# PFFINROCK HABITATS

10

workshop facilitators guide



This book was produced in partnership by the Heritage Council and Cartoon Saloon, inspired by the engagement from the touring exhibition "Puffin Rock Habitats"

The Heritage Council helps to protect nature in Ireland. By publishing guides like this one, it aims to help everyone - from beginners to experts - to care for wildlife. The Heritage Council also runs the Heritage in Schools Scheme, which brings specialists to primary schools to teach children about nature and heritage through fun indoor and outdoor activities.

#### www.puffinrockhabitats.com

Published in 2024 by the Heritage Council Content, Design, Pedagogy - Tasneem Khan **Project Manager - Catherine Casey** 

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# An Chomhairle Oidhreachta The Heritage Council

# THE STORY

Puffin Rock celebrates Ireland's magnificent natural environment and features themes of climate change, belonging, resilience, and friendship.

Through adventures, big and small - the characters highlight the importance of protecting nature and wildlife.

The story connects Ireland to faraway lands through the underlying narrative of changing climatic conditions and habitat loss across the globe. As creatures relocate to Puffin Rock, they uncover connections across species and habitats.

The relationships and artwork create an implicit emphasis on the wonder and value of each living form.



# PUFFIN ROCK HABITATS

an interactive exhibition & workshop series

Join Oona and Baba as they take you on a sensory journey into the diverse ecosystems, habitats and niches, that make up their enchanting island!

These habitats are intricately woven together and each habitat is a 'home' for their many fascinating & curious friends.

Explore the stories of every life-form and the many moving parts that ensure these landscapes and waterscapes are 'happy homes' for all of us.



# Welcome to Puffin Rock Habitats!

Are you accompanying a young explorer? Are they ready to become a nature hero?

Well, grown-ups play a vital role in guiding child-centered explorations of our local landscapes and their interconnected habitats.

If you're here with your children / students, we encourage you to **co-explore** and co-create with each habitat!

Take a few moments to **read the emotive text on each panel** along with your little ones, to discover the many hidden layers!

Get to know the animals - Who is the lead character introducing you to each habitat? Do you know their name? What kind of animal are they? What makes their home a happy home? What might make them sad? Does their habitat remind you of something you have seen or visited before?

Each habitat has a fun activity that helps us understand what makes these places ``happy homes'' for the plants and animals that live there. Look, listen, touch, make - join us on the sensory journey!



Here are a few tips that you can use along this Puffin Rock Habitats journey with your little explorer! (click on the habitat name for more reading)

<u>Marine Habitat</u>: Get them to search for one creature they have never seen before. Are there animals and plants here that need each other's help? What would happen if all the fish were gone?

Intertidal Habitat : Is there a place you have visited that looks similar to this? Can you collectively locate three creatures that can survive both underwater and on land? Does the water level stay the same throughout the day? How do animals like barnacles feed?

<u>Wetland Habitat</u>: Can you spot all the stages of baby frogs as they develop from eggs to frogs? How many frog eggs, tadpoles and froglets can you spot? What do those tadpoles eat underwater? Is there a type of wetland near your home?

<u>**Grassland Habitat :**</u> How many types of insects can you spot around the flowers? Who lives underground? Do mushrooms have a secret underground network? Will you make a flower at our craft table for Isabelle and pin it up on our flower wall?

Don't miss the **Puffin Rock Nature Hero challenge** at each habitat!

We have some suggestions of things that you can do when you leave, to help protect habitats in your area. And get a special Puffin Rock Nature Hero Certificate! Check out our website to find out how your family can participate to help look after Oona, Baba and all their Puffin Rock friends!

#### [CLICK HERE TO GET INVOLVED]



# WORKSHOPS













The Habitats Exhibition project has developed three types of workshops, throughout which children are immersed in the layers of life and wonder within each habitat;

- At the Exhibition
- Back at school
- In the field

The ecological and pedagogical aspects of the Habitats Exhibition have been developed by Tasneem Khan (S.E.A School) in collaboration with Catherine Casey (Heritage Council) and will be made available to facilitators through training workshops and the Facilitator's Guide.

The Habitat Workshops are magical adventures that connect the enchanting stories of Puffin Rock characters with the real wonders of Irish landscapes.

Puffin Rocks Habitats is committed to empowering adults (educators, artists, exhibition staff, parents) in becoming active facilitators and guides for our children, through their process of discovery and development.





With exhibitions situated across the Irish landscape, we connect the enchanting stories of key characters from "Puffin Rock" to the fascinating wilderness that mosaics our local coastlines.

Blending fact and fiction through place-based, interactive workshops, has profound impacts learners' emotional on intelligence, biophilia and cognitive information processing.

We will explore the many layers of life and wonder within each habitat using interactive tools & activities that have been designed in a workshop format.

To learn from, connect with, explore and actively care for "place". The goal of the exhibition and workshops are to ignite a sense of belonging and wonder among youth who call Ireland Effective home. conservation efforts stem from а deep connection to nature. This is a layered multi approach for children and communities to connect with our natural heritage and biodiversity. While habitat biodiversity loss and are compounding global problems, positive interventions can help highlight our collective role in safeguarding the environment for future generations.



As parents and educators, we are participate in this here to collaborative exploration of the landscape and its enmeshed habitats.

We learn through methods of constructivism, cognitivism and taking connectivism every explorer on a journey from care to criticality. Encouraging you to step out to a beach or pond near your home!



workshops have been developed for age groups from 4 to 12, with adaptable features and activities for inclusive and neurodiverse learning.



