Supplementary Materials

Expanding and Enhancing the East London Waterworks Park Learning Circle

January 18th 2024 - March 2nd 2024 (C-TERM)

Team Members

Daniel Boutin
Sarah Kogan
Elion Sholla
Serena Tura

Advisors

Dr. Sarah Stanlick
Dr. Boucher-Yip

Sponsor

East London Waterworks Park
Nathan Miller

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfilment of the requirements for the Degree of Bachelor of Science.

WPI

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METHODOLOGY SUPPLEMENTARY MATERIALS

Appendix A: List of Survey Questions for Primary School Teachers

DEMOGRAPHICS

1. Which school are you employed by?
2. What year(s) do you teach?
    a. Select all that apply (Year 1 - Year 6)
3. What subject(s) do you teach? (Select all that apply)
    a. English
    b. Mathematics
    c. Science
    d. Art and Design
    e. Computing
    f. Design and technology
    g. Geography
    h. History
    i. Music
    j. Other ____
4. How many years have you been working in the education field?

ATTITUDES TOWARDS ENVIRONMENTAL EDUCATION

5. Please mark the scale 1-5 based on the frequency you teach about environmental topics. (Never, Occasionally, Sometimes, Often, Frequently)
6. Using the scale below, how much do you agree with the following statements, where 1 is the least and 5 is the most?
   (Disagree, Somewhat Disagree, Neutral, Somewhat Agree, Agree)
    a. Individuals can have an impact on their local environment.
    b. Integrating environmental education into the classroom is essential to a well-rounded curriculum.
    c. Hands-on experiences are effective ways to enhance environmental learning.
    d. My students would benefit from more opportunities to explore environmental and sustainability education.
    e. I am confident in my understanding and ability to teach environmental topics.
    f. Environmental education has positive outcomes for student learning and wellbeing.
7. Please mark the scale 1-5 based on the frequency the following topics come up in your classroom. (Never, Occasionally, Sometimes, Often, Frequently)
    a. Climate change
    b. Air pollution
    c. Litter and Recycling
    d. Soil contamination
    e. Ocean sustainability
    f. Animals and plants
    g. Renewable energy
    h. Ecosystems
    i. Rewilding

8. Which environmental education topics do you believe are the most important to discuss in the classroom?
    a. Climate change
    b. Air pollution
    c. Litter and Recycling
    d. Soil contamination
    e. Ocean sustainability
    f. Animals and plants
    g. Renewable energy
    h. Ecosystems
    i. Rewilding

TEACHING METHOD STYLES

9. In my class, I use the following strategies…(select all that apply)
    a. Active learning
    b. Team-based learning
    c. Project-based learning
    d. Service learning/community-based learning
    e. Lecture
    f. Guided discussion
    g. Flipped Classroom
    h. Other ____
10. The most effective strategies I have used are… (select a maximum of 3)
    a. Active learning
    b. Team-based learning
    c. Project-based learning
    d. Service/community-based learning
    e. Lecture
    f. Guided discussion
    g. Flipped Classroom
    h. Other ____
11. How do you assess the effectiveness of your teaching methods in helping students achieve learning objectives?
    a. Examinations
    b. Team Projects
    c. Individual projects
    d. Class Discussions
    e. Other (please specify)

OTHER

12. Please provide your email in the box below if you would consent to a further interview from the research team.

Appendix B: Interview Questions for Learning Circle Members

1. How did you get involved with the ELWP and specifically the Learning Circle?
2. What motivates you to volunteer your dedication and time to the ELWP organisation?

3. What does your career path look like?
   IF APPLICABLE - EDUCATOR:
   a. What are some effective lesson plans that you've used throughout your career?
   b. Have you ever done hands-on outdoor learning exercises with your class?
   c. What are the most effective teaching method(s) that you use in the classroom?
      i. Can you give us an example of these methods?
   d. In your experience, what has made a lesson plan effective?
   NOT EDUCATOR:
   a. How has your career experience helped you with the work you do as part of the Learning Circle?
4. What is your experience creating or working on projects with the Learning Circle?
   IF APPLICABLE - HAS PARTICIPATED IN LEARNING CIRCLE PROJECTS:
   a. Can you tell us about a learning project that you were involved in?
   b. What do you think made that project so successful?
   c. What aspects would you improve if you were to repeat it?
   d. What advice would you give to us in our development of a learning project?
5. What are some interactive activities you envision for Year 1-2 students that could be implemented into the park?
6. To you, what are the most important things to keep in mind when engaging young students with the environment?
7. If you could name some of the benefits that an educational program at the East London Waterworks Park could offer over a traditional classroom experience, what would they be?
8. Do you have any questions for us? Is there anything we haven't touched on that you'd like to discuss?

Appendix C: Interview Questions for Educators

1. What does your career path look like?
   IF APPLICABLE - EDUCATOR:
   a. What are some effective lesson plans that you've used throughout your career?
   b. Have you ever done hands-on outdoor learning exercises with your class?
   c. What are the most effective teaching method(s) that you use in the classroom?
      i. Can you give us an example of these methods?
   d. In your experience, what has made a lesson plan effective?
2. To you, what are the most important things to keep in mind when engaging young students with the environment?

   Present activities **(present one activity in depth and explain that the three others have the same structure)**

3. How can the worksheet and presentation be updated so they are more adequate for facilitating learning?
4. Are the learning objectives clear and achievable for the students?
5. How would you assess the appropriateness of this activity for year 1 and 2 students?
6. Are there any parts of the lesson that seem confusing or unclear?
7. Do you foresee any logistical or practical challenges in implementing our activities?

