

Pappus

PAPPUS

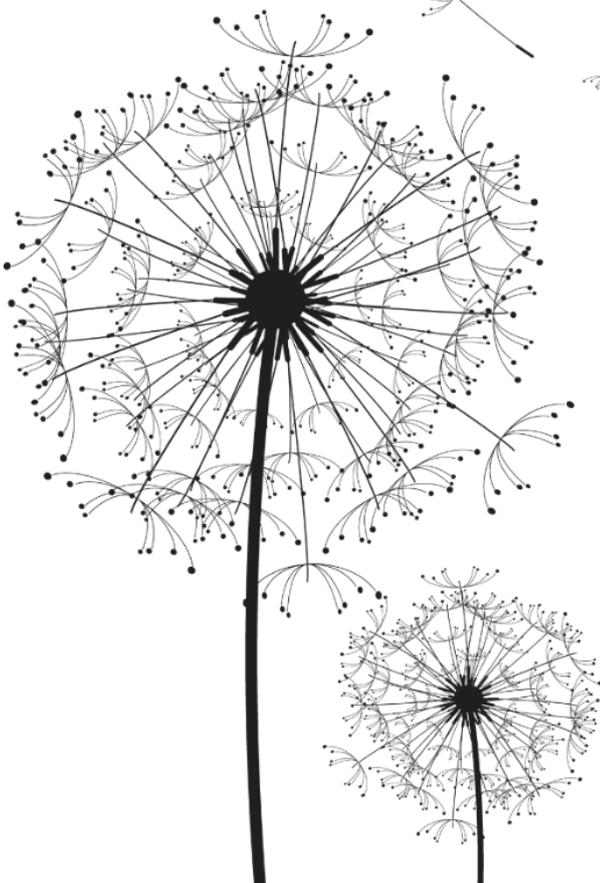
Plants and Play

Promoting Universal

Skills

A Self-directed Learning Guide for
Teachers and Youth Workers

Final Version



Pappus

Pappus

Document Control

Reference:	Plants and Play Producing Universal Skills (PAPPUS)
Activity:	IO3 Document 2 - An Independent Learning Guide for Teachers And Youth Workers
Authors:	This document has been produced under the direction of the University of Gloucestershire with the support of the partner organisations.
Version:	English Translation
Date:	10-5-2022
Disclaimer:	This project has been funded with support from the European Commission. Grant Agreement No. 2019-1-UK01-KA201-061967



This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Partners



University of Gloucestershire (coordinator)
(United Kingdom)
<http://www.glos.ac.uk>



Play Learning Life
(United Kingdom)
<https://www.plloutdoors.org.uk/>



Gesellschaft für Sozialforschung und Bildung
(Austria)
<http://www.gesob.at>



Palacký University
Olomouc

Palacký University Olomouc, Faculty of Physical Culture
(Czech Republic)
<http://www.upol.cz/>



Rogers Foundation
(Hungary)
<http://www.rogersalapitvany.hu/>



Gedania 1922 Association
(Poland)
<http://www.gedania1922.pl>



TANDEM n.o.
(Slovakia)
<http://www.tandemno.sk>

Contents

Document Control.....	i
Partners	ii
Introduction.....	1
Module 1: Introduction.....	6
Session Plan – Module 1: Introduction and Attunement.....	7
Activity 1: Introduction.....	8
Activity 2: Attunement - Meet the tree	10
Activity 3: Childhood in-nature play memories	11
Activity 4: Nature for All (Video).....	12
Module 2: Taking learning and play outside.....	14
Session Plan – Module 2: Taking learning and play outside	15
Activity 1: Benefits of outdoors to children’s well-being and attainment	17
Activity 2: Managing children’s behaviour and attitudes to learning - site mapping	18
Activity 3: Risk Management.....	20
Activity 4: Time and planning for regular outdoor learning.....	21
Activity 5: What subjects can I take outside?.....	22
Activity 6: Recording the Learning	24
Activity 7: Bringing it all together - an action plan for your school	25
Module 2: Appendix.....	27
Module 3: Personal in-depth experience in nature.....	36
Session Plan – Module 3: Personal in-depth experience in nature.....	37
Activity 1: Walk in the forest / park - the plant’s perspective	38
Activity 2: Botany basics	39
Activity 2: Plant recognition.....	40
Module 4: Ecology - Nature as an agent	44
Session Plan – Module 4: Ecology - Nature as an agent	45
Activity 1: Video about ecology.....	46
Activity 2: Interactive lecture on plants as actors.....	47
Module 4: Appendix.....	48
Module 5: Working with plants and children.....	56

Session Plan – Module 5: Working with plants and children.....	57
Activity 1: Design a pedagogical process.....	58
Activity 2: Draft an individual/school action plan	59
Evaluation.....	62

Introduction

The following training curriculum was developed within the PAPPUS - Plants and Play Producing Universal Skills project (2019-1-UK01-KA201-061967), co-funded by the European Union's Erasmus+ Programme. The project explores how plants from both the natural and horticultural worlds can be used playfully to connect young people to their outdoor environments. This connection will not only increase their future expectations and long term understanding of the natural world, but will ultimately develop wider skills and competencies and unlock a greater awareness and understanding of potential linked future career paths.

This curriculum includes 8 modules on plants, learning and play, and was developed to enable teachers and youth workers to incorporate the PAPPUS resources into their work. At the same time, the training curriculum also aims to shape attitudes of participants towards 'being in nature', and the importance of building a personal connection with nature both for children and for adults (e.g. teachers).

Two different pathways have been developed to support learning.

1. A supported training guide for teachers and youth workers.

This document is designed to be run by a facilitator in a school or other setting. The facilitator could be from within the school/setting or from an outside expert. *The modules could be delivered over a 5-day intensive course (see table on page 4 of that document), but we recommend that it is broken down and run as an extended course over 4-5 separate days or 8-10 half days running over a term or a school year (see suggested combination of modules on page 7 of that document). This flexibility has many benefits. There are several elements of Action Learning within some of the activities and modules which require work in the learners' setting. It is also beneficial to run the course over an academic year to benefit from seasonal changes, professional development days, and for plant identification. This file can be downloaded here <https://www.pappusproject.eu/training-course-materials>

2. A self-directed learning guide for teachers and youth workers. (This document)

This second version of the training is for self-paced, independent learning. This offers great flexibility for you to work alone or (preferably) alongside colleagues in your own setting or cluster.

Each guide includes module chapters to easily find modules summaries, activities, resources and appendices. Throughout the course each activity has been linked to show its main focus – theory; practical; discussion; active learning. See the key below:



Theory



Active Learning



Practical



Reflection



Discussion

Learning Outcomes

Each module has been linked to one of the 5 main Learning Outcomes and individual activities carry one or more of the sub-outcomes.

By the end of the course learners will:

1. demonstrate an understanding of the PAPPUS project

- a. name and identify the PAPPUS 15 – our 'top 15' commonly found plants.
- b. show confidence in identifying a range of plant species.
- c. know where to find further support to help them and the children identify plants.

2. understand how natural objects can be used in pedagogical work

- a. describe the benefits and importance of playing and learning outside, with plants.
- b. show an understanding of the opportunities within the formal curriculum to take learning outside.
- c. demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- d. show confidence in using the outdoors to deliver purposeful learning activities.
- e. be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.
- f. use the PAPPUS resources to build up a pedagogical process for their pupils.

3. understand the importance of personal connection with nature when working with plants

- a. show an understanding of the different perspectives of people and of nature.
- b. show an understanding of the ethical questions regarding being 'in nature'.
- c. show an understanding of the connection between understanding, respecting nature and the need to care for it.
- d. build positive attitude towards plants and nature.
- e. build positive feelings and attitude towards nature through the creative arts.

4. demonstrate an understanding of interdependency and connection

- a. demonstrate an understanding of basic ecological principles.
- b. demonstrate an understanding of co-dependency and system thinking.
- c. understand how the language we use determines the way we think.
- d. present and develop examples of positive language use and reconnection with nature.

5. develop personal skills

- a. experience increased cooperative attitude.
- b. experience development of negotiation and communication skills.
- c. give/receive individual positive feedback.
- d. describe experiences

Course Structure

The course for individuals consists of five modules. You can finish these in your own time, and in some cases we suggest some activities to try out with your group of children / young people before moving on to the next Module. The Modules are the following:

1. Introduction and attunement
2. Taking learning and play outside
3. Personal in-depth experience in nature
4. Ecology – Nature as an agent
5. Working with plants and children
6. Evaluation

At the end of the course, you will also be asked to evaluate the course, and share some of your materials (photos, stories) from your experiences via our [social media channels and blog](#).

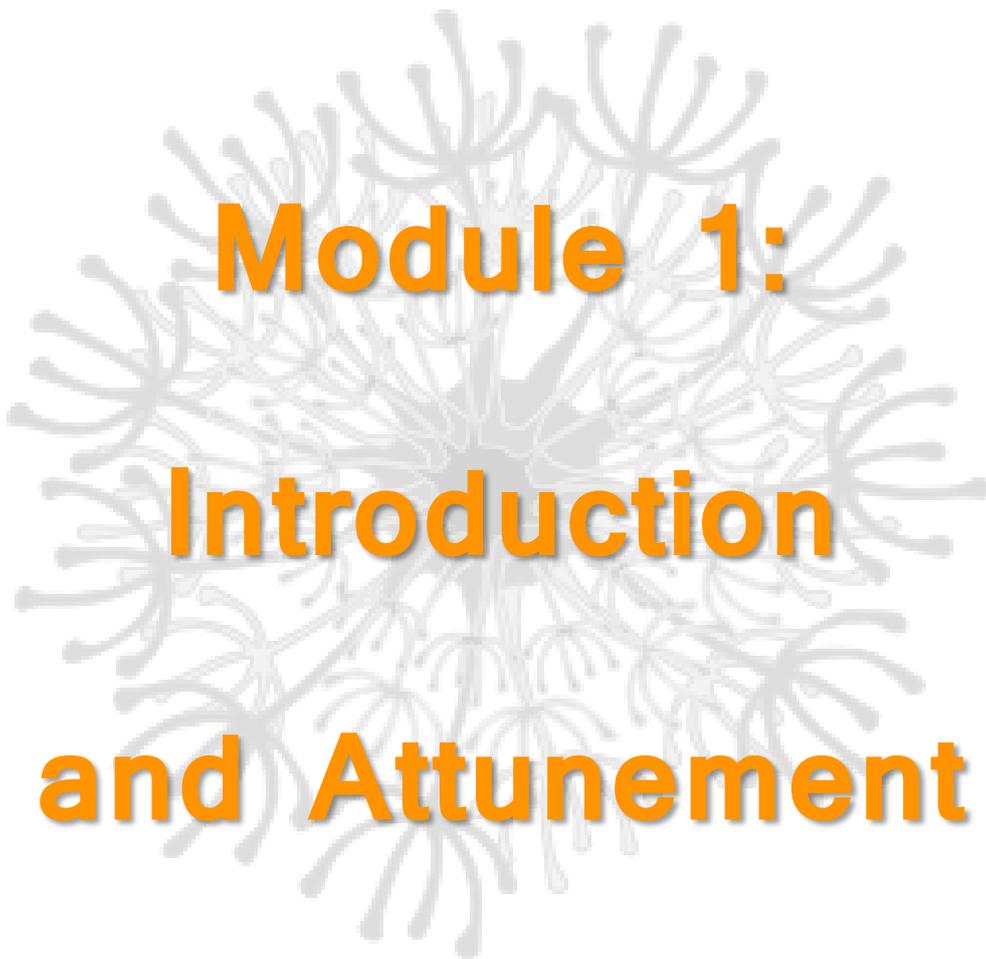
Resources for Delivery

This course is designed to be delivered with minimal resources, alongside the PAPPUS Toolkit which is available in 5 languages here <https://www.pappusproject.eu/toolkit>