#### **MARINE - INTERTIDAL - GRASSLAND - WETLAND**



Let's talk about habitats! Each habitat is a fantastical universe - its own little world - a special home for plants, animals, other living things and unique geographic features.

But here's the cool part, all these habitats are part of something bigger called a biome, which is characterised by the general climate and region of the world that we are in. It's like a huge neighbourhood where everything, living and non-living, relies on each other to keep happy and healthy.

So, while exploring the habitats, you don't have to follow any particular order. You can start in the grasslands or by the water's edge – it's up to you! After all, each habitat is connected and impacts all the others - like a big web.

Just like Oona, who has friends and adventures and stories from all these amazing habitats - so do the other animals, insects, plants, rocks, and water - they move between and across habitats. So, feel free to move around and explore in any order you like!

# THE FACILITATOR'S GOALS

- To illuminate the structure of each habitat
- To deconstruct habitat components
- To scaffold learning through play
- To help make meaning of place
- To evoke a spirit of inquiry
- To respond to each child's developmental phase

# CHILDREN'S OUTCOMES

- Curiosity & biophilia
- Extended observation
- Sensory exploration
- Making comparisons
- New vocabulary
- Geo-awareness
- Identification
- Cause and effect
- Reflection and memory

We aim to promote the development of critical thinking and emotional intelligence by curating our learning outcomes across a moving spectrum from **Care to Criticality**.

Fostering **excitement**, **joy**, and connections while encouraging **understanding of networks**, **geoawareness**, **causality**, and **vocabulary** development.

Through activities that encourage **comparing**, **contrasting**, **asking questions** and **sensory immersions** you will notice **shifts in attitude**, **concentration** and **reflection**.

This approach acknowledges that children will leave with different resolutions of learning, but the overarching goal remains the same: to cultivate a sense of wonder, exploration, and understanding of our natural landscapes.

## PUFFIN ROCK HABITATS & THE NATIONAL CURRICULUM

Subject

**STRANDS | ELEMENTS** 

[that connect to our

workshops / activities]

**SEE** (social and environmental education)

Living Things Environmental awareness & care Energy & Forces **STEM** (science, tech, engineering, math)

Shapes Spacial concepts Measures / units / scale Data

Distinguishing parameters: length, weight, temp, time Interpreting data

Applying and problem-solving Estimating and measuring Integrating and connecting Reasoning Implementing Understanding and recalling Evaluating **ART ED** (visual arts and music)

Drawing Construction Material play Listening & Responding

Creating Looking and listening Responding

Awareness of colour, texture, pattern, form, shape, Awareness of sounds Making Designing Activating the fictional lens

UNITS [that connect to our workshops / activities]

**SKILLS** [that connect to our workshops / activities] Plants & Animals Sound, Light & Heat Properties of natural materials Caring for my environment

Working scientifically Questioning Predicting Investigating and experimenting Sorting and classifying Recording Exploring Analysing

# **SPHE** (social and personal health) Myself and the wider world **Environmental care** Awareness of inclusion **Cause and effect Engagement with digital media**

# ALIGNING WITH AISTEAR: ulum Framework

# the Early Childhood Curriculum Framework

Aistear is based on 12 principles of early learning and development. These are clustered in three groups.

The Aistear principles highlighted in blue are made explicit through our learning modules.

- 1. Children and their lives in early childhood:
  - the child's uniqueness
  - equality and diversity
  - children as citizens
- 2. Children's connections with others:
  - relationships
  - parents, family and community
  - the adult's role

- 3. How children learn and develop:
- holistic learning and development
- active learning
- play and hands-on experiences
- relevant and meaningful experiences
- communication and language
- the learning environment

We believe that it is this sense of biophillia that translates into meaningful work and lifestyles that will eventually influence conservation, animal welfare and the environment at a local and global scale.

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nces xperiences age















# MEET THE LEAD CHARACTERS



**Oona** is a young, adventurous Atlantic puffin who loves exploring the many habitats and wonders of Puffin Rock with her little brother Baba by her side.



Baba is a curious and playful puffin chick, always ready for exciting adventures with his big sister Oona and their friends.





Silky is a fun-loving and wise seal who shares her vast knowledge of the ocean with her puffin pals on Puffin Rock.



Marvin is a shy and agile otter who enjoys splashing around in the water, collecting natural treasures and playing with his friends.



Bernie is a funny and intelligent hermit crab, who knows all about the sea shore and understands the worlds of both land and water.



Isabelle is a strong and kind tufted puffin who adds a lot of joy and learning within her community of new friends and family.



#### Dive into Ireland' Silky the seal!

We are visited by sea creatures and seastories from across the mighty Atlantic, Celtic, and Irish Seas - this salt-water home is over ten times larger than the land.

Out at sea the winds can be strong, and the weather can change quickly, painting the cold seas in so many shades of blue, grey and green. Whales dive into the deepest canyons, but breathe the same air as you on the surface. You will meet shapeshifting octopus, stealthy eels, sparkly plankton, beautiful jellyfish, and cute anemones! This marine home is a collage of underwater habitats, like cities - connected to one another, and every creature plays a part in the ocean's incredible story.

## MARINE HABITATS

#### Dive into Ireland's vast marine world with



Join Bernie the hermit crab, on an exploration of the enchanting world between the tides and under the waves - across Ireland's 3,172 km coastline!

These intertidal homes may be gentle and mysterious seaweed forests or magical rock pools full of bizarre life forms.

beaches.