8. Do you have any additional suggestions or ideas for enhancing the effectiveness of our lesson plans?

Appendix D. Observational Results

Wild wetlands with various species as shown to the figure on the right

Wetlands Key Species: Reedbed, Smooth Newt, Broad-bodied Chaser, Common Toad, Reed Warbler, and Grey Heron

Hackney bees post sign

Pond with various species as shown to the right

Key Pond Species: Comma Butterfly, Goat Willow, Great spotted woodpecker, Great Tit, Reedmace, Common Reed, etc

Bee Sand Planter

RECOMMENDATIONS SUPPLEMENTARY MATERIALS

Bug Hotel

Science

Presentation: 10 minutes
On-site Activity: 15-20 minutes

Content Overview

Bug Hotel is a concept for an educational activity for Key Stage 1 students, with the goal of connecting students with their environment and educating students about various biological principles, including habitats and species diversity.

Learning Objectives

1. Teach children that creatures can live in a variety of different locations and habitats.
2. Promote security in the environment, by seeing it as a home for animals.
3. Build exploration skills in children by allowing them full reign over what they bring back for their hotel.
4. Build identification skills by giving students items to search for in the park.
5. Test students' recollection of in-class information and allow them to put it into practice.

Associated National Curriculum Requirements

1. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
2. Identify and name a variety of plants and animals in their habitats, including micro-habitats.
3. Explore and compare the differences between things that are living, dead, and things that have never been alive.

Content

Online Resources:

- Bug Hotel In-Class Lesson: Bug Hotel Slide Deck
- Bug Hotel In-Class Practice Worksheet and Reflection Worksheet: Bug Hotel In-Class Sheet
- Bug Hotel On-Site Worksheet: Bug Hotel Exploration Sheet

Necessary Materials:

- 1 shoebox or cardboard box for every 3-5 students (group size can vary)
- Copies of Bug Hotel In-Class Practice Worksheet (equal to number of students participating)
- Copies of Bug Hotel In-Class Reflection Worksheet (equal to number of students participating)
- Copies of Bug Hotel On-Site Worksheet (equal to number of students participating)

Prepwork

1. The following slide deck has been created to serve as a lesson plan that can be implemented during the weeks leading up to the class' trip to ELWP. This slide deck includes activities which build students' identification skills and build comfortability in students' interaction with animals, bugs, and their natural environment. Included is a worksheet which the slide deck calls upon later in the lesson. Print this sheet prior to this lesson and pass it out to students when instructed. Similarly, a reflection worksheet is also included in the document. This should be printed ahead of time and distributed to students when instructed in the presentation.
    - Bug Hotel Slide Deck
    - Bug Hotel In-Class Sheet
2. This simple list of materials and bugs has been created and should be printed before attending the ELWP. A mock-up of this materials list is provided below. This can be modified depending on the topics covered prior to attending the ELWP.
    - Bug Hotel Exploration Sheet

Activity

In-Class Guidelines (use slide deck)

Slide 2:

- Hello class! Today we are going to talk about habitats and why they are important. First, can anyone tell me what a habitat is?
    - Answer: A habitat is a place where specific animals live. They can look very different for different animals.

Slide 3:

- To start off, we will do an identification exercise.
- First Picture:
    - What is the name of this animal?
        - Answer: Ant
    - Where do ants live:
        - Answer: Anthill
- Second Picture:
    - What is the name of this animal?
        - Answer: Birds
    - Where do birds live?
        - Answer: Nest
- Third Picture:
    - What is the name of this animal?
        - Answer: mouse
    - Where do mice live?
        - Answer: Mouse holes
- Fourth Picture:
    - What is the name of this animal?
        - Answer: bee
    - Where do bees live?
        - Answer: Beehive

Slide 4:

- Good job identifying each of those animals. While some animals have obvious habitats, some animals live in habitats you may not expect. Foxes, for example, often burrow down in the ground in caves called fox dens to stay warm. In the city or in towns, where it may be more difficult to burrow, foxes live under sheds and buildings.

Slide 5:

- What are bugs? Bugs, or minibeasts, are small animals that live in a variety of areas. They typically have a hard outer skin and more than two legs. Can you name each of these bugs?
- The first one is a Ladybird.
    - Ladybird have black spots. How many spots does this ladybird have?
        - Answer: 7 spots
- The second bug is a Harvestman.
    - Can you count how many legs this minibeast has?
        - Answer: This bug has 8 legs
- The third bug is a Millipede.
    - How many legs can you count on this millipede?
        - Answer: Millipedes have over 200 legs!
- The last bug is a Dragonfly.
    - How many wings does a dragonfly have?
        - Answer: A dragonfly has 4 wings

Slide 6:

- Bugs are really amazing and can be fun to look at and hang out with. Here are the best strategies to observe bugs in a way that respects yourself and the bugs. It is of course good to observe bugs from a distance without disturbing them. If you feel adventurous, you can also hold a leaf or stick near the bug and hope they crawl on.

Slide 7:

- Bugs live in a variety of environments, which can vary from living to non-living environments.
- First picture:
    - What bug is on the leaves in this first picture?
    - How many bugs are on the leaves?
        - Answer: There are six ladybirds
- Are the leaves alive or non-alive?
    - Answer: The leaves are alive
- Second picture:
    - Can you identify any of the bugs on this photo?
        - Answer: spider, snail, slug, worm
    - Are these dry leaves alive or non-alive?
        - Answer: The leaves are no longer alive.
- Third picture:
    - What bugs live underneath the rock?
        - Answer: worms
    - Is the rock alive or non-alive?
        - Answer: It is non-alive.

Slide 8:

- Bugs can be found in a variety of habitats in your natural environment.
- First picture:
    - What is this habitat?
        - Answer: Log, wood

    - Bugs like to live under logs, or within the bark.
- Second picture:
    - What is this habitat?
        - Answer: leaves, wet leaves
    - Bugs like wet leaves, as they keep them moist.
- Third picture:
    - What is this habitat?
        - Answer: grass
    - Bugs like to hang out in grass, especially wet grass.
- Fourth picture:
    - What is this habitat?
        - Answer: rock, stone
    - Bugs like to live under rocks, as it provides a strong home.