A list of useful PAPPUS Resources to aid delivery:

- PAPPUS Toolkit
- PAPPUS Website
- Learning Springboard examples
- Playful Springboard examples
- Plant ID Fact Sheet examples
- Happy Families Card examples
- Fantasy PAPPUS Card examples
- Botanical terms - a glossary and further annotated images showing plant structures in greater detail.
- PAPPUS Discussion Forum

Pappus



**Module 1:
Introduction
and Attunement**



Module 1: Introduction and Attunement

Learning Outcomes

By the end of the session, learners will be able to

1. Demonstrate an understanding of the PAPPUS project.
2. Understand how natural objects can be used in pedagogical work.
3. Understand the importance of personal connection with nature when working with plants.

Session Summary

This session introduces the PAPPUS project and the training plan. It prepares the ground for using plants and other aspects of the natural world in the pedagogical work, showing the importance of a personal connection with nature.

Session Plan - Module 1: Introduction and Attunement

Activity and LO	Time	Content	Method	Resources
Activity 1 LO 1	15 minutes 	Introduction Objective: to introduce the PAPPUS project and the training course	PPT (PowerPoint)	PAPPUS Introductory PPT
Activity 2 LO 2	30 minutes 	Attunement: Meet the tree Objective: get a little closer to thinking of nature differently	Outdoor	Access to outdoor space
Activity 3 LO 3	30 minutes 	Childhood in-nature (play) memories Objective: connect to personal experiences of nature as a basis for in-nature work	Indoor	Paper / pencil / felt pens / colours, etc.
Activity 4 LO 3	10 minutes 	Nature for All (Video) Video about nature (Nature for All) and official opening of the course	Video	Video
Summary	5–10 minutes 	Summing up and reflection		

Activity 1: Introduction

Learning Outcomes:

1. Demonstrate an understanding of the PAPPUS project

Time: 15 minutes

Method: Presentation

Resources

- [Introductory PAPPUS PPT](#)

Activity

Introduction

Welcome to the PAPPUS course. In the following five modules, you will get to learn more about the importance of being outdoors, in nature with children and young people, both for their physical and mental well-being, and for their learning journey. You will find information about the practicalities of designing a programme for your group of children / young people using the PAPPUS resources, as well as about some concepts behind our programme, such as system thinking or ecolinguistics: the role of language in our way of thinking about nature.

Some of the activities in the course are for you as a learner (you can do them either at home or any outdoor space you have access to), while we also suggest some activities you can try out with your group of children / young people in-between the Modules. This is the Action Learning element that helps to inform your practice.

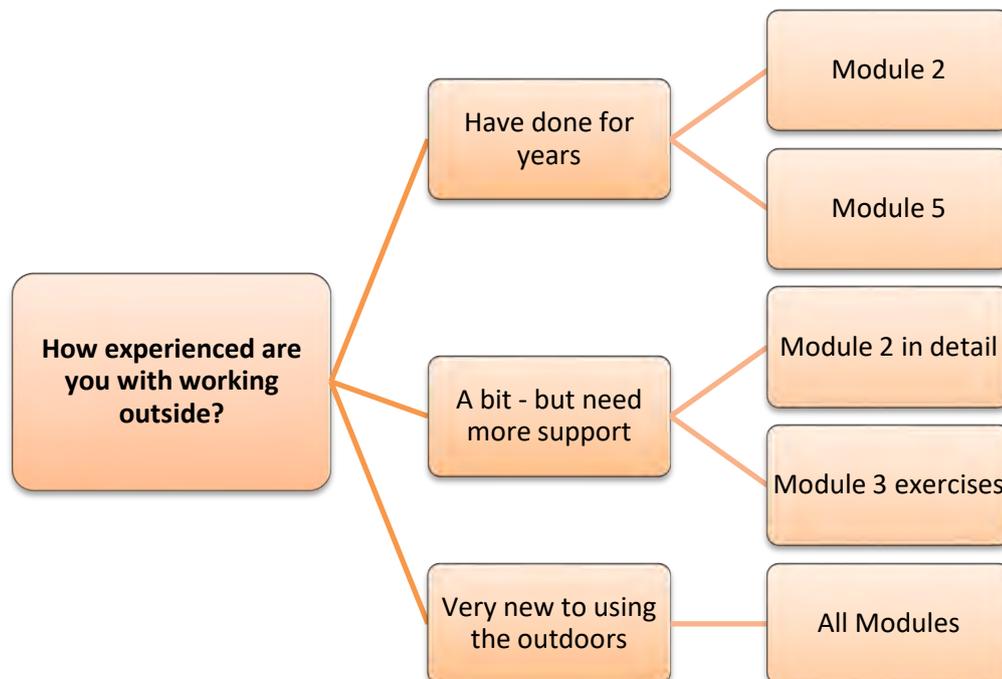
But first, look at the [PAPPUS Introductory PPT](#) (PowerPoint) presentation, to get to know the project through which this course has been developed, as well as the different resources you can use in your practice. Before going forward, look at the PAPPUS website and start to get familiar with the available resources.

How to use this guide?

As mentioned earlier, some of the activities in this guide are for you as a learner, while others you can try out with your colleagues or students. This also means, you have some freedom to decide how you want to use this guide. If you are interested all in all, we suggest you follow the order presented in this guide. But it might help you to decide how to go on, if you think about the following:

- How experienced are you with working outside?
 - If you have done for years, and you are interested in new resources, we suggest to look at first and foremost the website, and the PAPPUS Toolkit to find activities. Within this Guide, we suggest to look at [Module 2 - Creating your Action Plan](#) and [Module 5 - Design your own pedagogical process](#).

- If you feel you need more support in designing your own pedagogical process, we suggest to look at [Module 2](#) in more detail, as you will find information on some logistical, practical question, such as behaviour questions, time planning, etc. For specific activities on plant recognition and supporting students to feel more comfortable in nature, you would benefit from [Module 3](#) exercises (Plant recognition, Botany basics).
- Are you looking for information related to the attitude needed for working with nature (as opposed to using nature)?
 - If you are also or more interested in the attitude behind our project, we suggest you look at [Module 3](#) and [Module 4](#). These contain personal exercises for yourself, and some background information on how we deal with nature from a scientific / ecolinguistic point of view.



Activity 2: Attunement - Meet the tree

Learning Outcomes:

1. Understanding how natural objects can be used in pedagogical work

Time: 10 minutes

Method: Outdoor

Resources

- A scarf / blindfold
- [Playful Springboards](#)

Activity (from the Conifer Playful Springboard)

For this activity, you will need to find an outdoor location where there are trees – you can go to your garden, a local park, etc. The activity works best if you can find someone to do it with - a friend, a family member, a colleague etc.

Variation in pairs

Taking turns, use a scarf to blindfold one of you, and then the other's job will be to lead the blindfolded one to a tree. They can touch, smell, (even taste, if you feel like, 'if safe or applicable') the tree, spending as much time over it as they want. When they are ready, their pair leads them back to where they started. Take the blindfold off, and the person has to find the tree they got to know. Then the pair change roles.

Variation for alone

If you are by yourself, just spend some time outdoors. Find a tree you like on your own, lean on it, look up its trunk into the branches to get a different perspective. Close your eyes, take some deep breaths, touch, smell (even taste, if you feel like, 'if safe or applicable') the tree. Spend a couple of minutes with your tree, while you might think of all the different feelings, intentions you might have in that particular moment.

Through this activity, you can get a little closer to thinking of nature differently. Nature is not something completely separate from us – it is present around us, all the time, and if we just take a moment to recognize it, appreciate it, we can already feel its calming effect.

Activity 3: Childhood in-nature play memories

Learning Outcomes:

3. Understanding the importance of personal connection with nature when working with plants

Time: 20 minutes

Method: Individual – indoor/outdoor

Resources

- Health and Welbeing benefits – see PAPPUS evidence and start to become familiar with what's on the website to support them back in schools/settings. <https://www.pappusproject.eu/training-course-materials>
- Papers, colours

Activity

You might do this activity as a follow up to the previous one, sitting down by the same trees you got familiar with. You can also come back to the room, if you feel more comfortable this way.

First, sit down and take a deep breath, try to become calm and relaxed. Think back to your childhood, when you were between 6-12 years old and remember a time when you were outside, in-nature. Look around in that memory, pay attention to the scenery, what was around: what colours, shapes, textures? Were there specific plants there? What was your connection to these plants? Were you playing with them, or were you part of the scenery? What it felt like to be there? Allow a couple of minutes to make the memory as vivid as possible, slowly open your eyes.

How could you share your story with others? You can either take a sheet of paper and some colours and draw your impressions of it. Or you might also talk about your experiences in a video, that you can also share with others, about the importance of nature in children's lives.

All children have experiences in nature and usually the ones that stick with us are joyful, happy play-memories. Of course, if something frightening happened, such as getting lost in a forest, or coming across a wild animal, that also can be very memorable. It is essential for children to spend time outside, since that is how they build their relationship with their environment; it is where they learn how to be with and in nature. There are obvious health benefits of being in nature – see <https://www.pappusproject.eu/training-course-materials>. When children are playing in nature freely, the role of the adult (just as in an in-door free play session) is to provide a safe environment for them. Of course accidents can happen, and for these cases the adult needs to remain calm, acting as a role model in terms of how to handle these situations.