This is the ocean's backstage where creatures master the art of disguise. Discover bustling neighbourhoods where life contends with both salty submersion and windy exposure, creating a dynamic habitat full of adventure.

# **INTERTIDAL HABITATS**

They are also tall sea cliffs with crashing waves and calm coves, caves, and long



Marvin the otter!

These are nature's magical sponges that store precious sweet water.

More than just homes, wetlands are nature's filters, held together by plants with deep roots, flexible stems, and colourful flowers.

Explore our many different wetlands - lakes, rivers, bogs, fens, swamps, peatlands – each a surprising and unique habitat.

We know our wetlands are happy homes by looking out for their curious little messengers - frogs, newts, beetles, birds, and dazzling dragonflies.

# WETLAND HABITATS

#### Take a plunge, walk, and wade into the enchanting world of Ireland's wetlands with



#### Welcome to the magical world of grassland habitats and view this habitat through the adventures of Isabelle the tufted puffin!

Our lush meadows, fields and machair plains are full of surprises. Explore ancient grasslands, uncovering a hidden world of life – from underground fungi to buzzing bees and butterflies.

Discover the intricate web of creatures that depend on each other to create their happy grassland home.

Keep an eye out for our garden helpers, the pollinators, whose hard work not only keeps the grasslands thriving but also helps our food grow!

# **GRASSLAND HABITATS**

# ANATOMY & PEDAGOGY OF THE EXHIBITION



watch out for: fatigue, boredom, feeling lost

EXPERIENCE GOALS

**CRITICALITY**] **CARE TO** [ FROM EXCITEMENT

JOY

CONNECTION

EMPATHY

CONTRASTING

INQUIRY

VOCABULARY

CAUSALITY

**GEO-SPACIAL** AWARENESS

ATTITUDE SHIFTS

CRITICAL THINKING

# HABITAT INTERACTIVES

Each habitat installation within the exhibition consists of 2 key elements: i) the habitat scene ii) the habitat interactive elements

The 4 interactive elements embedded in the exhibition have been curated as learning tools that can be explored through a process of self discovery.

All the interactive elements have been developed keeping in mind the multidimensional nature of child development & varied touch-points that can trigger learning across developmental stages as well as neurodiverse learning preferences.

Each of the interactive zones can also be used by teachers / parents / facilitators as modes of engagement, to enhance immersion and discussion connected with the habitat by using the sensory cues and prompts as entry points for further inquiry.



### The Viewmasters

Each view master provides a window into a particular microhabitat or unique zone within the varied Intertidal regions of Ireland!

Get a glimpse real landscapes around us that are reflections of scenes from Puffin Rock. Try and figure out who lives where. Use the map to discuss where these pictures might be from.



Find a still and quiet position. Listen to how animals communicate underwater. Who is making these sounds? What might they be saying? How far can these sounds travel through water? What human activity might disrupt or disturb this communication? Observe how some of our ocean's giants swim in groups, play together, and also communicate through body language.



#### Make-A-Flower

We often collect flowers while walking through a meadow or in a garden. Can we identify which flowers are most attractive and delicious for our local pollinators?

Locate the many pollinators in the Puffin Rock grassland habitats and figure out what flowers they like most. Use the craft materials to make a paper flower and add this to our flower-wall at the exhibition!



Real objects have more power than photographs or words. Learning is richer and deeper when children see, touch, and explore real items.

Use the wetland detective's desk to encourage careful observation, to search for clues and new questions. What is each collected object? Where is it form? What does it tell you? Then extend this further by taking a detective book and use it on your next trip outdoors.

### Underwater Communication

#### Wetland Detective

# WORKSHOPING

Within the exhibition space facilitators are encouraged to conduct 90 minute workshops that guide children through a prompted exploration of each habitat.

Use each of the habitat scene installations and interactive installations to uncover details of the ecosystem, lifeforms, and make connections to and from the Puffin Rock story line.

- Divide your group into 4 teams of explorers and assign 1 team to each habitat. Ask them to observe, read (if possible) and look closely (**using habitat discovery prompts**).
- Spend some time discussing each lead character, their personality, what they are telling us about their habitat.
- Then, introduce each team to their corresponding interactive zone, explaining the objectives (as described on the previous page)
- Get each team to move over to the next habitat every 15 minutes.
- Close the workshop with a game or activity that brings the group together. (e.g., web of life, flower origami, echo-location)

#### Habitat Discovery Prompts:

Marine Habitat : Search for one creature they have never seen before. Are there animals and plants here that need each other's help? What would happen to the seals if all the fish were gone?

Intertidal Habitat: Is there a place you have visited that looks similar to this? Can you collectively locate three creatures that can survive both underwater and on land? Does the water level stay the same throughout the day? How do animals like barnacles feed?

**Wetland Habitat** : Can you spot all the stages of baby frogs as they develop from eggs to frogs? How many frog eggs, tadpoles and froglets can you spot? What do those tadpoles eat underwater? Is there a type of wetland near your home? Are there different types of wetlands in Ireland?

**Grassland Habitat :** How many types of insects can you spot around the flowers? Who lives underground? Do mushrooms have a secret underground network? Which flower will you make for Isabelle and pin it up on our flower wall?

Don't miss the Puffin Rock **Nature Hero Challenge** at each habitat!







INTERTIDAL

WETLAND

GRASSLAND



## fisherman's calendar

## herbarium

## seed-travel

## whose grassland?

GRASSLAND

#### grass weaving

### floating forms

# WHY PLACE-BASED LEARNING?



Place-Based Education uses the local community and environment as the starting place for curriculum learning, strengthening community bonds, appreciation for the natural world, and a commitment to citizen engagement.