<u>On-Site Guidelines</u>

1. Students are split into groups of 3-5, depending on the number of available supervisors, with one supervisor with each group of students. Odd numbers are acceptable for this exercise.
    - *"OK class, we will split up into small groups, so find a supervisor to join in a group."*
2. Each group should receive a shoebox, and a list of various items and creatures to search for in the ELWP learning garden.
    - Examples of items to include are: rocks, wet leaves, twigs, grass, pine needles. Examples of creatures to find are: beetles, shieldbugs, grasshoppers, centipedes, millipedes, ants.
3. Advise students to use leaves and twigs to try to attract any bugs they find. Discourage using direct hand contact with bugs. If needed, provide help.
    - *"Bugs are fun to observe, but they don't like to be touched very much. Use a leaf or a stick and try to get them to climb on!"*
4. Give students 10 minutes to explore the environment and search for materials and residents for their bug hotel. Ensure that supervisors AND students know to keep all students within 10 feet of their supervisor. Supervisors can also help students who are struggling to find materials.
    - *"Students, make sure to stay in a group and help your friends find bugs and items."*
5. Supervisors should carry the box around and allow students to collect materials and bugs in the box. At the end of the ten minutes, call all the groups back and make a group of circle on the lawn, divided up by group.
    - *"Alright students, come back and make a circle with your supervisor!"*
6. Instruct students to start building their "bug hotel". Tip the box on its side and instruct students to build structures inside to allow different rooms for different bugs. Advise students to use certain materials for habitats for certain bugs. Allow 5 minutes for hotel construction.
    - *"The centipede likes to live in a rocky area. You might want to use rocks to build the centipede's area."*
7. Gather around in a circle with the whole class. Each supervisor should present the bug hotel of each group, allowing students to lend comments about their design.

    - *"Here is my group's bug hotel. Would you all like to say something about what you made?"*
8. After each bug hotel has been presented, split back up into groups briefly and aid students in returning the bugs and materials to where they were found. Encourage this behavior with comments about how the bugs need to return to their habitats.
    - *"Please help me get the bugs back to their habitats. They need to be returned to their home, so give them a hand!"*
9. Conclusion of activity.

Accessibility Concerns

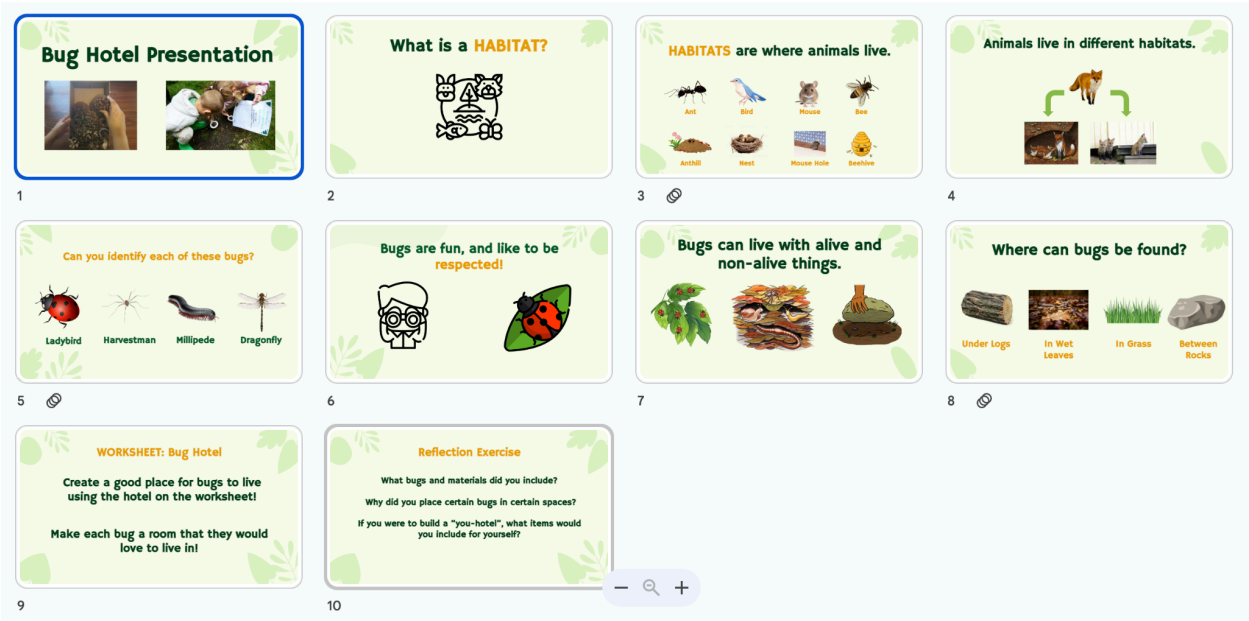
1. Students with mobility limitations may have trouble reaching as many areas as other children. Supervisors can help these students by finding objects that they point to.
2. Students with mental disabilities may have trouble with finding objects or bugs. Once again, supervisors can find items for them to hold and observe in lieu of finding them themselves.

