + 10 x paper clips
  (for the collection trays: line up the two holes and fix them with a paper clip)
- 10 x wooden tweezers
  (take apart again afterwards)
- 10 x exploration sticks
- 5 x 5 magnifying lens (5 x magnification) + 5 x elastic bands
- 5 x 9 magnifying lens (9 x magnification) + 5 x elastic bands
- 1 x 6 metres string
- 1 x glass Petri dish
- 1 x Snapy insect trap

Tips/instructions:

What else the children will need:
- something to lean on when writing their exhibition notes
- pens for making notes
- plastic bags to kneel on might also be useful in case the ground is damp!

What the children could find and examine:
e.g. inanimate objects (wood, bark, nests, skin) / living plants, moss, lichen, algae / mushrooms / living (moving!) creatures (insects, worms) / dead insects and remains (e.g. butterfly wings)
Remains of larger animals (feathers, bones)
FIELD TRIP

Mark out the exploration site

Attach the string to the tree trunk and use the end of the string to mark a circle around the tree.

Put a stick in the ground approx. every 30 cm around this circle. Because the string is wrapped around the tree trunk, it gets shorter and shorter and the circle grows smaller. This will create a spiral with an “entrance”.

TOOLKIT

Each group will be provided with the following materials:

- 2 x collection trays
- 2 x metal collection pots
- 2 x wooden tweezers
- 2 x exploration sticks
- 1 x 9 magnifying lens (9 x magnification)
- 1 x 5 magnifying lens (5 x magnification)

The groups will need to share the following materials:

- 6 m string
- 1 x glass Petri dish
- 1 x Snapy insect trap
DISCUSSION

3.5. How valuable is the forest? / Workbook page 26

| Individual work, discussion | Small pieces of paper | 20 min. |

The children have now investigated the forest in detail and also experienced it for themselves during the field trip. Use the first two questions on this page to get the children to consider the value of forests either individually or as a group. What is the value to humans, plants and animals, the environment and our planet?

The conclusions reached can then presented during a class discussion. Get the children to write down their ideas on small pieces of paper and work together to attempt to sort these by importance.

What is essential for individuals, society and our future?

"Don’t you know what a forest is? – Is a forest simply ten thousand cords of wood? Or is it a verdant delight for all mankind?" (Bertold Brecht in 'Mr Puntila and his Man Matti')

Questions and answers:

What aspects of a forest are valuable to humans?
- offer a place of tranquility and relaxation (stress reduction)
- are a place for children to play and explore
- help enhance health (forest air strengthens the immune system – phytoncides)
- provide oxygen
- filter the air
- store CO₂
- cool the air
- help to regulate the global climate
- filter and store water (water cycle through evaporation and filtration of water)
- important for the material cycle
- help ensure biodiversity (particularly the tropical rainforests)
- source of food
- source of ingredients for medicines
- protect against erosion (the wind and rain carry away valuable soil and with it nutrients and microorganisms).

What else is valuable to humans in forests and forested areas?
- timber industry (firewood, construction wood, raw material for furniture, pulp for paper production)
- space requirements for pastures
- cultivation of diverse plant-based raw materials (oil palm and soy plantations) as food and biofuel – the consequence: decline in biodiversity due to industrial exploitation (monocultures, use of herbicides and insecticides)
- extraction of ores, oil and gas
- construction of dams to generate electricity – the consequence: flooding of entire valleys, displacement of the people living there
- space requirements for roads (infrastructure development)
- tourism
- ingredients for medicines

Info:
There are hardly any untouched forests left in Germany, however the goal has been set to increase the proportion of wild forests to 5% by 2020. Most of the forests in Germany and Europe are commercial forests. The consequence is a massive decline in biodiversity.

Apart from the rainforests, just 10% of species can be found in the remaining land mass worldwide. 90% of species (flora and fauna) can be found in the rainforests.
To recap:
The tropical rainforests are being destroyed at an alarming rate: every year, 13 million hectares fall victim to chainsaws, slash-and-burn farming or flooding. This corresponds to an area the size of Greece every year.

Why is it that we continue to cut down forests despite the fact that we know just how important they are?
What conflicts of interest are there?
What moral conflicts exist?

Can I do anything about this?

A few suggestions:
- use recycled paper, reduce paper usage
- eat less meat
- opt for reusable products
- avoid single-use products
- consume consciously
- complete journeys on foot or by bike
- use public transport
- take holidays in Europe without any plane travel
- get involved in initiatives or start your own

www.wwf.de/themen-projekte/projektregionen/amazonien
www.abenteuer-regenwald.de/regenwald-retten/alltagstipps
www.nabu.de/natur-und-landschaft/waelder/18882.html
www.regenwald-schuetzen.org/projekte-international.html

3.6 The forest as a home / Workbook page 27

Unlike in Germany and other industrialised nations where forests are mostly places for relaxation, research or work, there are actually people who live in the forest all the time in places such as the rainforests of South America. They consider the forest to be an integral part of their lives. While they use the forest, they also care for it. The forest is far more for the people who live there though: it is also their garden, supermarket, pharmacy, playground and “church” – so a religious and cultural space. They know that they must preserve this living space in the long term to be able to survive.