While planning workshops to explore your backyard and field sites always consider your modes of exploration for effective place based learning:

#### Tell a local story

• A personal story or local folklore

#### **Discover and Describe**

- I notice, I wonder, it reminds me of...
- Look inward and outward

#### **Collections and Connections**

- Find something that captures your attention
- Observe it closely
- Share something about it, fact or fiction

#### **Zooming In and Zooming Out**

- Great for honing attention
- Introduce perspective or points of view (POV)
- Viewfinder, or through the eyes of a creature

#### Mapping

- Sensory Mapping
  - textures, smells, sounds
- Memory Mapping
  - associations, stories
- Physical Mapping
  - make your own units, directionality, landmarks

# THE LEARNING JOURNEY

As facilitators, within each habitat we will facilitate three broad types of experiences - It is very important to keep these **building blocks** in mind while developing or adapting activities that you can conduct **back at school** or out **in the field**!

**Constructive -** This involves observing, asking questions and building ideas

**Cognitive -** Here we activate the working memory, organising and interpreting information

**Connective -** We then make connections between new and existing knowledge and initiate collaboration

you know you're on the

#### **OBSERVE - ATTEND - WONDER - PLAY - PAUSE - RECALL - CONNECT - REFLECT - ACT**

right track, if you



WETLAND

# INTERTIDAL

GRASSLAND





Make observations about the different creatures and characters in the marine habitat.

Do they have different body types / shapes? Compare them to yourself!



Pick one and notice; the size, shape, tail, limbs, eyes, mouth, nose, colour, etc.



Draw from memory.

Discuss what we can guess about the creature based on these features! Where does it live, what does it eat, how does it move?

	PLANNING LINKS TO
	NATIONAL CURRICULUM & AISTEAR
CIPLES	WELL BEING
AR PRIN	IDENTITY & BELONGING
6 AISTE	COMMUNCATING
AGES 4 -	EXPLORING & THINKING
L LINKS	SEE SEE
SUBJECT	STEM
12 KEY	ART ART
AGES 7 -	SPHE SPHE
R INFO	WHAT DOES THE SHAPE LOOK LIKE?
FURTHEF	WOULD IT MOVE FAST OR SLOW?
PROMPTS, I	WHO IS IT HIDING FROM AND WHAT IS IT HUNTING?
CLUES,	BACKGROUND READING



Materials

Light rope or yarn Sticky tape Picture and name cards of marine creatures

Activity

Ask the question 'if you were an octopus / a hermit crab / an eel / a barnacle - who would be your best friend?'

Sit in a circle and pick one card each, tape it to each child's collar / chest - so they identify with and talk about the organism they are.

Start with the child who has the seaweed card. Tie the yarn around their finger and ask them to hold it up. Then, discuss and select a creature in the group who depends on, or eats the seaweed.

Extend the yarn across the circle and wrap it around the limpet's finger! Continue the web building until everyone is connected.

Now introduce a problem - something that damages or kills one life form. Discuss the problem. Then slowly deconstruct the web based on if and how the others are affected.

	PLANNING LINKS TO
	<b>NATIONAL CURRICULUM &amp; AISTEAR</b>
AGES 4 - 6 AISTEAR PRINCIPLES	<ul> <li>WELL BEING</li> <li>IDENTITY &amp; BELONGING</li> <li>COMMUNCATING</li> <li>EXPLORING &amp; THINKING</li> </ul>
AGES 7 - 12 KEY SUBJECT LINKS	SEE   STEM   ART   SPHE
CLUES, PROMPTS, FURTHER INFO	DO SOME CHARACTERS GET LINKED INTO THE WEB MORE THAN ONCE? WHAT HAPPENS IF YOU INTRODUCE A DISTURBANCE - LIKE TAKE AWAY ALL THE EMPTY SHELLS? (HERMIT CRAB HOMES) BACKGROUND READING

#### **BACK AT SCHOOL**

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# INTERTIDAL



# Materials

<u>A DIY Kaleidoscope</u> An assortment of pebbles, shells, sea-glass, sweet wrappers, other beach collections

Activity

Mix all the beach collections into a big tray or separate bowls and ask the group to sort it out based on different cues.

Organise by size in lines; organise by colour in clusters, organise by material type; organise by natural and man-made, etc.

Working in pairs, ask them to make a personal selection of any 5 items - anything of their choice. Discuss each pair's selection to make meaning of their choices.

Place each collection in the kaleidoscope and explore the artistic depiction of their choices.

	PLANNING LINKS TO
	<b>NATIONAL CURRICULUM &amp; AISTEAR</b>
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6 AISTE	COMMUNCATING
AGES 4 -	EXPLORING & THINKING
T LINKS	SEE SEE
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- 12 KEY	ART ART
AGES 7 -	SPHE SPHE
·····	
URTHER INFO	TELL THEM WHERE YOU COLLECTED THESE ITEMS, A LITTLE BIT ABOUT THE PLACE.
APTS, FI	DISCUSS WHERE EACH ITEM MIGHT HAVE
S, PRON	GOTTO THE BEACH FROM.
CLUE	KALEIDOSCOPE MAKING WORKSHOP?



A blue bed-sheet Intertidal zone poster Spray/mist bottle with water

Divide the class up into creatures from the upper, middle and lower shore zones. E.g., anemone, sea stars (low) | hermit crabs, mussels (mid) | periwinkles, barnacles (upper)

Standing in a cluster - determine which side of your class represents the open sea and which side is land (pick opposite sides).