Risk Assessment

Identified Risk	At Risk	Likelihood/Severity	Preventative Controls	Other Measures
Tripping	Children & Supervisors	Low risk Minor injury	- Staying in pairs with supervisors around - Comfortable walking shoes	First aid kits for injuries
Disturbance to the environment	Animals and plants	Moderate risk	- Adult supervision - Staying on approved paths - Correct handling of animals, or asking for help	Returning affected areas to their original state
Bug bites	Children & Supervisors	Low risk	- Awareness not to provoke animals - Adult supervision with bugs	First aid kit for injuries
Allergies	Children & Supervisors	Moderate risk Moderate injury	- Antihistamines as needed - Supervisor and student awareness of allergy - Modifications for severe allergies	Have EpiPen if needed

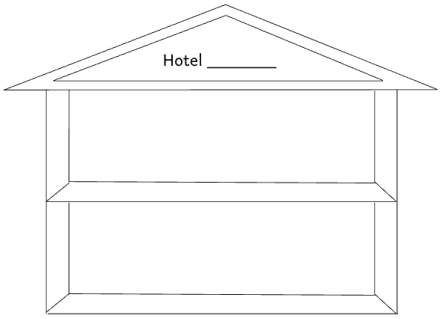
Reflection Questions

1. *What materials and bugs did you discover today?*
2. *Why did you place certain bugs in certain spaces?*
3. *If you were to create a "you-hotel", what items would you include for yourself?*



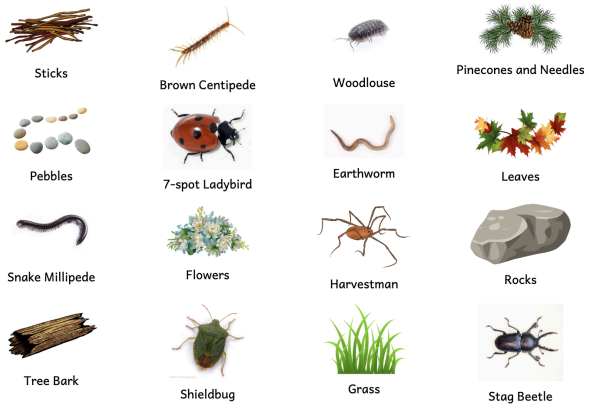
Name: _____ Date: _____

Create your own Bug Hotel!



Example Materials:			Example Bugs:		
Leaves	Pinecones	Grass	Centipede	Shieldbug	Woodlouse
Rocks	Flowers	Tree Bark	Worm	Harvestman	Ladybird

Bug Hotel: Can You Find All of the Materials and Bugs? (and more!)



Rewilding Colouring

Art and Science

Presentation: 10 minutes
On-site Activity: 20-30 minutes

Content Overview

Teachers will present a provided slidedeck that introduces the concept of rewilding and different ways that humans can help rewild the environment. Then the students will draw buildings, plants, and animals with a collaborative worksheet.

Learning Objectives

1. Teach children about the concept of rewilding.
2. Understand how new habitats are provided for animals through rewilding.
3. Enhance identification skills by identifying drawings of plants and animals.
4. Build teamwork skills through working collaboratively on a shared worksheet.

Associated National Curriculum Requirements

1. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
2. Identify and name a variety of plants and animals in their habitats, including micro-habitats.
3. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).

Content

Resources:
Slideshow: Rewilding Lecture Slides
Worksheet: Rewilding Drawing

Necessary Materials:

- Printed worksheets
- Crayons/coloured pencils/markers in all rainbow colours
- Clipboard/other hard material to draw on (if outdoors)

Prepwork:

- Print out worksheet for each student
- Review slideshow
- Gather materials

Activity

IN CLASSROOM LECTURE: Use the attached slideshow to have the students review key concepts to prepare for the activity. Speaker notes for slides are provided at the bottom of this sheet and in slides.
The slideshow includes:

- Definition of rewilding: giving land back to nature to allow nature to manage itself
- Images of spaces that have been rewilded

- Goals of rewilding
    - promote biodiversity
    - enhance ecosystem resilience
    - create self-sustaining, functioning ecosystems
- Explanation of what the East London Waterworks Park is

ON SITE DRAWING:

- Hand out printed worksheet to students
- Tell students to look at the site and draw what they see (buildings, fences, concrete, etc.) in a grey/black marker
- Then have students swap worksheets with a partner
    - Explain that this swap symbolises giving their drawings back to the wild
- Now have students draw plants and animals in colour that they think could live at the site.
- Have the students swap papers back and have them identify the animals and plants that now live on their "rewilded" site

IN CLASS DRAWING:

**If students are not taking a trip to see the East London Waterworks Park site, the drawing exercise can be done in the classroom using the slides as prompts for the activity*

Considerations / Accessibility Concerns

Students with mobility limitations may have trouble walking around the site. The drawing activity can be done in the classroom if it is not feasible to bring students to the park.

Risk Assessment

Identified Risk	At Risk	Likelihood/Severity	Preventative Controls	Other Measures
Tripping	Children & Supervisors	Low risk Minor injury	- Staying in pairs with supervisors around - Comfortable walking shoes	First aid kits for injuries
Disturbance to the environment	Animals and plants	Moderate risk	- Adult supervision - Staying on approved paths - Correct handling of animals, or asking for help	Returning affected areas to their original state
Bug bites	Children & Supervisors	Low risk	- Awareness not to provoke animals - Adult supervision with bugs	First aid kit for injuries
Allergies	Children & Supervisors	Moderate risk Moderate injury	- Taking antihistamines as needed - Supervisor and student awareness of allergy - Modifications for severe allergies	Have EpiPen if needed

Reflection Questions

1. What is your favourite thing you drew today?
2. If you were an animal that lived on your rewilded site, what kind of animal would you be?
3. What can you do to help animals and plants where you live?
4. Are there any sites like this near your home?
5. If you were to do this again, what other kinds of animals or plants would you draw?

Reflection Activity: Make a list of all of the plants and animals that the students have drawn

Slideshow Speaker Notes

Slide 2:
Today we are going to learn about rewilding! Does anyone know what this word means? Rewilding is when humans help to heal the environment. Sometimes nature is hurting and we need to help make it feel better.
Slide 3:
There are many ways we can help nature, including:

Bringing back friends: We can bring animals back to where they once lived, because animals need homes too.
Building Homes for Animals: We can create special homes for animals, like cosy houses for birds or cool hiding spots for bugs. This helps them feel safe and happy.