Activity 4: Nature for All (Video)

Learning Outcomes:

3. Understanding the importance of personal connection with nature when working with plants

Time: 10 minutes

Method: Individual

Resources

- Video about Nature for All on YouTube: <https://www.youtube.com/watch?v=LABTclKQRaY>
- Additional resource: Video of Katalin Czippán from Nature for All: <https://www.pappusproject.eu/training-course-materials>

Activity

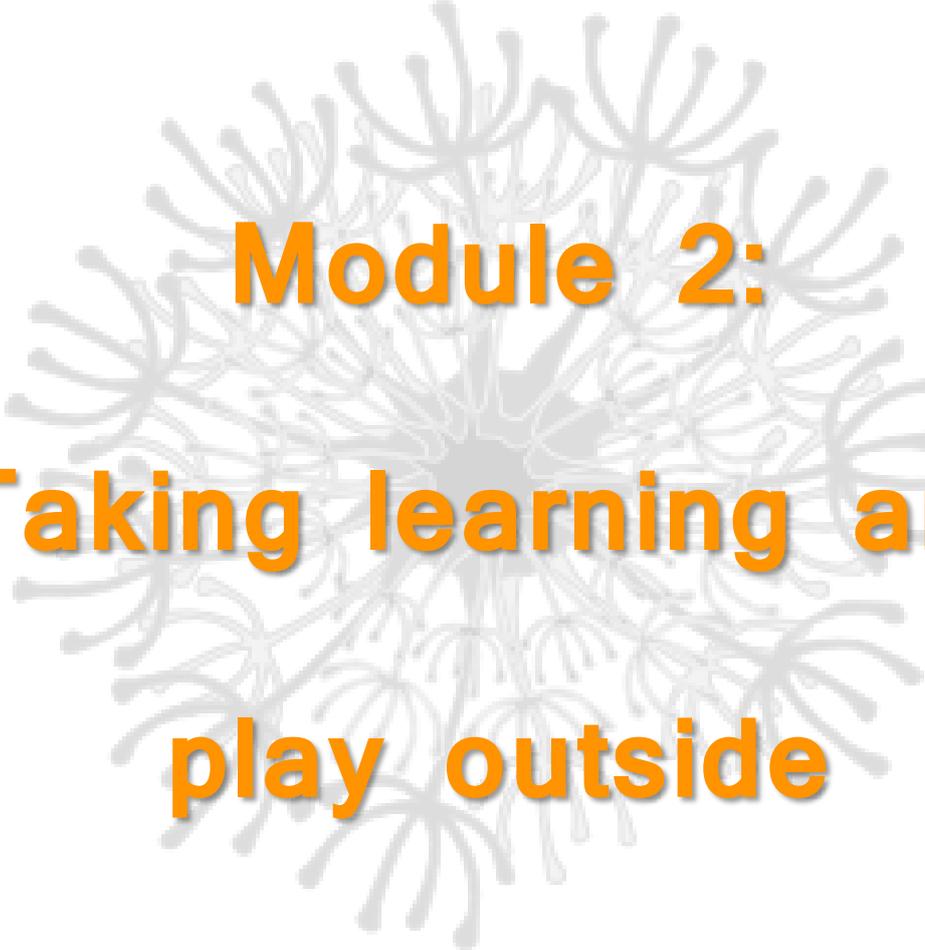
Watch the following video about the initiative *Nature for All*:

<https://www.youtube.com/watch?v=LABTclKQRaY>.

As suggested by the title, Nature is for All, including children and young people. The two, main objectives of PAPPUS is bringing learning into the open air: to enhance the learning of schoolchildren and to help shape their attitudes towards nature. When working outdoors, children are much more motivated for any activity, they generally enjoy themselves better, than in a classroom, and at the same time they can build up their personal connection with nature through respect and understanding. The PAPPUS resources are aimed at achieving these objectives, with the Toolkit's activities and information supporting them. The training course is devised to promote a good understanding of how to get the most out of the Toolkit, within the context of how we can talk about nature and help shape attitudes towards it.

If the Nature For All Initiative raised your interest, have a look at this speech, given by Katalin Czippán from Nature for All during the international PAPPUS training course in Hungary, 2021:

<https://www.pappusproject.eu/training-course-materials>



Module 2:
Taking learning and
play outside

Module 2: Taking learning and play outside

Learning Outcomes:

By the end of the session, learners will be able to

2. understand how natural objects can be used in pedagogical work

- 2a. Describe the benefits and importance of playing and learning outside, with plants.
- 2b. Show an understanding of the opportunities within the formal curriculum to take learning outside.
- 2c. Demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- 2d. Show confidence in using the outdoors to deliver purposeful learning activities.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.
- 2f. Use the PAPPUS resources to build up a pedagogical process for their pupils

Session Summary

This module particularly addresses the concern of teachers for whom taking a class outside is perceived to be more difficult than in play settings. Play leaders may wish to skim the activities related to curriculum delivery.

The purpose of the activities in this module is to support teachers and play leaders to take play and learning outside with plants and to understand the benefits and practicalities of outdoor learning in their own schools/settings, including risk management.

For schools it will be especially beneficial if several teachers/play leaders from each school work on this together and support each other.

Session Plan - Module 2: Taking learning and play outside

Activity and LO	Time	Content	Method	Resources
Activity 1 LO 2a, 2e	40 minutes - 1 hour 	Benefits of outdoors to children's well-being and attainment Objective: to identify key benefits to inform pedagogical process	Individual outdoors with children	Access to outdoor spaces Sketch book/paper and chosen art/mark making materials (pencils etc) PAPPUS PSHE Learning Springboards
Activity 2 LO 2a, 2b, 2c, 2d	1 hour 	Site Mapping Objective: to consider management of children's behaviour and attitudes to learning-	Individual discussion with colleagues outdoors with children.	Site plan or satellite image of grounds. PAPPUS 15 Plant ID Fact sheets
Activity 3 LO 2c, 2e	1 hour   	Risk Management Objective: to review implications for school/setting	Individual discussion with colleagues/site manager outdoors with children.	RBAs The grounds PAPPUS 15 Plant ID Fact Sheets.
Activity 4 LO 2c, 2e	1.5-2 hours  	Time and planning for regular outdoor learning Objective: to identify issues and solutions	Individual discussion with colleagues outdoors with children.	Materials to make "Grab Bags" PAPPUS Maths Learning Springboards

<p>Activity 5</p> <p>LO 2d, 2e</p>	<p>1 hour</p>   	<p>What subjects can I take outside?</p> <p>Objective: to assist curriculum planning within the school/setting</p>	<p>Individual discussion with colleagues outdoors with children.</p>	
<p>Activity 6</p> <p>LO 2b</p>	<p>45 minutes</p> 	<p>Recording the Learning</p> <p>Objective: to plan most appropriate methods in the school/setting.</p>	<p>Individual discussion with colleagues outdoors with children.</p>	
<p>Activity 7</p> <p>LO 2b, 2c, 2e, 2f</p>	<p>1.5 hours plus preparation</p>  	<p>Bringing it all together- an action plan for your school</p> <p>Objective: to create a robust, achievable action plan for the school/setting.</p>	<p>staff meeting at your school/setting</p>	
<p>Summary</p>	<p>5-10 minutes</p> 	<p>Summing up and reflection</p>	<p>Plenary</p>	

Activity 1: Benefits of outdoors to children's well-being and attainment

Learning Outcomes:

- 2a. Describe the benefits and importance of playing and learning outside, with plants.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.

Time: 40 minutes - 1 hour

Method: Group and individual

Resources

- 4-slide [PAPPUS Introductory PPT](#)
- PSHE [Learning Springboards](#)
- Evidence on Erasmus+ page of website <https://www.pappusproject.eu/erasmus>

Activity

- 1) Look again at the 4 slide [PAPPUS introductory PPT](#) prepared to help you to disseminate PAPPUS to your school/setting
- 2) Read Learning Springboard PSHE 'Find time for mindfulness'.
 - a. Look at the following PSHE learning springboards and chose one of them.
 - PSHE "silent walk"
 - PSHE "Micro-hike or sitting contemplation"
 - PSHE "Winter walking and cloud watching"
 - PSHE "Mindful observation and drawing"
 - b. Go into any outdoor open space where you can see and feel plants, trees, shrubs, grass. Make yourself comfortable on a log/mat/portable seat. Carry out the activity yourself, enjoying the mindfulness, and taking notice of any changes you feel within yourself when immersed in the natural world. Relax and enjoy the feeling.
- 3) Look at the evidence collated here <https://www.pappusproject.eu/erasmus>
- 4) Ask yourself these questions, and note the answers in your sketch/note book
 - a. How did you feel when you worked outside?
 - b. What evidence did you feel was most useful to promote in your school/setting to help change the culture around outdoor learning?

How can you disseminate this in your school/setting? Edit the PPT slides to make them bespoke to your school.

Activity 2: Managing children's behaviour and attitudes to learning - site mapping

Learning Outcomes:

- 2a. Describe the benefits and importance of playing and learning outside, with plants.
- 2c. Demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- 2d. Show confidence in using the outdoors to deliver purposeful learning activities.
- 3a. Show an understanding of the opportunities within the formal curriculum to take learning outside.

Time: 1 hour followed by time in school working with children

Method: Individual, discussion with colleagues, outdoors with children

Resources

- Site plan or satellite image of grounds.
- PAPPUS 15 [Plant ID Fact Sheets](#)

Activity

- 1) Note 2 or 3 examples from your experience of children who have 'bloomed' outdoors. Think about their experience from their point of view. Think also about children who perform well inside, but feel at a disadvantage outside. (This is also character building.) Imagine yourself in the shoes of these children. What was it about the activities the children were carrying out that improved their on-task behaviour? Use this information when you 'map' the grounds.
- 2) **Mapping** – find a site plan of your grounds (or use a satellite image)
 - a. Participants take a group of children outside to map the grounds in terms of learning and play 'affordances' (or participants can carry out this exercise themselves and/or with a colleague from the same setting.)
 - b. If children are involved they can draw their own maps and record memorable learning experiences outdoors. Ask them to explain why they thought it memorable, and how they felt it impacted on their behaviour. This will be instructive and give you an insight into planning to promote positive attitudes to learning.
 - c. Identify, take photographs and plot on the drawn map/site plan/satellite image:
 - Places already used for specific activities.
 - Places for small group activities.
 - Large scale class gathering places for plenaries.
 - Quieter places (away from traffic and other disturbances)
 - Places with an abundance of plants to observe/interact with.
 - Key habitats.
 - Places where loose natural materials can be collected (Sticks, stones, leaves etc.)
 - Changes in topography
 - Good vantage points for field sketching
 - Places with access to water for big wet messy activities

- Playground markings and grids for versatile activities.
 - Specific features that are currently used to support learning outdoors
 - Think creatively about new places and features that could be used to support learning outdoors
- d. On a separate plan, plot the locations of any of the PAPPUS 15 plants that are already on your site. (see PAPPUS [Plant ID Fact sheets](#) and [Module 4](#)). This will help all your staff at your setting to make use of these common plants to carry out the activities in the Learning and Play springboards. Think about where you might plant some of the missing plants.
- 3) Practicalities** - Think about how you manage groups for regular outdoor activities already, such as PE (usual procedures for inhalers etc. will apply- see [Activity 3 - Risk Management](#)). Do you need any additional procedures (e.g. a 'recall' system such as a whistle/horn when children are dispersed to roam within agreed boundaries while carrying out a task). This is also for emergency use and to bring them together so they can hear your 'talking' voice.
- 4) Dissemination**
- a. Discuss your map, photos and procedural thinking with colleagues.
 - b. List any action points that arise (such as targets for regular outdoor learning, or a timetable/booking system for any key outdoor spaces?) This document can be shared with senior leadership and become the beginning of a development tool.