Activity

Based on the animal assigned ask them to spread out and choose a spot closer to the sea or land. Discuss, debate, and finally explain who lives in which zone, what they eat and how they feed.

Stai she

Standing on the seaward side of the room wearing the blue sheet as a cape, introduce yourself as the tide and start walking towards them.

Spray each creature as the tide passes over them, to activate their "feeding response"

	PLANNING LINKS TO National Curriculum & Aistear
AGES 4 - 6 AISTEAR PRINCIPLES	<ul> <li>WELL BEING</li> <li>IDENTITY &amp; BELONGING</li> <li>COMMUNCATING</li> <li>EXPLORING &amp; THINKING</li> </ul>
AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	WHAT IS THE DIFFERENCE BETWEEN SESSILE, MOTILE & SEDENTARY? A USEFUL DIAGRAM / POSTER OF INTERTIDAL ZONATION SPECIES SELECTION AND ID

# WETLAND

Activity

# metamorphosis

- Card paper squares
- Materials Chia seeds or Basil seeds
- Small plastic bowls with tepid water
- Printouts of 4 stages of frog development Tape

Lead with questions, do frogs live on land or in the water or both? What other animals live in both places?

Where do baby frogs come from? - Eggs? And what do those eggs look like? Now, hand out a bowl with a teaspoon of chia seeds in each, add a little water to them and ask them to be patient (return to this at the very end to discuss texture and fragility).

Where do frogs lay their eggs? Still or flowing water? Stick the picture of frog eggs on the board and draw an arrow and stick the tadpole picture beside the arrow.

Discuss the shape and features of a tadpole. How big is the tail? How does it move? How does it breathe? What does it eat underwater?



Now, repeat steps 3 & 4 for the froglet & adult frog. To complete the stages of metamorphosis (transformation) explain the word and play a pronounciation game.

	PLANNING LINKS TO National curriculum & Aistear (Facilitator's Notes)
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R PRINCI	IDENTITY & BELONGING
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GES 4 - 6	EXPLORING & THINKING
A	
- LINKS	SEE SEE
SUBJECT	STEM
GES 7 - 12 KEY S	ART ART
	SPHE SPHE
4	
OMPTS, FURTHER INFO	FOLLOW THE <u>LIFE CYCLE</u> OF A FROG
	PRINTABLE <u>FLASH CARDS</u> . BUT YOU CAN
	VERSIONS.
LUES, PR	<u>UNDERSTANDING METAMORPHOSIS</u> AS THE "Develop - Grow - Change" PROCESS
5	

# WETLAND

# bog-in-a-bottle

Materials

2 plastic water bottles with one side sliced open 2 collection cups Peaty soil (or compost from a garden centre) Sphagnum Moss Water (to represent rain)

# Activity

Ask everyone to name one kind of wetland close to where they live. Prompt the group to mention a wide range - rivers, ponds, bogs, fens, peatlands, marshes, lakes.

Discuss the differences - flowing and still water. Encourage descriptions through smell and the textures underfoot.

Now present your 2 bog-in-a-bottle demos. Let them touch the soil and moss in each. What do they think of moss?

Get everyone to carefully pour some water into each bottle to drench each bog - and watch the spouts carefully! Whats the difference in the water colour and quantity?

### NATIONA **AGES 4 - 6 AISTEAR PRINCIPLES** WELL BEIN **IDENTITY** COMMUN EXPLORIN AGES 7 - 12 KEY SUBJECT LINKS SEE STEM ART SPHE **GLUES, PROMPTS, FURTHER INFO** DEMONSTRATIO MORE ABOUT S **BUILDER** AN INTERESTIN WETLANDS TO **AROUND IRELA**

<b>PLANNING LINKS TO</b>	
L CURRICULUM & AISTEAR	
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PHAGNUM MOSS – THE BOG	
G <u>RESOURCE</u> FOR FALK ABOUT AND VISIT ND	

# GRASSLAND



Activity

Magnifying glasses Transparent jar / box Scrap of cloth & elastic band Black paper Soil, sand, dead leaves

This activity encourages children to explore the fascinating world beneath the grass. So, use a grassy area that is fallow, or an old plant pot that is still full of old soil.



After the rain, carefully dig around looking for worms - using hands rather than spades. Examine the worms under a magnifying glass & discuss using prompts.



Feel, smell and describe soil, sand, leaves. In a large jar children create layers of the soil and sand with a top layer of leaves and a few veggie peels. Add worms. Cover with fabric. Wrap the jar in black paper and explain that this is to simulate the darkness of underground.

Keep in a cool dark place and make observations daily. Keep the soil moist. Release after few days.

	PLANNING LINKS TO National curriculum & Aistear
AGES 4 - 6 AISTEAR PRINCIPLES	<ul> <li>WELL BEING</li> <li>IDENTITY &amp; BELONGING</li> <li>COMMUNCATING</li> <li>EXPLORING &amp; THINKING</li> </ul>
AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	WHAT CREATURES LIVE BENEATH THE GRASS? HOW DO WORMS MOVE & DO THEIR BODIES HAVE PARTS? WHAT DO WORMS EAT / DECOMPOSE? UNDERSTANDING THE CONTEXT

#### **BACK AT SCHOOL**

\_\_\_\_\_\_

# GRASSLAND



Paper flowers (different colours)
Drawing paper & crayons
Masking tape
Sweets

Scatter paper flowers around the class, each with a sweet lightly stuck with a loop of tape, to the centre representing pollen.