Planting Seeds: We plant special seeds in the ground. These seeds grow into beautiful plants that butterflies, bees, and other insects love. Some plants also help clean the air and keep us healthy.
Making Wild Playgrounds: Imagine turning some places into playgrounds for animals. They can run, jump, and have fun just like we do at our playgrounds.
Cleaning Up Nature: We can pick up trash and clean up places where animals live. It's like giving nature a tidy room to play and live in.

Slide 4:

There are many groups of people around London that are trying to REWILD the city. One group is trying to take land that is full of concrete and not being used and make the land into a place where both humans and animals can play and enjoy nature. This group is called the East London Waterworks Park. This area of land is surrounded by other parks where humans and animals are able to enjoy nature.

Slide 5:

Unfortunately this land has a number of unused buildings, has concrete all over the ground, and has fences surrounding the land that prevent humans and other animals from safely travelling from park to park. Doesn't the image on the right look more fun?

**If visiting the ELWP site, the drawing activity will be done on site and the slideshow can end. Here you would explain that you are taking a trip to see the site.*

Slide 6:

Now we are going to do a colouring activity! Make sure that everyone has a worksheet, a partner, and crayons in every colour listed on the board.

Slide 7:

For the first part of our drawing we will only be using our black crayon. We are going to draw just the outlines of our abandoned land. Draw some buildings, fences, bricks, or whatever else you want in the box on your worksheet. We will have 5 minutes to do this.

Slide 8:

Now we are going to swap papers with our partner. You are going to help rewild your land and your partner is going to help rewild your land!

Slide 9:

Now that you have abandoned land, you are going to REWILD it! Using your colourful crayons draw different plants and animals that could possibly live on the land. Draw at least 3 different animals and 3 different plants. We will have 10-15 minutes for this part of the drawing.

Slide 10:

Swap worksheets back with your partner!

**If using the worksheet with the optional writing task:* Now using a pencil write 3 types of animals you see on the paper and 3 different types of plants. Look at how much fun the animals are having in their new playground!

**If visiting the ELWP site, slide 11 and beyond could be done back in the classroom after the site visit.*

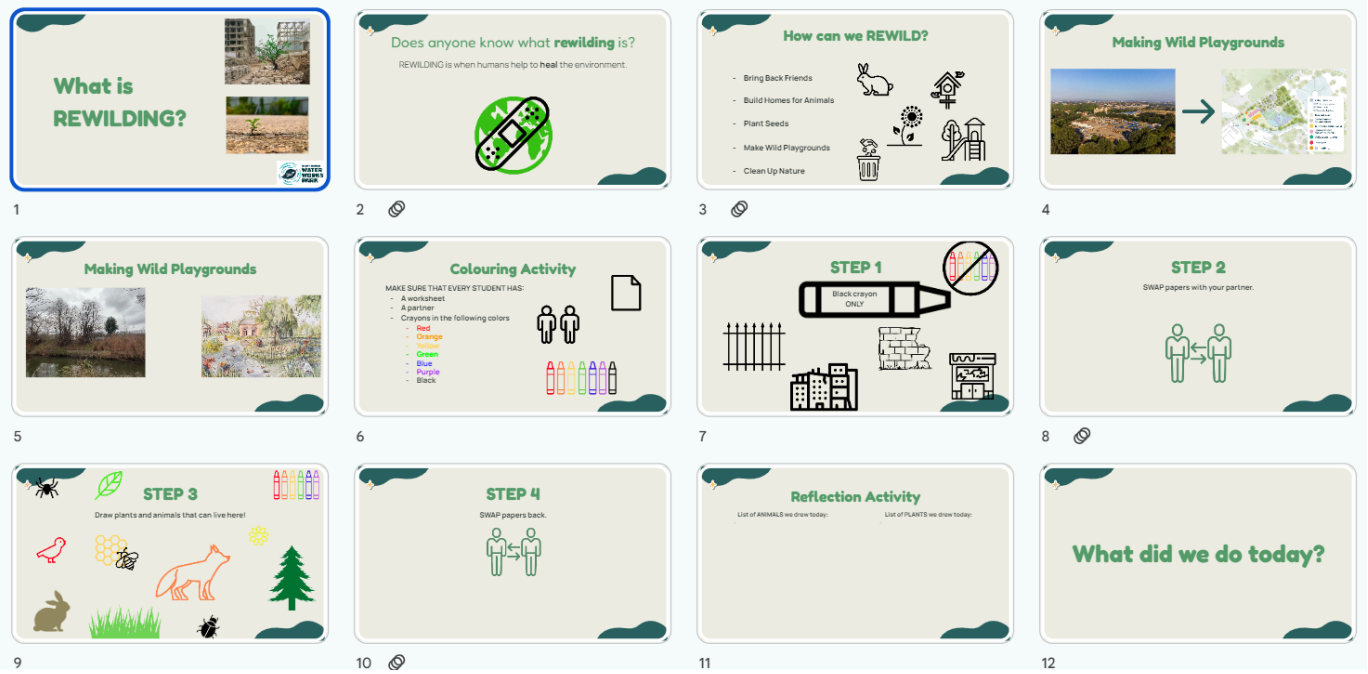
Slide 11:

Now we are going to make a big list of all of the animals and plants on our land!

Slide 12:

Let's think about what we did today! *Below is a list of reflection questions to ask your students*

1. What is your favourite thing you drew today?
2. If you were an animal that lived on your rewilded site, what kind of animal would you be?
3. What can you do to help animals and plants where you live?
4. Is there any land like this near your home?
5. If you were to do this again, what other kinds of animals or plants would you draw?