Activity 3: Risk Management

Learning Outcomes:

- 2c. Demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.

Time: 1 hour plus on-site work with children

Method: Individual, discussion with colleagues/site manager, outdoors with children

Resources

- RBAs
- The grounds
- PAPPUS 15 [Plant ID Fact Sheets](#)

Activity

- 1) **Review your school Risk Benefit Assessment (RBA).** This will cover learning outside in the school grounds without any additional requirements for separate assessment (but do check with your senior leadership team if you have any concerns). Your usual plans for PE, (access to toilets, epi-pens/inhalers etc) will apply to any learning outside too. (e.g. use a white cloth shoe bag with a red cross on it, for example)
- 2) **Talk to site managers.** Check with your site management what arrangements are in place to remove any particularly toxic species, but also discuss that children need to learn from experience that some are prickly (brambles) or sting (nettles) and that these should not be removed from the whole site.
- 3) **Identify suitable plants.** Take a group of children outside with the PAPPUS 15 Plant ID Fact Sheets. Discover which plants are edible, which have been used for medicinal purposes etc., [referring to the plant identification sheets in the online toolkit](#). In section 2 you reviewed the grounds to plot where natural materials are plentiful, you will need to do this during several seasons of the year. Children can be encouraged to use and pick plentiful plants for activities and learn **when not to pick or lick!**
 - a. Think about how you will help children learn that some plants are prickly, irritant or toxic.
 - b. Know where to look for sources of advice about plants.

Activity 4: Time and planning for regular outdoor learning

Learning Outcomes:

- 2c. Demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.

Time: 1.5-2 hours

Method: Individual, discussion with colleagues/site manager, outdoors with children

Resources

- Materials to make “Grab Bags”
- PAPPUS Maths [Learning Springboards](#)

Activity

1) Think about the practicalities

**See Handout [Module 2: Activity 4, sheet 1](#) for further instructions.*

2) Resources

**See Handout [Module 2: Activity 4, sheet 2](#) for further instructions.*

3) Plan an activity with your class outdoors using the resources - Look at the Maths learning springboards, and plan an activity relevant to your class for next week. E.g. Maths - Algebra, Carrol diagrams, Venn diagrams. or Maths - Place Value.

Discuss the benefits and any issues with colleagues and note any changes in procedure etc that would facilitate similar activities.

Activity 5: What subjects can I take outside?

Learning Outcomes:

- 2d. Show confidence in using the outdoors to deliver purposeful learning activities.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.

Time: 1 hour

Method: Individual, discussion with colleagues/site manager, outdoors with children

Resources

- PAPPUS resources
- Copies of subject notes printed out
- Participants to be able to access the LS and PS on their phones? Otherwise these can be printed.

Activity

The notes below can be split into subjects and given to groups to discuss.

*See Handout [Module 3: Activity 5](#) for further instructions.

The PAPPUS Learning Springboards

The subject and plant specific documents on this website have been devised as springboards for your own creativity as leaders of learning and play.

This activity asks you to take a closer look at these springboards to become familiar with all that they offer. Remember too that some of the tasks suggested in the springboards could be given as homework tasks as well.

In England, a very useful reference is the Council for Learning Outside the Classroom (LOtC), which also offers an LOtC Mark accreditation scheme to schools that recognises the use of the school grounds, local area, expert visitors, trips and other experiences outside the classroom. <https://www.lotc.org.uk>

TASKS

1. Discuss the subject overviews in the handout. What can you add?

2. Playful learning - class task.

Choose a core school subject (such as maths, or literacy) and think about a specific topic within that subject. The idea of this activity is to think about how these topics might be taught in playful ways. You will know which of the PAPPUS 15 plants you have easy access to. Look at the [Play Springboard](#) for these plants. Plan an activity for your class/group to carry out next week. (using the ideas in the play springboard for your chosen plant)

After the task, ask the children to evaluate both their learning and the impact of being outside using plants.

There are countless ways to make classroom activities playful. Teachers may teach in the way they have learnt and practiced, especially when newly qualified, but playfulness in teaching is beneficial to the children and the teachers too. Discuss playfulness in pedagogy with your colleagues.

3. Subject specific planning- class task.

Choose one curriculum subject (see overviews in handout).

Look at the learning springboards in that category and your medium term plans for the subject.

Some subjects are taught with very specific schemes of work set out, but even within those constraints you can use your creativity to incorporate an idea from the learning springboards that takes the learning outside with plants.

Make a clear plan to carry out with your class this term

After the task, ask the children to evaluate both their learning and the impact of being outside using plants. Discuss the benefits and any issues arising and solutions that can make it easier to take the learning outside on a regular basis.

Activity 6: Recording the Learning

Learning Outcomes:

- 2b. Show an understanding of the opportunities within the formal curriculum to take learning outside.

Time: 40 minutes

Method: Individual, discussion with colleagues/site manager, outdoors with children

Resources

- 4-slide [PAPPUS Introductory PPT](#)

Activity

1) Question the need for recording learning.

Sometimes, in primary education especially, it is instructive to observe Early Years practitioners for how children learn outside. You will see that you don't necessarily need lots of resources or recording, but that much of the learning takes place because of skilled questioning by the staff. This is true inside your classroom too, so why does this inhibit some teachers from taking the learning outside? Is it a cultural issue in the school? Does senior leadership encourage enrichment of learning outdoors? Do other staff think that only 'play' takes place outdoors? Do you need to show your staff the PAPPUS 4 slide, staff meeting PPT, and disseminate more about the value and benefits of learning outdoors?

2) Methods of recording learning.

Individual cameras and iPads help the children to record their activities. Printed photos can be annotated by them. Sketch books and scrap paper/ notes recording data etc., can also be stuck into work books. Parents also like to see them on open evenings. Evidence of this type of work also shows it is part of the long term planning.

Plan what will work best in your school.

Activity 7: Bringing it all together - an action plan for your school

Learning Outcomes:

- 2b. Show an understanding of the opportunities within the formal curriculum to take learning outside.
- 2c. Demonstrate the importance of planning, preparation and risk management to facilitate regular and progressive use of the natural world for play and learning.
- 2e. Be familiar with the full range of PAPPUS resources and how to use them to deliver specific learning outcomes.
- 2f. Use the PAPPUS resources to build up a pedagogical process for their pupils

Time: 1-1.5 hours plus preparation time

Method: Staff meeting

Resources

- Make Character cards from [Appendix](#) to hand out to participants.
- You may wish to prepare a template for an Action Plan or use a layout that the school is already familiar with.

Activity

This task needs to be carried out with your staff team, outside if possible.

Prepare a summary of the key outcomes from the previous activities and present the Curriculum and Plants Maps from [Activity 2](#) and [3](#).

Activity 1 - Staff Meeting.

Ask participants to get into small groups and review the outcomes from the previous activities. Each group identifies what they feel should be the main objectives.

Compare and agree the key objectives.

Activity 2 - A staff meeting "In Character"

It may be helpful to look at the objectives from different perspectives. This adds a bit of fun too. Present them with different characters, (*See Handout [Module 2: Activity 7](#)), and ask the group to imagine themselves in the position of that person and imagine how this person would react to the objectives. Spend a few minutes in this character's shoes, then move to the next character.

Make notes during the discussions on a flipchart, pointing out the different ideas.

After going through all the viewpoints draw the attention of the group to the notes you have made and ask them to look at the list. Ask them to go back to their objectives with a clear mind (that is, no longer in their characters) and see if there is anything that they would like to change in them, based on the list of reactions from the characters.

Do you need to make any edits to the school development plan?

Create an action plan, with target dates and tasks allocated. What are your next practical steps - this week, next half term, next year?

Your Action Plan task list might include some of the following:

- ✓ review the school risk benefit assessment and mobile phone policy
- ✓ invest time in setting up grab and go resources for yourself and the pupils
- ✓ work with other staff to pool ideas and resources and share best ideas
- ✓ celebrate learning outside with the parents
- ✓ build routines with the children as this will save time in the long run
- ✓ have fun!



Module 2: Appendix

Handout: Module 2, Activity 2

- 1) Identify, take photographs and plot on the drawn map/site plan/satellite image:
 - Places already used for specific activities.
 - Places for small group activities.
 - Large scale class gathering places for plenaries.
 - Quieter places (away from traffic and other disturbances)
 - Places with an abundance of plants to observe/interact with.
 - Key habitats.
 - Places where loose natural materials can be collected (Sticks, stones, leaves etc.)
 - Changes in topography
 - Good vantage points for field sketching
 - Places with access to water for big wet messy activities
 - Playground markings and grids for versatile activities.
 - Specific features that are currently used to support learning outdoors
 - Think creatively about new places and features that could be used to support learning outdoors

- 2) On a separate plan, plot the locations of any of the PAPPUS 15 plants that are already on your site. (see PAPPUS [Plant ID Fact Sheets](#)). This will help all your staff at your setting to make use of these common plants to carry out the activities in the [Learning Springboards](#) and [Play Springboards](#). Think about where you might plant some of the missing plants.

Handout: Module 2, Activity 4, sheet 1

1) What?

Review your planning documentation, long-term/mid-term and short-term. Is there an “outdoors” prompt? (As well as a prompt to consider trips/visitors etc. to enrich learning.) Many schools find an ‘outdoors’ reminder very helpful to think about any aspect of the learning that would benefit from a session outside, even if it is only a few minutes to gather some data, or collect some words.

Subject specific planning will be discussed in the next section.

2) When?

If outdoor clothing takes time to put on, then plan tasks for when the children are dressed for outside anyway, such as before or after break, or take registration outside (if it is on a mobile system.) Make notes about what would work for you.

3) Toilets and hand washing?

You may find that children ‘need’ the loo less when they are busy and engaged outside. There is a lot of advice out there, and your school/setting will have its own policies. At the simplest, if you are working outside close enough to the building children can go inside. Making your own DIY ‘Tippy Taps’ from recycled containers may be a solution to handwashing in some places.

Review the situation in your school and note any changes needed.

4) Clothes?

Review your uniform policy and the parents’ home/school agreement. Does it need editing to require children to wear suitable clothing to be outdoors in all weathers, and do you have a blanket permission for brief, off-site trips into the local area?