Assign each child a pollinator role (bee, butterfly, bird, bat) with a corresponding label (masking tape) - and ask them to flutter, hover, fly, buzz around looking for flowers.

The task is to pick sweets from flowers and stick them onto another flower of the same colour.



After all the sweets have been paired, gather in a circle to share the sweets and discuss the importance of pollinators and how transferring pollen is essential for plant reproduction and the formation of fruits and seeds!

Draw your favourite pollinators.



<b>PLANNING LINKS TO</b>	
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NG	
& BELONGING	
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AS A HEALTHIER OPTION TO	
TORS VISIT FLOWERS?	
T <u>ERS</u> ABOUT THE NDLY FLOWERS, ECIES & MORE!	



## fisherman's calendar

## herbarium

## seed-travel

## whose grassland?

GRASSLAND

#### grass weaving

### floating forms



Spend some time noticing the different types of seaweed attached to the rocks. Discuss the different leaf shapes, structures, colours, and textures.

Collect three distinctly different coloured seaweeds and question whether the browns and reds might grow in deeper areas.

[The darker red and brown seaweeds contain extra pigments that allow them to capture light in deeper waters].

When they are soaked in very hot water, the red or brown pigments dissolve and they will turn bright green!

Snip hand-fulls of serrated wrack and place it in a few bowls - drench them with the boiling water and mix well with hands as they cool.

Enjoy the slime - fill a test tube to take home!

MARINE

Seaweed

Slime

Activity

TH	PLAN YOUR LINKS TO E NATIONAL CURRICULUM & Aistear
AGES 4 - 6 AISTEAR PRINCIPLES	<ul> <li>WELL BEING</li> <li>IDENTITY &amp; BELONGING</li> <li>COMMUNCATING</li> <li>EXPLORING &amp; THINKING</li> </ul>
AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	IDENTIFY LOCAL SEAWEEDS? HOW DO SEAWEEDS HOLD ON TO ROCKS? UNDERSTAND ZONATION LOCAL RESOURCES

Activity



Notebooks Pencils Pre-made calendar templates Markers / crayons Contact for a local fisherman

Head down to the harbour and gather them in a safe observation area

Observe and document the different types of gear, nets, lines, traps, reels, and general activity at the harbour.



Arrange a Talk: Before the visit, arrange with local fishermen to speak with the students. Guide the students to ask questions such as: What types of fish do you catch in different seasons? What kind of gear and boats do you use for different types of fish? How does the weather affect fishing? Have some fish stopped coming here?



Distribute calendar templates with the months of the year. Have students fill in the calendar with the information they learned.



They can draw pictures or write notes about what fish are caught in each season and what gear is used.

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
<b>CLUES, PROMPTS, FURTHER INFO</b>	LEARN ABOUT LOCAL ANGLING SPECIES. COMMERCIAL FISHING CALENDAR REFERENCE TALK ABOUT HERITAGE FISHERIES IN IRELAND

echo-location



Activity

Create a large circle in the sand to define the play area

Assign Roles: Blindfold 1-2 students who will be marine hunters (e.g., dolphins / toothed whales). Then and designate a few others as fish. The remaining students act as marine pollution sources (e.g., motorboats, ships, etc). Stick on role labels.

Every time the hunters call "fish", the fish echo "fish" and using the calls the hunters try to catch the fish - using their voices as a guide. Continue until at least 1 fish is caught.

Introduce Noise: Pollution sources start clapping and running about within the circle to create distractions - while the hunters and fish continue calling out.



After the game, discuss how echolocation works, which animals use it, and how noise pollution affects marine life.

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	SAMPLE WORKSHEET FURTHER READING ABOUR NAVIGATION USING SOUND WAVES EXPLORE <u>SPECIES THAT</u> SHARE OUR WATERS



Activity

World map
 "real map of Ireland"
 Paper
 Pencils
 Binoculars

Set the scene with your group on a beach, rocky coastline, or harbour - explain the concept of bathymetry; the study of changing depths and contours underwater. Use landmarks on the visible coastline to imagine the shape of the sea floor as it gets deeper- look out to sea, how deep does it get? Create imagined underwater drawings of this, sparking imagination about what lies beneath and where.

Walk your coastal stretch collecting items that have washed up on the beach driftwood, plastic, glass, nets, or seaweed. Examine the finds and discuss where these items might have come from and what marine life, like barnacles or algae, might have hitched a ride on them! Arrange found items on the map.

Look across from your shore and question what lies beyond - where is the closest and furthest land pointing out in a straight line.

Question how fish and ships move through and across the ocean(s), crossing boundaries freely, since the same ocean touches many landmasses, countries, and cultures - emphasise how the Ocean is a shared resource.

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	PRINT OUT THE REAL MAP OF IRELAND GET A SENSE OF <u>SHIPPING</u> ROUTES CONTEMPLATE THE WORLD OF FLOATSAM

# INTERTIDAL

Activity

# scavenger hunt

- Materials Stavanger hunt sheets (laminate for reuse)
  - Magnifying glasses (1/group)
  - Collection jars (1/group) Mini white board & pen

Define the "lab area". Use a tarp or mat to lay out all the materials and divide your group into teams of 3 and distribute tools.

Brief the teams of your mission and rules as explorers of the shore. What do wet / green rocks indicate? Why can't you abandon your team on an expedition? Limits and staying within line of sight, etc. How do tally marks work.

Assign each team to a region / area on the rocks and allow for child-led exploration - remind them that you are there to help identify things and that they shouldn't touch without checking with you. Move between the groups to bring them back to the task every so often.