What is REWILDING?
1
Does anyone know what rewilding is?
REWILDING is when humans help to heal the environment.
2
How can we REWILD?
- Bring Back Friends
- Build Homes for Animals
- Plant Seeds
- Make Wild Playgrounds
- Clean Up Nature
3
Making Wild Playgrounds
4
Making Wild Playgrounds
5
Colouring Activity
MAKE SURE THAT EVERY STUDENT HAS:
- A worksheet
- A partner
- Crayons in the following colors
- Red
- Orange
- Yellow
- Green
- Blue
- Purple
- Black
6
STEP 1
Black crayon ONLY
7
STEP 2
SWAP papers with your partner.
8
STEP 3
Draw plants and animals that can live here!
9
STEP 4
SWAP papers back.
10
Reflection Activity
List of ANIMALS we drew today:
List of PLANTS we drew today:
11
What did we do today?
12


REWILDING COLOURING SHEET Name: _____
Draw your rewilded habitat
Idea Box


REWILDING COLOURING SHEET Name: _____
Draw your rewilded habitat
Some plants and animals that live in my habitat are:
Animals
1. _____
2. _____
3. _____
Plants
1. _____
2. _____
3. _____

Special Tree

Art and Science

Content Overview

After a presentation about different types of trees, parts of a tree, and leaves, students will break into groups and choose a special tree that they will document thoroughly. They will fill out a worksheet where they will take bark rubbings, observe the surrounding animals, and draw the tree in different seasons.

Learning Objectives

1. Explain the difference between the different types of trees, and identify them when they are seen, based on bark texture and colour, as well as leaf types.
2. Observe and document changes in a tree and its surroundings over time, including seasonal changes, growth patterns, and other environmental changes.
3. Work collaboratively, in pairs or small groups, building teamwork skills.

Associated National Curriculum Requirements

1. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
2. Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals.
3. Observe changes across the four seasons.
4. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.

Content

Resources:

Slideshow: Special Tree Slideshow

Worksheet: Special Tree Worksheet.pdf

Necessary Materials:

- Crayons (for bark rubbings)
- Drawing materials (crayons / coloured pencils / pencils)
- Clipboards (to lean on for drawing outside)
- Worksheets for each student
- Slideshow (for teacher)
- Whiteboard

Prepwork:

- Print out a worksheet for each student
- Look over slideshow
- Gather necessary materials

Activity

IN CLASSROOM: Use the attached slideshow to have the students review key concepts to prepare for the activity.

Slideshow reviews the following topics:

- *What are trees the students are already familiar with? (Brainstorm)*
- *Deciduous vs. Evergreen trees*
    - *Why are they different?*
    - *<u>Mini-activity:</u> Look at different pictures, and determine whether the trees are deciduous or evergreen.*
- *Parts of a tree*
    - *What does each part do?*
    - *What are some words we can use to describe leaves?*
        - *(Spiny, smooth, long, narrow, heart-shaped, wavy, color)*
    - *<u>Mini-activity:</u> Name each part of the tree*
- *Seasonal changes*
    - *Trees look different depending on which season they are in*
    - *<u>Mini-activity:</u> Look at different pictures of trees, and determine which season they are in*

<u>OUTSIDE CLASSROOM:</u>

1. Break up the group into groups of 2 - 4, depending on the class size and the teacher's discretion
2. Go through the parts of the worksheet, and explain what to do in each:
    a. Draw the tree
    b. Take a bark rubbing with a crayon
    c. Draw a leaf of the tree
    d. Look closely at the tree to find the animals and plants that live around it
    e. Students circle deciduous or evergreen
    f. Draw the tree in a different season
3. Each group chooses a different tree, and each student receives a worksheet. The students get 25 minutes to complete the activity.

Considerations / Accessibility Concerns

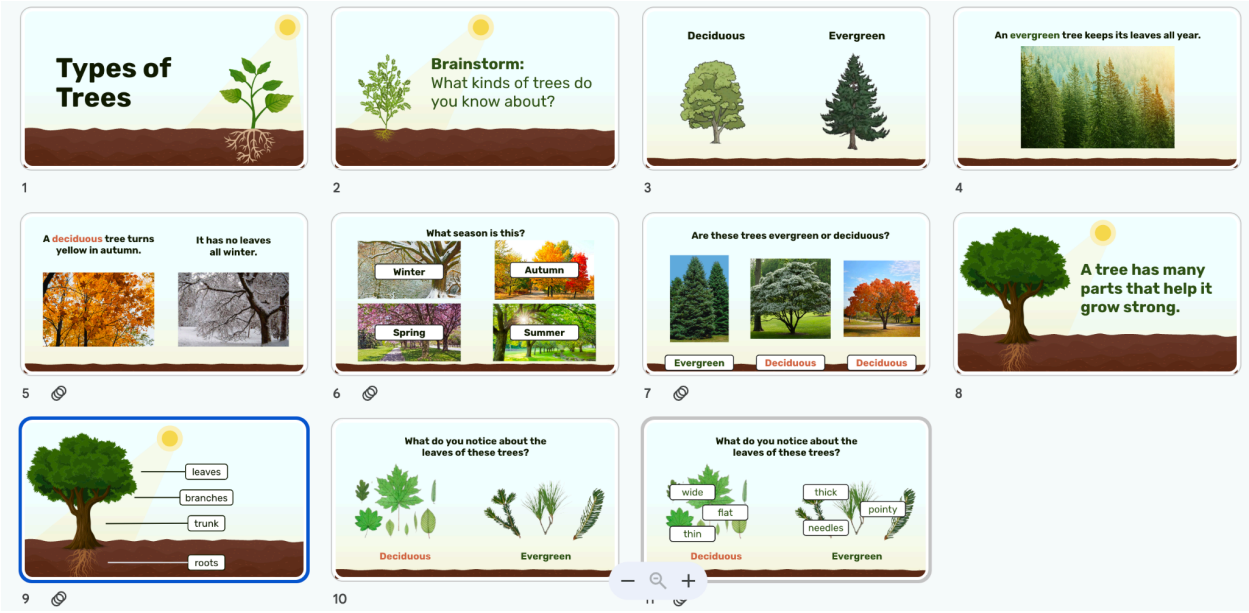
- Modifications can be made in case of rain or inclement weather.
    - There is an included file that contains printables that can be used in replacement of actual trees.
    - Bark rubbing alternative: Students can look at pictures of tree bark in the alternative presentation, or if possible, the teacher can bring in bark samples
    - Drawing leaf alternative: Again, if possible, the teacher can bring in samples of common leaves, or they can see photographs of leaves in the alternative presentation