Clothing is an issue for many schools, even where this is a requirement, but it is most important to collaborate with parents to ensure children arrive ready to learn outside, (suitable clothes and footwear) as an everyday expectation throughout the year. Being outside for play and learning, as an everyday practice, will also help parents realise that their children need outdoor clothing every day, and not just on ‘Welly Wednesdays’ There will be times when outside is uncomfortable, but effective beneficial activities do take place and resilience is learned!

Help parents to understand the value of learning outside for their children’s education, health and wellbeing, through your regular communication channels, open days etc.

5) Where?

Curriculum use of the grounds has been discussed in the mapping exercise in Activity 2 above. In this exercise think about where you personally will be confident to take your class at this stage. Be familiar with which of the PAPPUS plants are on your site and where.

- Quick/close to classroom – ‘inside’ work just outside the classroom.

For this, you may only need the children themselves and a space to stand. (e.g. a paired talking task, or a circle time/plenary discussion.) For some individual tasks they may need only clip boards and a space to gather, either sitting or standing. Remember that if children have clip-boards they can rest them on any surface, such as a wall.

➤ Further afield

New tasks that support the key learning objectives, but require the children to explore further. This could be a task such as searching for twigs and sticks to make a fraction wall, or a variety of leaves to make a symmetrical pattern, or to gather data for charts and graphs.

➤ Longer term plans for a progressive series of outdoor tasks.

As you become more confident, and outdoor learning is embedded, you will spend more time outside on more complex tasks and may move further away from the building to use playing fields or woodlands, (if you are lucky enough to have these on-site.) Even in an urban site you will find creative ways to engage your learners and develop a new expectation for using the outdoor environment on a regular and progressive basis.

➤ No paper homework

Schools have become even more proficient in planning this due to home schooling with parents during Covid. (E.g. going for a walk to discover something relevant to a learning outcome, or a Nature table challenge to bring in something the teacher can't ID!)

Handout: Module 2, Activity 4, sheet 2

1) Children's outdoor 'grab bag' kits

Plan for the children to need to take NO special resources, or very few, to learn outside. Skilled questioning is often more important than lots of resources. Take a leaf from Early Years practice and model the inquiry process with your children outside.

For primary children, this is a useful kit; a clip board (pencil attached), simple 'sit mat'. (small piece of yoga mat/old tarp, or a small plastic bag with a folder newspaper inside, taped together) and a chunky chalk or two for some activities. A piece of rope that is cut to a 1m length, marked in 10cm increments is a very versatile piece of kit for a wide variety of mathematical and artistic tasks outside. If they can each bring a 'bag for life' to keep in school with this kit in, it will always be ready for use. You will add to this as your repertoire expands. At the end of each session the children will need to check that their kit is complete and hang it on the peg ready for the next day. This becomes routine after a while and saves a lot of time in the long run.

2) Teacher's outdoor 'grab bag' kit?

Develop your own 'grab bag' of whatever you need to feel comfortable working outside; clothing/footwear, phone/tablet, communication cards, your own sit mat/camp stool, and resources such as an A2+ **what does this mean? Do you mean A4 or A3? A2 is massive to cart around outdoors and expensive to buy** chalk/clip board, if required – PAPPUS top tip: white-boards do not work well in damp conditions!

Many of you will be very familiar with working outside with your class, but for others this may be more of a challenge, so do start with where you feel comfortable. There are several options, progressing from tasks similar to inside, working close to the building, to wider use of the grounds and natural materials as learning resources. Some practicalities are also discussed here to help answer some common concerns.

Aim to provide an environment that helps to focus on the learning. There is nothing simpler than natural materials, found objects and a well prepared 'grab bag'.

Handout: Module 2, Activity 5

DISCUSSION - SUBJECT OVERVIEWS

Literacy

The ideas in the literacy springboards are just a taster of the many ways that plants can be a stimulus for a wide variety of fun and engaging learning tasks outside. The starting point is often the plant itself, perhaps as part of an introductory relaxation exercise, followed by scaffolding for descriptive and metaphorical use of language in poetry and then extending into Shakespeare, for example.

This is a suggested process for language development.

- observation of a plant
- sensory experience through handling
- listing/naming its parts
- turning these nouns to adjectives
- using the adjectives metaphorically or as simple images to apply to human being/situations
- seeing how Shakespeare and other authors do it

Some of the springboards also look at opportunities for reading and writing non-fiction texts, myths, legends, etymology, drama and verbal presentations.

Maths

The natural loose parts resources provided by plants are very versatile and can be used as 'manipulables' to explore a number of mathematical concepts, particularly at KS1 and KS2.

If the principles of maths can be explored actively in a fun and engaging way outdoors, the quality and variety of mathematical language used will help to clarify pupils' thinking. The written work back in class is then likely to be completed with greater understanding. These springboards aim to provide ideas for getting outdoors and active with your pupils, on a regular basis. Plan for a progression of tasks to support the key learning objectives throughout each school term.

The Sciences

Plants are an obvious element of the biology curriculum with which you will be very familiar. These springboards give you more detail on how they can also contribute to Chemistry and, perhaps surprisingly, to Physics too. Some activities relate directly to the PAPPUS 15 plants while other activities cover use of plants more generally.

Plants lend themselves to inquiry-based learning in so many ways. Growing from 'seed to seed' shares with pupils the whole lifecycle of a living thing, and indeed helps to answer the question, 'Is this alive?' Pupils also need to learn to ask if a plant or berry can be touched or eaten, so introducing them to the risk of irritants and poisons is a life lesson well learnt early.

The study of biology and other sciences without fieldwork takes away the opportunity for pupils to feel the excitement of discovery. This reduces the quality of their learning experience. It can render the subject drier and less relevant to their everyday lives and the importance of other inhabitants of the planet with which we co-exist and on whom we depend.

SAPS www.saps.org.uk is an essential reference for Science and Plants in UK schools.

Creative Arts

There are many positive benefits of using the outdoors for the creative arts, not least that the endorphins can run more freely, generating positive feelings, which in turn can spark greater creativity.

The space available outside offers more scope for louder, wetter, messier and more physical activities and gives pupils more freedom to express themselves with fewer constraints.

The natural world can offer artistic inspiration along with plant-based materials and resources with which to work on colour, pattern, texture, line, form, space, biomimicry, biophilia, dramatic interpretation, sound and music.

Some of these ideas are specific to the PAPPUS 15 plants, and other activities can use any plants, so are very versatile.

Social Sciences

Our history and the geography of our land is evident all around us. Plants can play a valuable role in helping children to understand the evolution of landscapes, woodland history, clearances, enclosure etc. Uses of plants in the past can be linked it to current uses in medicines and cosmetics for example. The ancient Greeks and Romans ate dandelions and used them medicinally.

Investigation skills and field sketching using plants enriches understanding of how the landscape around us is shaped by people and nature.

In religious education, the springboards explore how faiths and their sacred texts discuss plants and ecology in the context of our responsibilities as humans to the other inhabitants of our planet.

Design Technology

Use of tools, selecting materials and design for function and structural stability is a key element of DT education. Biophilia and biomimicry are exciting areas of exploration with increasingly interesting new applications in industry to solve problems relating to materials and function.

There are many ideas on the springboards for activities using coppiced and natural materials which are very versatile for DT projects (e.g. Play springboard - Hazel).

Food and cooking are obvious uses of plants in the curriculum. Information about edible plants and recipes for cooking are found mostly in Playful Springboards.

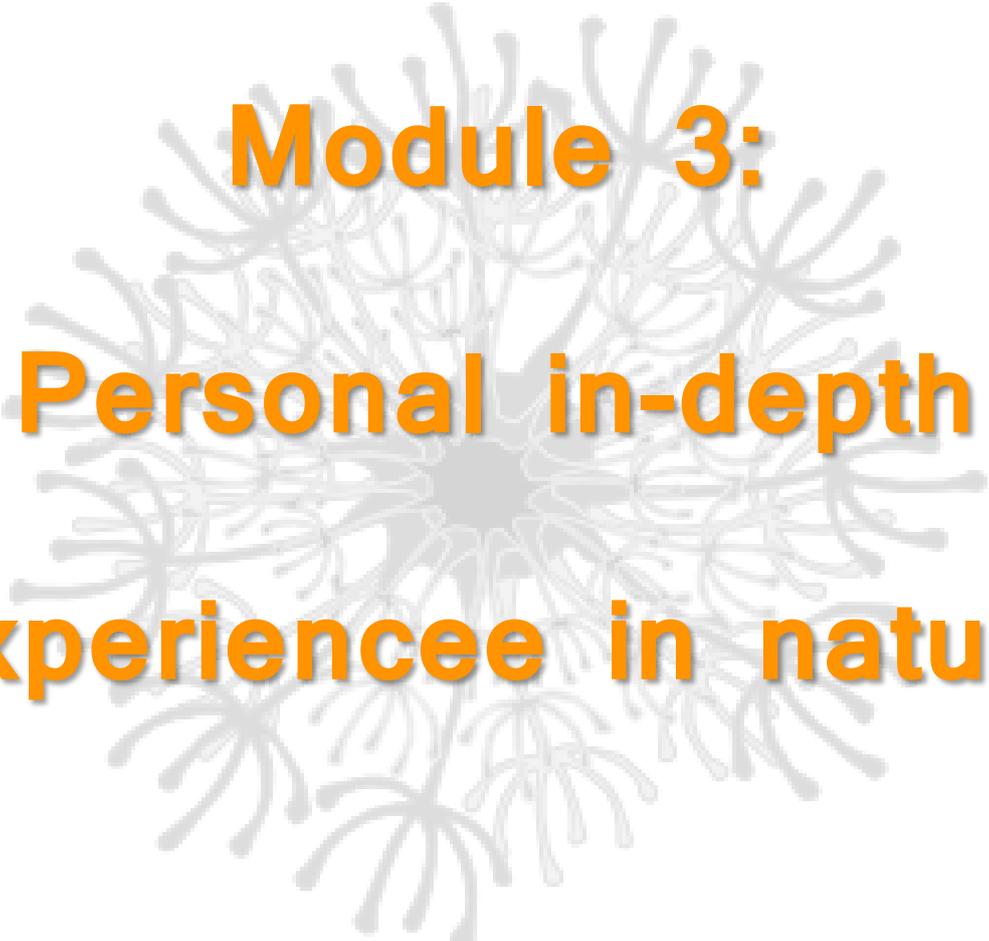
Handout: Module 2, Activity 7

Trainer's 'Character' notes

You can make this activity a fun, light-hearted one. Ask the group to imagine this person's mindset deeply and act/talk in an exaggerated manner, using their bodies as well. If they like something, they should be very loud and expressive about it! They can also stand on the chairs if they want! If they really don't like an idea, they should express that as well in a very vivid way. Go outside for this activity, as the change of scenery and natural stimuli might help participants to change their mindsets as well.