Reconvene at the lab to discuss finds, look in jars (before releasing everything) and do a group tally of all your data sheets, on the white board.

#### IN THE FIELD

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IS, FURTHER INFO	SCAVENGER HUNT <u>SHEET</u> <u>SAMPLE</u> (WRITTEN) SCAVENGER HUNT <u>SHEET</u>
ROMPT	<u>SAMPLE</u> (VISUAL)
CLUES, P	IDENTIFY <u>LIFE ON THE</u> <u>SHORE POSTERS</u>

# INTERTIDAL

Activity

# Pebble Panorama

Collection trays / bowls
Pebble Spotters Guide
Hard card paper & pencils
PVA glue

Explain the intertidal habitat and the importance of collecting and documenting pebbles - how rock can tell us stories of deep time.

Distribute trays and allow extended self-led time for collecting - they will naturally be interested in the variations in textures & colours.

Bring all the trays together and get them to match & cluster pebbles with other children's collections - sort, discuss and identify! - read them excerpts from the Spotters Guide.

Start arranging the pebbles in bands based on the clusters made while sorting. Encourage them to explain their sorting logic. They can move across shades from light to dark, or size, or patterns, textures, shape, etc.

Shuffle and reshape - allow students to move pebbles between circles, discussing new groupings. This process is the root of understanding taxonomy and making natural connections.

Conclude with a pebble art session.

#### **IN THE FIELD**

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PEBBLE ART <u>IDEAS</u>

**CLUES, PROMPTS, FURTHER INFO** 

PEBBLE SPOTTERS GUIDE



Collection trays / bowls Sea Shells of Ireland Guide Pencils

Materials Blank postcards

Explain the intertidal habitat and the importance of leaving empty shells on the beach as they are a part of the system and offer home, shelter, and substrate to many other life forms.

Distribute trays and allow extended time for collecting - they will automatically be attracted to the variations in shell types, broken pieces, spirals, glossy mother-of-pearl, textures & colours.

Match & cluster shells with each others' collections - sort, discuss and identify! Start arranging the shells in concentric circles based on the clusters made while sorting. Encourage them to explain their sorting logic. Do the spirals go in one circle or get further divided based on colour, size, or pointedness?

Shuffle and reorganise. Allow students to move shells between circles, discussing new groupings. This process is the root of understanding taxonomy and making natural connections. Introduce the word 'Mollusc' and explain how some have 1, 2, or even 8 shell parts!

Everyone selects their favourite shell and creates a drawing of it as a postcard - name it if possible.

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Activity sheets Pencils Crayons Magnifying sheets

Mission Briefing: Explain the intertidal habitat, what is zonation, why some creatures choose to live in specific niches, e.g., on rocks, in crevices, burrowed in sand- or why they have so many legs, where their eyes are positioned, soft or hard bodies, etc. Every form has a purpose and each of these creatures has a superpower to help it survive in a constantly changing environment!

Send the young scientists on an adventure to observe and discover each creature's superpowers, like moisture retention (snails); camouflage (crabs, slugs); burrowing (clams); retracting (barnacles & anemone).

Gather at different locations to point out and share findings on how these superpowers help creatures survive.

Task young scientists with creating their own ultimate intertidal organism with unique superpowers in a place that changes from underwater to dry every 6 hours!Have them draw or describe their new organism, detailing its special abilities and adaptations.

Hero Showcase: Present their creations, explaining the organism's name, superpowers, and what makes it a true intertidal hero.

#### **IN THE FIELD**

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#### SAMPLE ACTIVITY SHEET

**CLUES, PROMPTS, FURTHER INFO** 

INTERTIDAL ADAPTATIONS & ZONES

ACTIVITY EXTENSION IDEAS

# WETLAND

Activity

framing observations

# Watercolour / rag paper Wooden frames or hula hoops Pencils Crayons

Explain the wetland habitat, emphasising the importance of observing ecosystems from different perspectives to understand their diversity and layers.

Have children's work in pairs, encouraging teamwork and collaborative learning. Provide each pair with a quadrat (a bound frame) to focus on a small area. Explain how this helps scientists in detailed counting and identification of all organisms in a place. Have them make drawings or notes of everything they see within the quadrat. Encourage them to collect some soil from their quadrat to stain their observation paper.

Next, guide students to identify a larger, appealing view of the wetland. From an artistic point of view, the frame acts as a viewfinder, helping them choose a composition that showcases the wetland's diversity, colors, and gradients.

Each pair can now illustrate this wider frame, focusing on the overall landscape and how different elements interact. This helps appreciate the wetland both in detail and as a whole.

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	TIPS FOR USING VIEWFINDERS PRINT THE <u>"ON THE</u> WETLANDS" POSTER WHAT <u>TYPE OF WETLAND</u> CAN YOU ACCESS



Explain the wetland habitat and the types of flora you expect to find based on the wetland you have chosen.

Practice the skill of slow walking, where a vegetation collection must be made every 5 steps - looking around closely and deciding on where you are headed and why.

Guide children to collect a variety of leaves from riparian trees, grasses, mosses, and shrubs. Lay out your collection on the ground in the same order they were collected.

Provide paper and crayons - first draw the path you walked with a note on the total number of steps taken! At the point on your path where the collection was made - create a leaf rub of the collected item.

Demonstrating how to use the side of the crayon for rubbing - placing leaves under paper and rub crayons over the top to reveal venation patterns.



Activity

Discuss the different shapes, colours and patterns observed, noting differences between species.