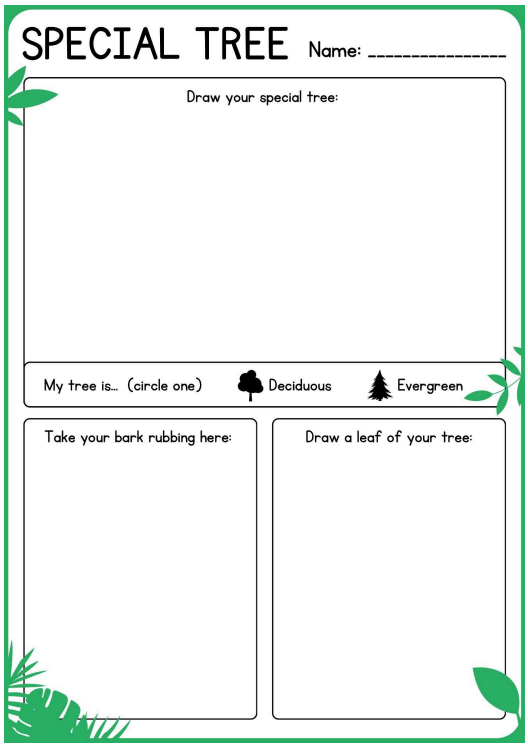
Risk Assessment

Identified Risk	At Risk	Likelihood/Severity	Preventative Controls	Other Measures
Tripping	Children & Supervisors	Low risk Minor injury	- Staying in pairs with supervisors around - Comfortable walking shoes	First aid kits for injuries
Disturbance to the environment	Animals and plants	Moderate risk	- Adult supervision - Staying on approved paths - Correct handling of animals, or asking for help	Returning affected areas to their original state
Bug bites	Children & Supervisors	Low risk	- Awareness not to provoke animals - Adult supervision with bugs	First aid kit for injuries
Allergies	Children & Supervisors	Moderate risk Moderate injury	- Taking antihistamines as needed - Supervisor and student awareness of allergy - Modifications for severe allergies	Have EpiPen if needed

Reflection Questions

1. Ask students to describe the leaves, bark, or animals that lived around the tree, and ask other students to raise their hands if their special tree had similar traits.
2. Were there any surprises in this activity that you didn't expect?
3. How did your special tree make a home for animals or other plants?
4. If you were one of the squirrels/birds/bugs we saw today, which part of your special tree would you choose to live in? Why?


Types of Trees
1
Brainstorm:
What kinds of trees do you know about?
2
Deciduous
Evergreen
3
An evergreen tree keeps its leaves all year.
4
A deciduous tree turns yellow in autumn.
It has no leaves all winter.
5
What season is this?
Winter
Autumn
Spring
Summer
6
Are these trees evergreen or deciduous?
Evergreen
Deciduous
Deciduous
7
A tree has many parts that help it grow strong.
8
leaves
branches
trunk
roots
9
What do you notice about the leaves of these trees?
Deciduous
Evergreen
10
What do you notice about the leaves of these trees?
wide
flat
thin
thick
pointy
needles
Deciduous
Evergreen


SPECIAL TREE
Name: _____
Draw your special tree:
My tree is... (circle one)
Deciduous
Evergreen
Take your bark rubbing here:
Draw a leaf of your tree:


SPECIAL TREE
Draw the animals and plants you can see around the tree.
What would this tree look like in a different season?
This is my tree in... (circle one)
Spring
Summer
Winter
Autumn

Biodiversity Bingo Card Game

Science and Literacy
Presentation: 5 mins
On-site Activity: 40 mins

Content Overview
Biodiversity Bingo is an engaging and educational game designed specifically for Key Stage 1 students. The game takes a twist on the classic bingo format with a major focus on biodiversity and a minor focus on literacy.

Learning Objectives Overview
The goal of Biodiversity Bingo is to engross Key Stage 1 students in a fun and educational game that promotes awareness and understanding of biodiversity.

1. Students will be able to recognize and name various ecosystems, animals, plants or habitats depicted on the bingo card (e.g., forest, ponds, meadows, swans, squirrels, ducks).
2. Develop and enhance students' observational skills as they actively seek and identify elements of biodiversity during the game.
3. Students will connect biodiversity concepts to their local environment, recognizing the species and ecosystems present in their community.

Associated National Curriculum Requirements
1. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
2. Identify and name a variety of common animals that are carnivores, herbivores and omnivores
3. Identify and name a variety of plants and animals in their habitats, including micro-habitats

Content
Resources:
Slide Show: Biodiversity Bingo Card Game Slides
Bingo Card Game Activity: Biodiversity Bingo.pdf

Necessary Materials:
1. ELWP Biodiversity Bingo Card
2. Drawing materials/coloured pencils/crayons/markers
3. Clipboards

Prepwork
1. Gather necessary materials listed above.
2. Teachers should present the ELWPs slideshow of various species to students, prior to the on site program.
3. Teachers should print the custom ELWP bingo card that includes relevant species, conservation, or wildlife within the ELWP.