The different characters are:

- An idealistic young teacher, who has just finished university and is enthusiastic, wanting to do the best for children.
- A Year 5 child with ADHD.
- The school principal, who is generally supportive of innovative ideas, but has to keep in mind all the bureaucratic/administrative issues, take account of the interests of different stakeholders (parents, governors, local government, etc.) and know exactly how this change can be managed.
- A Year 6 child using a wheelchair or walker.
- A very involved and well-respected caretaker. This is a practical person who wants to know what each change means from a practical standpoint. The school does pay attention to her/his viewpoints, as it has been proved time and time again that s/he knows what s/he is talking about.
- A grumpy, sad teacher. This teacher doesn't have illusions: s/he knows that in the end all ideas fail, even if they are not entirely useless, and actually nothing really changes. S/he is very good at pointing out the flaws of a plan and is not shy in giving voice to these concerns.
- A parent of two children in the school, who has only just heard about this idea and wants to know the detail and information behind it and why the school is doing this.



Module 3:
Personal in-depth
experiencee in nature

Module 3: Personal in-depth experience in nature

Learning Outcomes:

By the end of the session, learners will be able to

- 1a. name/identify the PAPPUS 15.
- 3a. show an understanding of the different perspectives of people and of nature
- 3b. show an understanding of the ethical questions regarding being 'in nature'
- 3c. show an understanding of the connection between understanding, respecting nature and the need to care for it

Session Summary

This session focuses on the importance of being able to see 'with nature's eyes', embedding respect for nature and the need and desire to take care of it.

Session Plan - Module 3: Personal in-depth experience in nature

Activity & LO	Time	Content	Method	Resources
Activity 1 LO 1a, 3a, 3b, 3c	90 minutes 	Walk in the forest / park, plants' perspective Objective: to have a personal in-depth experience in nature and to get familiar with the 15 PAPPUS plants	Outdoors	List of the 15 PAPPUS plants Access to a natural site Paper, pen
Activity 2 LO 1b, 1c	20 minutes   	Botany Basics Objective: getting familiar with identifying plants	Individual and work with children	Plant ID Fact Sheet Happy Families Cards Botany Basics PPT slides
Activity 3 LO 1b, 1c	65 minutes   	Plant recognition Objective: getting to know different playful activities for plant recognition	Individual, outdoors with children	Access to outdoor spaces PAPPUS Plant ID Fact Sheets and Happy Families Cards links to other plant ID Apps camera/sketch book.
Summary	5-10 minutes 	Summing up and reflection		

Activity 1: Walk in the forest / park - the plant's perspective

Learning Outcomes:

- 1a. name/identify the PAPPUS 15.
- 3a. show an understanding of the different perspectives of people and of nature
- 3b. show an understanding of the ethical questions regarding being 'in nature'
- 3c. show an understanding of the connection between understanding, respecting nature and the need to care for it

Time: 45 minutes

Method: Outdoors

Resources

- Cell phones/cameras/appropriate clothing
- Paper, pen

Activity

During the next activity, you will have the chance to spend some more time outside while getting familiar with the 15 PAPPUS plants. Go to a natural environment (a forest or a park) and spend 1 hour in the chosen environment. Try to identify and note down/photograph as many of the 15 PAPPUS plants as you can, as well as any other notable plants. See if you can find any instances where plants are “cooperating” with each other: where two or more species are dependent on each other in anyway.

Choose one plant that you particularly like or find interesting, preferably one of the PAPPUS 15 (you might want to review the list). Study your chosen plant for a while and then try to see the world from the plant's perspective. For example, get down to ground level if this is where the plant grows, climb up if it's a creeper etc. What does the plant see? How does it feel? Take some pictures from this perspective, spending at least 5-10 minutes with this one plant.

After you had enough time with your plant, find a comfortable position and sit down. Write an essay from the plant's perspective (“I, the plant...”), using the pictures. Where do you live? With whom? What makes your life easy? What makes it hard? Share with others on our [social media and discussion board](#) your story and read the stories of others.

Activity 2: Botany basics

Learning Outcomes:

- 1b. Show confidence in identifying a range of plant species.
- 1c. Know where to find further support to help you and the children identify plants.

Time: 20 minutes - 1 hour

Method: Individual and work with children

Resources

- [Botany Basics PPT slides](#)
- Access to outdoor spaces
- PAPPUS [Plant ID Fact Sheets](#) and [Happy Families Cards](#)
- Links to other [plant ID Apps](#)
- Camera/sketch book
- Detailed [botanical glossary](#) on website
- Further annotated images of plant botanical details

Activity

Botany basics

Look again at the PAPPUS 15 plants. How many do you know already?

Look at the [Botany Basics PPT](#) slide to remind yourself what we mean by plants, and the key definitions of basic parts of the plant.

Select one you are familiar with, and that you know you can find growing in your school grounds/local park/garden. It can be the same as in the previous exercise.

Take copies of the [Happy Families Cards](#) and the [Plant ID Fact Sheets](#) for your selected plant. They cover the four seasons, so you can do this at any time of year for most plants. Take a very close look at the details in the photos, and in the Fact File.

Identify the key features of the plant itself using a magnifying glass to get up close. You might be surprised by the additional details you see. How many new botanical terms have you learnt? Enjoy the exploration, make sketches/ notes and share your discoveries with another colleague (if you are working on this as a group).

For Elder there is also a 'virtual' video tour to help you on the [PAPPUS YouTube Channel](#)

Carry out the above activity with a group of children and ask them to record their findings in a sketch/notes. You can pre-select plants that you know are growing in the location you are working in. Children can work in pairs looking at different plants, then report back to the whole group.

Activity 3: Plant recognition

Learning Outcomes:

- 1a. Show confidence in identifying a range of plant species.
- 1c. know where to find further support to help you and the children identify plants.

Time: 65 minutes, plus additional tasks with children

Method: Individual and work with children

Resources

- The grounds/garden/park
- PAPPUS 15 [Plant ID Fact Sheets](#) and [Happy Families Cards](#).
- [Literacy Springboard](#)
- [Plant ID APPs](#)

Activity

Roots, stem, leaves, flowers, seeds. These are the basics of most plants that everyone learns as children. In this course you will also learn some more botanical terms as you work through the PAPPUS 15 plants. Each plant has a Fact Sheet identification guide that goes into a lot of detail. These help children's observational skills as they compare the annotated images with the actual plants. In the PAPPUS resources we also have sets of 'Happy Families' cards for each plant. These offer a very basic set of images to use with younger children to learn to recognise plants from their most obvious features. Depending on the time you have available, you can choose one or more of these activities.

1. Using your senses - feely box game.

Work in pairs, whether working as a group of adults, (or include a group of children from the school). Each pair cuts up a small portion of their plant and puts it into a 'feely box' or cotton bag (or use blindfolds) for another pair to identify through touch and smell. Then give the specimen and two different Plant ID Fact Sheets to the next pair (one sheet being the correct plant and one being a 'spoof').

One person describes what they feel, in detail, and then smells the plant too.

Describe the texture of the stems and leaves, how many 'buds there are, how they are arranged. Are they 'opposite' or 'alternate' up the stem? This can be a very important ID feature when looking at similar plants so do observe this. The other person in the pair compares the descriptions to the two Plant ID Fact Sheets and decides which it is. Swap with new sets of plants.

2. Playful plants

For your selected plants, look at the associated [Playful Springboards](#) sheet, and chose any activity for the group (or include a group of children from the school). For example:

- a. **Meet the tree** (Conifer Playful Springboard)

Participants pair up. One of them is blindfolded, while its pair leads them to a tree. The blindfolded person can touch, smell, (even taste, if you feel like, 'if safe or applicable') the tree, and stay as long as they want. When they are ready, their pair leads them back to where they started. They take the blindfold off, and the person has to find the tree they got to know. Then the pair change roles.

b. **Arts and craft** (e.g. Poppy Playful Springboard)

You can use different plants for making some arts and crafts. Collect poppy petals, and make printings of them on paper by pressing them with something heavy.

Another possibility is to create a "window": use a sticky paper and cut out a small window in the middle. Then remove the non-sticky part and stick it to a regular white sheet – now it will only stick where the "window" is. Explore the area for tiny parts of plants to stick on your window, creating a little picture.

c. **Flower feedback** (Dog Rose Playful Springboard)

At the end of the session, you can ask for feedback from participants by using the dog rose as a metaphor. Ask them to think about what brought them joy during the session (what was the rose), what they didn't like (the thorn) and what will happen next (the bud).

3. Start a site: "Flora"

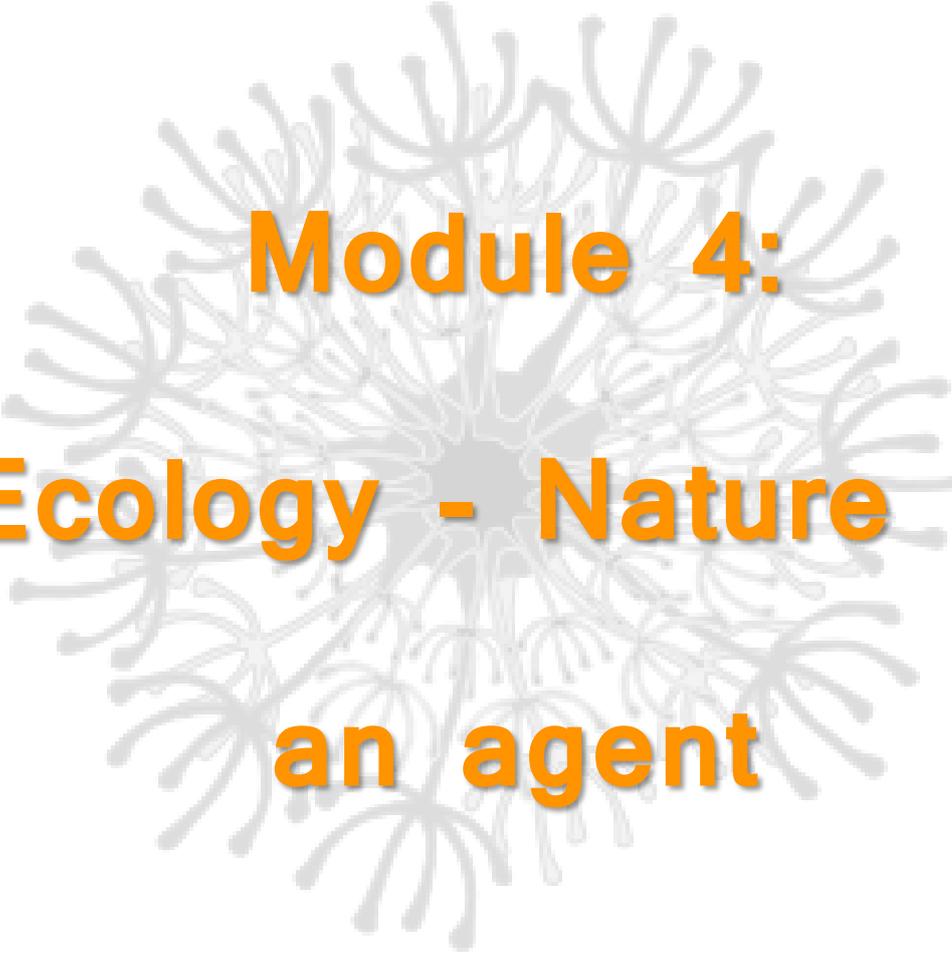
Refer to Literacy Learning Springboard - 'school grounds guide'.