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	WERE TREES DISTRIBUTED OR CLUSTERED IN SOME WAY? DID WATER PLAY A ROLE ? HOW TO DESCRIBE <u>LEAF</u> <u>SHAPES</u>



Activity

Explain that mosses are simple, rootless plants that absorb water through their leaves, thriving in damp, shaded areas like wetlands. Highlight Ireland's abundance of mosses.

Guide students to select, collect samples, and identify 3 or 4 different types of moss.Use magnifying glasses to closely observe the mosses' tiny leaves and structures.

Use droppers to wet the mosses slowly, one at a time and observe how they absorb water, noting which moss absorbs the most.

Discuss where the water goes and how the mosses swell, unfurl, and flourish when hydrated - you can actually see them move as they absorb the water, if you look closely.



Highlight the scientific observations of moss, and how we can start looking for moss everywhere(walls, docks, driveways, gardens and wetlands - take time to appreciate the artistic beauty of moss transformation from dry to wet.

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AGES 4 - 6 AISTEAR PRINCIPLES	<ul> <li>WELL BEING</li> <li>IDENTITY &amp; BELONGING</li> <li>COMMUNCATING</li> <li>EXPLORING &amp; THINKING</li> </ul>
AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	MORE ON THIS <u>FASCINATING</u> <u>MINIATURE WORLD</u> JOIN THE <u>MOSS HUNT</u> ASK THEM WHERE THEY HAVE SEEN MOSS BEFORE & WHAT THEY ASSOCIATE IT TO?

# WETLAND

# floating forms



Activity

**Yet up** Light twine Plastic or metal bowls Plastic or metal lid

This activity encourages close observation and broad ecological understanding, linking form and function in nature. Explain the unique floating adaptations of wetland plants like lily pads and wetland insects like water skaters. Observe the similarities and differences in their shape.



Guide children to collect various natural objects (leaves, twigs, bark, stones, etc.) from the wetland site.



Observe and discuss the shapes, weights and materials of each collected object. And guess which ones are likely to float!



Test the flotation of collected objects in shallow water, noting which shapes and materials float best. Explain in simple terms why certain objects float, using examples like lily pads and water skaters.



Discuss how these observations help us understand the adaptations of wetland plants and animals.

#### **IN THE FIELD**

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GET SOME <u>MORE IDEAS</u> AND EXPLAINATIONS

**CLUES, PROMPTS** 

# GRASSLAND

Herbarium

Activity

Old newspaper / baking sheets
 Sheets of cardboard / ply
 Clamps / rocks
 Scrap book paper
 PVA glue

Explain the importance of preserving plants and comparing plant shapes - by showing how plants differ from one other - particularly grasses, shrubs, and flowers found in grasslands

Guide students on how to carefully collect plant specimens without uprooting them. Discuss criteria for selecting which plants to collect.

Demonstrate the flower/grass pressing technique using simple materials like paper and heavy books or a clamp set up. Explain that the pressing process takes about a week.

After pressing, show how to transfer the flattened specimens onto paper.

Teach children how to label the parts of the plant/flower, noting its name, date of collection, and location.

Discuss the scientific value of creating a herbarium and the artistic aspect of preserving plant beauty. Make each press into a card!

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AGES 7 - 12 KEY SUBJECT LINKS	<ul> <li>SEE</li> <li>STEM</li> <li>ART</li> <li>SPHE</li> </ul>
CLUES, PROMPTS, FURTHER INFO	HOW TO MAKE A HERBARIUM PRESS ARTISTIC IDEAS HOW TO LABEL <u>PART OF A</u> PLANT

# GRASSLAND



Seeds Furry fabric Basin of water PVA glue Chart or board to cluster and stick seeds

Activity

Take a walk in a wild space looking for and gathering seeds. You can also ask children to bring their own seed collections to class

Discuss how seeds travel using wind, water, animals, and birds. Show examples of seeds with wings, hooks, and other unique shapes.

Touch, feel and examine the seeds' shapes and features. Discuss how each might travel, making up stories of where they came from.

Have the children test how far different seeds can travel by tossing them or placing them in water or sticking them to different surfaces.



Compare results and discuss which seed features helped them travel the furthest and how.



Create a mural of all collected seeds, in clusters based on their travel mechanisms, with notes and stories written beside each cluster.

#### **IN THE FIELD**

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AGES 7 - 12 KEY SUBJECT LINKS	SEE STEM ART SPHE

#### BACKGROUND READING

**CLUES, PROMPTS, FURTHER INFO** 

Ask questions about shape and use adjective and similes to describe form and function; wings like a \_\_\_\_, sail like a \_\_\_\_, spikes like a \_\_\_\_.



PLAN YOUR LINKS TO The National Curriculum & Aistear				
AGES 4 - 6 AISTEAR PRINCIPLES		WELL BEING IDENTITY & BELONGING COMMUNCATING EXPLORING & THINKING		
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AGES 7 - 12 KEY SUBJECT LINKS		SEE STEM ART SPHE		
CLUES, PROMPTS, FURTHER INFO				



# LINKS AND RESOURCES

Heritage in Schools

National Biodiversity Data Centre

**Explore Your Shore** 

**Explorers IE** 

Irish Wildlife Trust

Irish Whale & Dolphin Group

Wetland Survey Ireland

David Sobel on Place Based Learning

**Burren Beo Trust** 

ABC school supplies

School Tube

John Muir Laws

Field microscopes

SEA school studios & labs





# www.puffinrockhabitats.com