Activity Instruction:

Explain to students that they will be exploring their surroundings to find and identify different plants, animals, and environmental features provided on their bingo cards personalised by the teacher in conduction.

Rules:
The context of a bingo game is to mark squares for young students to complete a row set of five (horizontal, vertical, or diagonal) on their bingo card.

ONSITE:

a. Remind students to stay close to their group members, be safe and respectful of nature during the game, avoiding disturbance to plants and animals.
b. Teachers may consider organising the game in small teams or groups to encourage collaboration and peer interaction.
c. Keep each game round relatively short (no more than 20 minutes) to accommodate the attention span of Key Stage 1 students.
d. Maximum of two rounds, after each round, encourage students to share their findings and observations, encouraging discussion about the different elements of biodiversity.
e. Offer positive reinforcement and praise for students' efforts and discoveries during the game.

Accessibility Concerns:

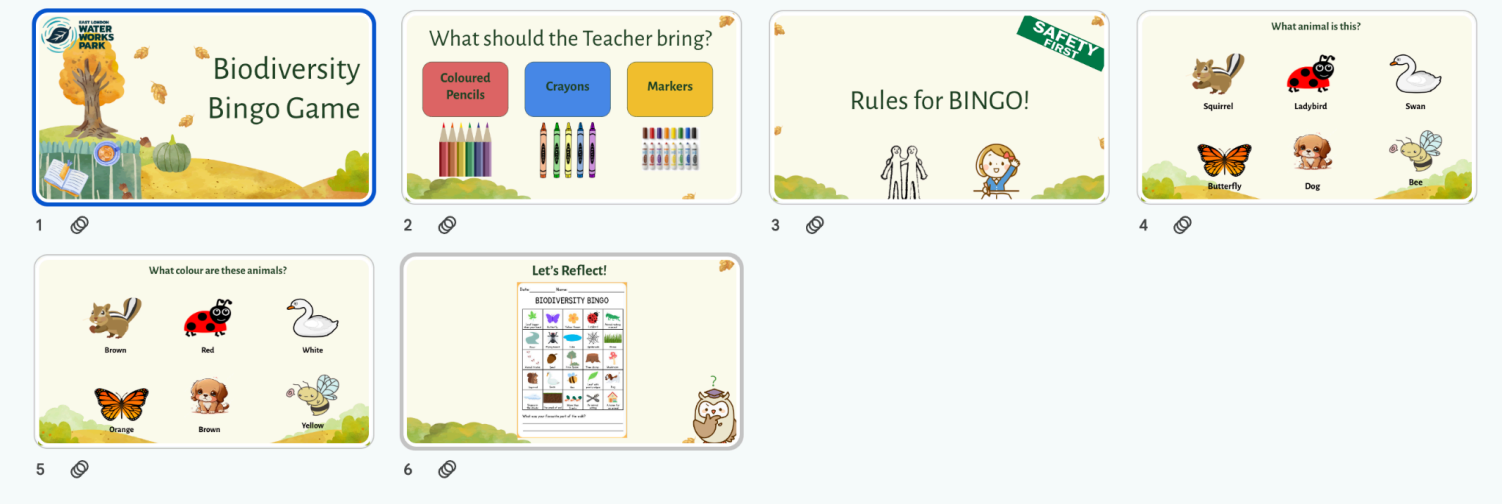
1. Colour Blindness
2. Mobility concerns (EX. Wheelchair assistance required).
3. Motor skills issue (Unable to draw with a pencil/marker)

Risk Assessment:

Identified Risk	At Risk	Likelihood/Severity	Preventative Controls	Other Measures
Tripping	Children & Supervisors	Low risk Minor injury	- Staying in pairs with supervisors around - Comfortable walking shoes	First aid kits for injuries
Disturbance to the environment	Animals and plants	Moderate risk	- Adult supervision - Staying on approved paths - Correct handling of animals, or asking for help	Returning affected areas to their original state
Allergies	Children & Supervisors	Moderate risk Moderate injury	- Taking antihistamines as needed - Supervisor and student awareness of allergy - Modifications for severe allergies	Have EpiPen if needed

Reflection Questions:

1. What was your favourite thing you found? Why was that your favourite?
2. Did you see any cool animals or things you didn't know about before?
3. Did you feel like you made friends with nature during the game?
4. Did the game teach you about taking care of animals and plants? What did you learn?



Date: _____ Name: _____

BIODIVERSITY BINGO

Leaf bigger than your hand	Butterfly	Yellow flower	Ladybird	Animal making a sound
River	Flying insect	Lake	Spiderweb	Grass
Animal tracks	Seed	Free Space	Tree stump	Mushroom
Squirrel	Swan	Bee	Leaf with pointy edges	Dog
Shapes in the clouds	The smell of soil	More than 5 ants	An animal eating	A home for an animal

What was your favourite part of the walk?

_____

_____

Date: _____ Name: _____

BIODIVERSITY BINGO

Bee	Dog	More than 5 ants	The smell of soil	Animal making a sound
River	Leaf with pointy edges	Leaf bigger than your hand	Spiderweb	Flying insect
Tree stump	Seed	Free Space	Lake	Animal tracks
A home for an animal	Swan	Grass	Mushroom	Butterfly
Squirrel	Ladybird	Yellow flower	An animal eating	Shapes in the clouds

What was your favourite part of the walk?

_____

_____

Date: _____ Name: _____

BIODIVERSITY BINGO

Lake	Leaf bigger than your hand	River	Ladybird	Seed
Spiderweb	Yellow flower	Tree stump	Swan	Flying insect
The smell of soil	Bee	Free Space	Animal making a sound	Leaf with pointy edges
Grass	More than 5 ants	Animal tracks	Mushroom	Squirrel
Dog	A home for an animal	An animal eating	Butterfly	Shapes in the clouds

What was your favourite part of the walk?

_____

_____

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