What can we learn from the people who live in the rainforest?

When applied to our planet, the term “sustainability” plays an decisive role. The aim is to help the children to understand that our planet offers limited living space that must also be cared for and preserved.

Questions:
Can the children imagine what it would be like to live in the forest?
What would they “really” miss?
Nancy, Hilda, Brita and Lucia do not go to school. Instead, they learn from their parents, grandparents and the other villagers. Can you imagine learning things like the four girls?

And is there anything in the forest that you would also like at home?
EXHIBITION

To conclude, the children can present their results on the exhibition boards they have prepared (see inside the back cover of the workbook).

The finds collected in the forest and various items created during the exercises and workshops can be used to create a “curiosities cabinet” that establishments such as schools can use over the course of the year to consider different topics covered within the curriculum.

4.1. Exhibition / Workbook page 28

<table>
<thead>
<tr>
<th>Work task</th>
<th>Pen, scissors, glue</th>
<th>45 min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is now time to compile the finds and ideas from the entire project for the exhibition:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- finds from the field trip, stored in the box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- label on page 28 featuring a description of the find for the box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- colour descriptions, shades and samples from page 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- folded exhibition notes from page 24, complemented with the ornament (page 15) and close-up photo printed by the teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- close-up model of one aspect of the find and model label from page 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- forest spirit mask (see inside the front cover of the workbook)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All of the items collected should be stuck or placed on the exhibition board cut out from the back page of the workbook.

The playlist on [http://1qmWald03.u-x.de](http://1qmWald03.u-x.de) features a short video on how to put together the exhibition box and create an exhibition space.

EXHIBITION AND WORKSHOPS 21
4.2. **Zoom focus** / Workbook page 29

<table>
<thead>
<tr>
<th>Work task, discussion</th>
<th>Various materials</th>
<th>45–90 min.</th>
</tr>
</thead>
</table>

Get the children to select one detail of their find to recreate on a larger scale (not the find as a whole, unless it is very, very small). The model should be three-dimensional and fit into a space about half the size of an A4 page.

**Materials:** coloured transparent paper, newspaper, masking tape, PVA glue  
**Tools:** scissors, paintbrushes, pot for glue, bowl of water to wash hands, cloth/towel to dry hands

The playlist on [http://1qmWald03.u-x.de](http://1qmWald03.u-x.de) includes a short video featuring step-by-step instructions on how to make the model.

**Tip:**  
A fascinating video called “Powers of Ten™” by Ray and Charles Eames (1977) is available on YouTube (9 min.).

**Zoom focus** (see workbook)

We will now explain how you can build a model in a larger scale. You should not recreate the whole object you have found but rather just one interesting detail.

At the bottom of this page are two templates. Cut these out and stick them together to create three viewing windows of different sizes. When you now hold this over your find, you will see sections of different sizes. The smaller the viewing window, the larger the zoom factor.

Take a close look at your find through the individual viewing windows and decide which detail looks particularly interesting.

Ideally, crumple up some newspaper to create a rough shape and fix the structure with masking tape. You can then add several layers of transparent paper and decorate the surface as appropriate.
4.3. Forest spirits / Workbook page 31

Work task, discussion | Pens, elastic | 45–90 min.
--- | --- | ---

Set the children one final task: to create a mask for their very own forest spirit. The mask should carry a little secret from the forest with it: the significance of the details discovered in their find. Similar to the close-up images on page 2, the key to the secret lies in the pattern’s function or origin. Does a specific animal or plant use it to scare off their enemies or attract attention? Does it provide stability, enable them to adapt to their environment or ensure good scatter properties? Each mask tells its own forest story if you look closely and ask questions.

A mask template is printed on the inside of the front cover of the workbook. It can be painted or decorated – use paper and card to create an individual design.

The children should cut out the mask. Lay the cutting line over with the dotted line to create a three-dimensional shape. Use glue or tape to attach. Finally, use a hole punch to make holes to thread through the elastic.

The playlist on [http://1qmWald03.u-x.de](http://1qmWald03.u-x.de) includes a short video on how to make a mask.

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Excerpt from the workbook

**Masks**

How would you like to design your mask? Use the colours, shapes and patterns you explored in the “Learning to see” section and observed in nature. Have a think what function your mask should perform. Should it perhaps be enchanting and attract other people, or should it be frightening and scare them away? A variety of different masks are pictured here. What impact do they have on you?

**Instructions**

Which materials could you use? What shapes, colours and ornaments could you use to attract attention and which to frighten or scare off? Decorate your mask accordingly to create a new forest spirit.