As you become familiar with all the plants in your grounds/garden/park, you and the group can start to develop a site "Flora". This is a data base of plants found in your selected site. Children can build on this over time and it can become an interesting record of the development of your site, seeing what plants come and go, and how the biodiversity of the site changes if you take positive steps to change site management.

4. Explore Plant ID Apps

There are many useful online plant ID Apps, such as [Plant Snap](#) and [PlantNet](#). Take a look at the Apps that are available and try them first on plants that you know you can identify. Ask children to do the same, and evaluate which ones work best for you.

Pappus



**Module 4:
Ecology - Nature as
an agent**

Module 4: Ecology - Nature as an agent

Learning Outcomes:

By the end of the session, learners will be able to

- 3d. build positive attitude towards plants and nature
- 4a. demonstrate an understanding of basic ecological principles
- 4c. understand how the language we use determines the way we think

Session Summary

This session focuses on basic ecological principles, including the interconnected nature of the ecological system, of which humans are a part, and the co-dependency of the different parts of the system. It shows how these principles affect real life, and introduces the idea of plant strategies, as well as ecolinguistics.

Session Plan - Module 4: Ecology - Nature as an agent

Activity and LO	Time	Content	Method	Resources
Activity 1 LO 4a	30 minutes 	Video about ecology Objective: to understand the basic principles of ecology and the interconnected nature of our environment	Video	Video on ecology
Activity 2 LO 3d, 4c	90 minutes 	Interactive lecture on plants as actors & ecolinguistics Objective: introducing how plants can be viewed as passive and active actors, depending on how we use language to talk about them	Video and individual	Video about plants as actors
Summary	5-10 minutes 	Summing up and reflection		

Activity 1: Video about ecology

Learning Outcomes:

4a. Demonstrate an understanding of basic ecological principles

Time: 30 minutes

Method: Video

Resources

- [Video on ecology](#)
- [Handout on Ecology](#)

Activity

Watch the video about Ecology (duration approximately 30 minutes) and read the corresponding handout.

It is important that we understand that nature is complex, and we, humans are one part of the whole. When deciding to have outdoor sessions with your students, you can also use this opportunity as a teaching moment: about respect, about understanding complexity and how different organisms can coexist together and have an effect on each other.

Activity 2: Interactive lecture on plants as actors

Learning Outcomes:

- 3d. Build a positive attitude towards plants and nature.
- 4c. Understand how the language we use determines the way we think.

Time: 90 minutes

Method: Video and individual

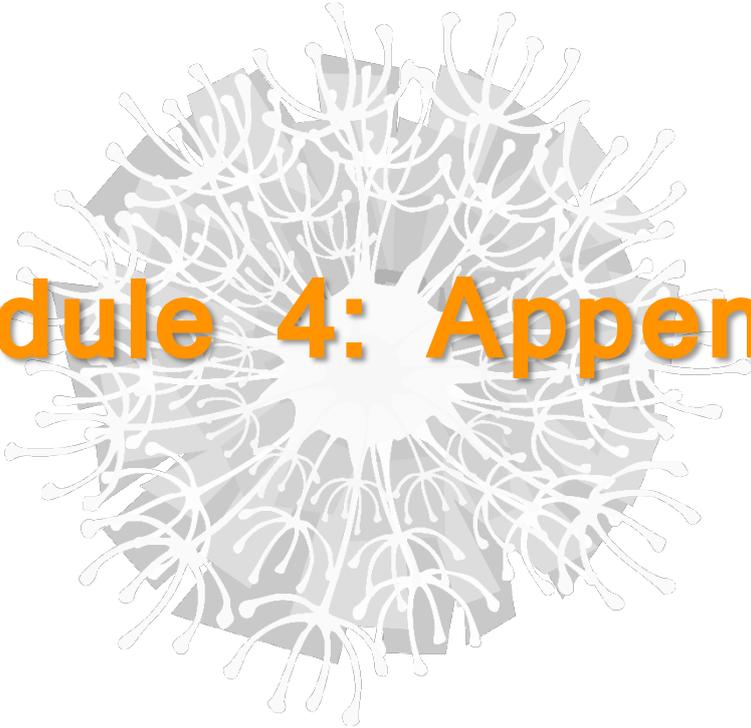
Resources

- [Lecture video](#)
- [Lecturer PPT](#)
- [Handout for participants](#)

Activity

- 1) Look at the following video, recorded during the international PAPPUS training by Virág Suhajda, talking about Plants as actors.
- 2) The presentation includes an exercise ([slide 5](#)) – read the handouts presented as appendixes with three different descriptions of the same plant. Think about the following questions:
 - a. How is the same plant described in each case?
 - b. What are your feelings about the plant after each description?
 - c. What is the plant described as doing? Look for the verbs, which show the actions of the plant itself! NB: *The second and third descriptions should not contain these actions.*
- 3) Following this exercise, read the second Handout that describes how the language we use shapes our feelings towards nature, and discuss how people and children can be “re-minded” for nature.
- 4) Looking at plants as active agents is a mindset. Look at the Literacy section of the PAPPUS Toolkit for finding activities that relate to language use and plants. You can find several poems about plants also in the Playful Springboards – what do you think, how these poems describe the plant?

*See additional information and references in [Module 4 Appendix](#).



Module 4: Appendix

Module 4: Additional information and references

Handout 1:

Three descriptions of the same plant: The evening primrose

- a) The little girl sat there in the orange sunset light, and waited for the evening primroses to open. “Look” –she screamed happily – “the bee climbed into the flower”. “Yes, she might look for a place for resting a little. She might be tired” – I responded. Meanwhile the flower popped up and started to open her beautiful yellow petals. It was like in an Attenborough movie – the whole blooming took less than a minute, the petals opened up, and the bee found herself outside again, with a big baggage of pollen sticking to her feet. At the very same moment, a withered petal – maybe from the flower of the previous night – slowly dropped to the ground. We all stared the process with awe. I felt my throat tightening with a basic existential fear of loss.

Yellow buds pop up
Blossom for one night only
It is all we have.

- b) “*Oenothera biennis*, the **common evening-primrose**, is a species of flowering plant in the family Onagraceae, native to eastern and central North America, from Newfoundland west to Alberta, southeast to Florida, and southwest to Texas, and widely naturalized elsewhere in temperate and subtropical regions.^[3] **Evening primrose oil** (EPO) is produced from the plant. (...) *Oenothera biennis* has a life span of two years (biennial) growing to 1.6 m (5 ft 3 in) tall.^[6] The leaves are lanceolate, 8–18 cm (3–7 in) long and 2–6 cm ($3/4$ – $2+1/4$ in) wide,^[6] produced in a tight rosette the first year, and spirally on a stem the second year. Blooming lasts from late spring to late summer. The flowers are hermaphrodite, produced on a tall spike and only last until the following noon” (Wikipedia)
- c) “Evening primrose originated in North America and became naturalized in the north-east of China about one hundred years ago, where it has been used as famine food and animal feed. New uses for the seed oil, which contains γ -linolenic acid (GLA), that have been developed in China and overseas since 1980 have created a much larger commercial demand for the seed. There are eight species of *Oenothera* L. growing wild in China, of which *Oenothera biennis* L. is preferred. The maximum annual production of wild evening primrose seed is estimated to be about 3000 tons but, since 1986, evening primrose has also been cultivated for its seed and oil using *O. biennis* (primarily in the provinces of Jilin, Liaoning, Hebei, and Shandong) to meet the increasing demand. New production techniques have been developed and disseminated, and reported seed yields range from 750 to 3000 kg ha⁻¹. Commercial production follows a cyclical pattern, with the largest harvest to date, in 1999, estimated at 16 000-19 000 tons of seed.” (Yu-Cheng Deng et al, 2001:83)

Handout 2:

Reconnection to nature through the language we use.

It is common knowledge that the way we use language determines the way we think about something. Positive psychology uses this for changing our picture of ourselves and others – empowering us to talk more positively. Here we empower ourselves to talk more positively about nature.

Our relationship with nature, and within it with plants and animals, is also very much affected by the way we talk about it. Ecolinguistics targets this area with the concept of “re-minding”, which according to Stibbe is “explicitly calling attention to the erasure of an important area of life in a particular text or discourse demanding that it be brought back into consideration” (Stibbe, 2015:164). In our case this is our relationship and relatedness to nature. The way re-minding can work is to give “salience” to these areas, giving them importance and reminding us of its value as an approach. Stibbe (among others) stresses that giving salience happens most successfully through visual description, relating something to our senses.

David Abram, philosopher, in his famous work *The Spell of the Sensuous* (1996) describes how we are very much bodily disconnected from nature, and how this reflects on our sense of self and our relationship with nature and our natural embeddedness. In his work, *Becoming an Animal* (2010) he argues that we need to find “a new way of speaking, one that enacts our interbeing with the earth (...) A style of speech that opens our senses to the sensuous” (Abram 2010:3).

How does salience work? How can we change our way of speaking about nature to have a deeper connection?

As Stibbe (and Abram) points out, it is important to use sensual descriptions, also perhaps including emotional relationships (like awe, fear, love), which in turn give back the animal or plant its agency.

After reading three descriptions in the handout, we can already feel the difference in how we start to relate to the flower itself. In the first example, the flower is important in itself (as we just learned, this is a hermaphrodite plant) – an agent that acts; the second describes the flower in a detached way (a passive use of verbs), while in the third it becomes only a tool for production.

According to cognitive theory (see Lakoff and colleagues on metaphors, 1980) our use of language is very much body-based – we formulate the meaning based on our embodied experience, which means that the more visually and sensually we describe something, the more emotions are invoked. We cannot really get attached to a plant which meets an increasing demand on production (description C); the same is likely to be true of a herb with ‘lanceolate leaves and hermaphrodite flowers’ (B – although biologists might be an exception here); however pictures of a yellow flower in the sunset housing a bee and opening its petals quickly can invoke emotions. This flower has its own life and activities, it is an active being, an agent in itself.

Fairclough (2003:150) describes the process as impersonalisation (here we apply this to plants - also active, living beings) where people (and other living beings) are represented only as elements of organizational structures and processes. We can clearly see this in the descriptions provided, but it is easy to find examples in our daily life.

We encourage you to view the video on plant competitions again with this in mind, noting the language use of the lecturer who often personalizes the plants, giving us a unique opportunity to connect to them.

Bibliography

- Lakoff, G., Johnson, H (1980). *Metaphors we live by*, University of Chicago Press
- Abram, D. (1996). *The Spell of the Sensuous*, Vintage Books
- Stibbe, A. (2015). *Ecolinguistics – Language, Ecology and the Stories We Live by*, Routledge
- Fairclough, N (2003). *Analysing Discourse Textual Analysis for Social Research*, Routledge
- Deng, Y. C., Hua, H. M., Li, J., & Lapinskas, P. (2001). Studies on the Cultivation and Uses of Evening Primrose (*Oenothera* spp.) in China. *Economic Botany*, 55(1), 83-92.
- *Oenothera biennis* link: https://en.wikipedia.org/wiki/Oenothera_biennis, retrieved 26th July, 2021.

Module 4: Activity 1 - Handout on Ecology

What is ecology?

Five main principles of ecology, by András Victor PhD

Co-existing

Looking at the origins of words can help us understand their real meaning. Ecology is formed from two words, „eco” and „logos”. „Eco” is coming from the Greek word „oikos”, which has many meanings: house, housekeeping, family, church – where people can be together. „Logos” is also a Greek word, it means science, intellect, mind, theory. Together the two words are describing how we can manage the whole world, how to keep a house, on a bigger scale. It brings us to questions about how can creatures coexist in the world?

Living creatures co-exist with each other and with non-living things in a huge system – with the sun, the air, the stones. You can look at a meadow – and the closer you get, the more elements you can find in it. There are thousands of systems living together there, all of which are affecting one another.

There is no independence

There are no real independent things in the world. In a limited form you can be independent, but no one can be fully independent. This is true for smaller beings, like microbes, and it is true for larger systems, like a family or a country. Life is a huge web (a „worldwide web”) – where everything is connected to everything else. You can never do a single thing, as anything you do will have an effect on another part of the system.

Bio-diversity

In nature, there is a huge diversity of species – there are over 15.000.000 species (it’s an estimation). The largest number of species are insects. Because of human action, 3 species go extinct per hour. Some of them we don’t even know them – out of the 15.000.000 different species we know around 2-3.000.000.

There are no two versions of the same individuals. There are no two same mosquitos, no two same blades of grass, no two same snowflakes. Ecosystems are also diverse. One meadow is a cohabitat of several thousand species – none of them are independent!

Cycles

Cycles are a principle of nature. Water cycles, organic cycles, the carbon cycle. But in the human industry, there are no cycles – it is a linear process. For example, bauxite is used in the industry, and at the end of the process, after using parts of it, there is waste, which cannot be used anymore. In cycles, the end product is used up in the next phase of the cycle – and there is no waste.

We can see two types of feedback loops in nature – positive and negative feedbacks. Within a negative feedback loop the growth of one element eventually causes the decrease of the same element (e.g. the increase of carbon-monoxide in the air causing eventually the decrease of carbon-monoxide – the starting change is the opposite of the result). In a positive loop the increase of one element causes the increase of the same element (e.g. through glasshouse effect, the rise of the temperature causes even higher temperatures). This is essentially a chain reaction.

Biological systems are often capable of self-regulatory processes – the changes within the system eventually regulate themselves, so the whole system stays in an equilibrium.

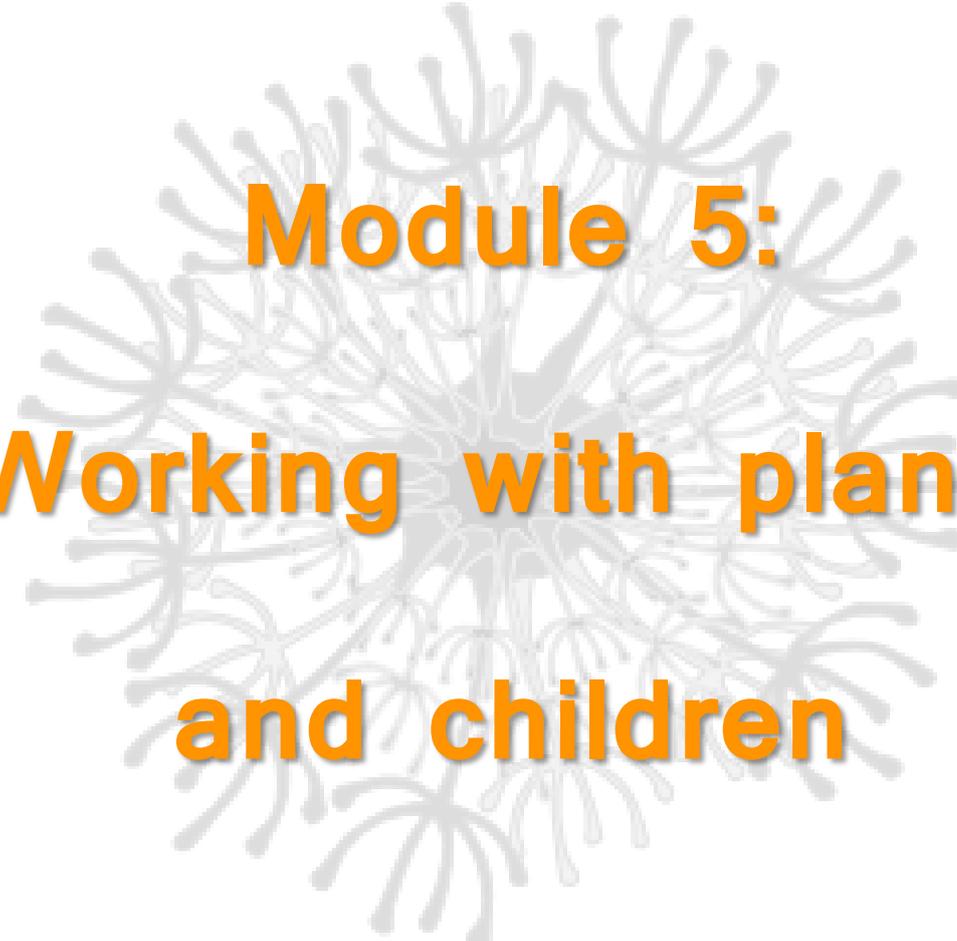
Equilibrium

In nature fight/struggle and symbiosis both happen, they are complementary. Some examples for struggle: the prey and the predator, the parasites and the host, the invasive and native species are in constant competition with each other. While in other cases we can see symbiotic relations: algae and fungi living together in the lichen, insects and flowers, bacteria and humans (in the human intestines) need each other for survival.

While humans often see bacteria as „enemies“, as dangerous elements of nature, in reality around half of all bacteria species are living in symbiotic relations, half are neutral, and only a small portion of them are actually pathogens.

In nature these processes are complementary to each other. Competition and cooperation, fighting and helping, struggle and symbiosis are in an equilibrium, from the perspective of the whole system.

Pappus



Module 5:
Working with plants
and children

Module 5: Working with plants and children

Learning Outcomes:

By the end of the session, learners will be able to

2f. Use the PAPPUS resources to build up a pedagogical process for their pupils

Session Summary

Within this session, participants can focus on how the strategies and approaches learnt throughout the PAPPUS course can be used to inform their own pedagogical work.

They can support each other in creating an Action Plan to develop outdoor learning and use the PAPPUS resources for their specific pedagogical aims.

Session Plan - Module 5: Working with plants and children

Activity and LO	Time	Content	Method	Resources
Activity 1 LO 2f	45 minutes 	Design a pedagogical process Objective: to design participants' own pedagogical processes, using the PAPPUS resources	Individual and work with colleagues	Blank sheets, pens
Activity 2 LO 2f	60 minutes 	Reflection Objective: review course and draft an individual/school action plan	Individual and work with colleagues	Action Plan template

Activity 1: Design a pedagogical process

Learning Outcomes:

2f. Use the PAPPUS resources to build up a pedagogical process for their pupils

Time: 45 minutes

Method: Individual and work with colleagues

Activity

Having had the chance to get familiar with the PAPPUS resources, now you have the opportunity to practise integrating the new information into your teaching programme for your own students.

If you have carried out the Staff Meeting exercise in [Module 2 Activity 7](#) then you will have done some reflection earlier in the course which will inform this discussion.

Spend around 10 minutes thinking about the groups of students to whom you are planning to introduce the PAPPUS programme, identifying your objectives for the groups (i.e. what you want to achieve by introducing PAPPUS, what subjects you may be teaching through PAPPUS).

When you are ready, invite some of your colleagues to help reflect on possible aims and strategies. Sit down with 3-4 of your colleagues, where you can support each other's goals by brainstorming together. Present your "case" to your group, tell everyone about your plans which the group then brainstorms, suggesting ways this could be achieved. You can use specific activities from the training course, or scroll through the [PAPPUS website](#) / [PAPPUS Toolkit](#) to look for activities that might fit their goals. The group members can also share their own practice.

Use this this discussion to lead into [Activity 2](#).

Activity 2: Reflection and Draft an individual or school action plan

Learning Outcomes:

2f. Use the PAPPUS resources to build up a pedagogical process for their pupils

Time: 60 minutes

Method: Individual and work with colleagues

Activity

You are at the end of the course now. Spend some time thinking back to what you have learnt, and then look through all the materials you created (notes, pictures, poems, curriculum documents, staff meeting, etc.).

Ask yourself the following key questions

- 1) What is the key message you have taken away from this course?
If you have been able to do this course with a colleague, then you can reflect together and discuss next steps.
- 2) Where are you now?
- 3) Where do you want to get to?
- 4) Who can you collaborate with?
- 5) What are your next steps to get there?
 1. Tomorrow
 2. Next Week
 3. Next Month
 4. Longer Term
- 6) What do you need to enable you to do this?
Such as; physical resources to procure (budget), senior managers who need to make decisions, engagement of additional colleagues etc.

Take this opportunity to record your next steps. A DRAFT table has been provided for you in the appendices, (or use your own, or a format that is used by your school or setting.)

If you have carried out the staff meeting activity in Module 2 Activity 7, then you can review this here and add/edit to suit your plans to take PAPPUS forward.

Please do make a diary note that will prompt you to review progress next week, next month and on future dates too. Ideally this could be a regular recurring item on a staff meeting agenda (termly perhaps).

Thankyou for becoming a PAPPUS Champion!



Evaluation

Learning Outcomes:

By the end of the session, learners will be able to:

5. develop personal skills

- 5a. experience increased cooperative attitude
- 5b. experience development of negotiation and communication skills
- 5c. give/receive individual positive feedback
- 5d. describe experiences

Session Summary

It is very important to us that we meet your needs effectively through the PAPPUS website and the resources that we have written for you. To do this we need to know what you think!

Please help us evaluate the course by filling in the following evaluation questionnaire:

https://ec.europa.eu/eusurvey/runner/PappusToolkitEvaluation_EN (you can complete this in your language by using the dropdown on the left).

Thank you.

Pappus

END OF PACK

