UP
PROJECTS

BODIES OF WATER

Learning Resource

Image: courtesy of the Haigh Community Ambassadors

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INTRODUCTION

The *Bodies of Water Learning Resource* is an educational tool that has been created by UP Projects for children aged 7–11 (Key Stage 2) to help explore themes around water collection, preservation, and distribution. The resource accompanies *Bodies of Water*, an ambitious multi-sited public art project by artist Anne Duk Hee Jordan. Inspired by the themes of Jordan's artworks, the resource includes creative activities aimed at building awareness of our human relationship to nature and water's environmental importance. The resource also promotes the significance of sustainable water management through engaging, hands-on learning, ideal for Key Stage 2 pupils, while supporting educators with informative content to encourage artistic exploration, helping children understand the vital role of water in our daily lives.

To minimise the impact on the environment, this resource has been designed to be viewed and accessed digitally. Specific colours, fonts and layouts have been utilised, along with lower-resolution images. For higher-resolution images, please visit www.upprojects.com/projects/bodies-of-water.

We encourage all who use the resource to avoid unnecessary printing and reduce the amount of paper used and wasted. We understand that a digital format might not be preferable for everyone, and if you decide to print the resource, we recommend printing in black and white only. Further ways to reduce the amount of ink include using eco-friendly printing modes on your printer.

The *Bodies of Water Learning Resource* has been produced and commissioned by UP Projects as part of *Bodies of Water*, with content and activities devised by multimedia artist and arts educator, Anna FC Smith.

ABOUT BODIES OF WATER

Bodies of Water is a public art project by artist Anne Duk Hee Jordan, curated and produced by leading public art organisation UP Projects. The artworks are created specifically for two locations in England: A la Ronde in Exmouth, East Devon, and Haigh Hall in Wigan, Greater Manchester.

Bodies of Water is Jordan's first UK public art commission, which sees the artist confronting the politics of water through an ecological lens. *Bodies of Water* responds to the urgent environmental needs, within the UK and internationally, to manage water more effectively. The name 'Bodies of Water' comes from a book by Canadian cultural historian, Astrida Neimanis called *Bodies of Water: Posthuman Feminist Phenomenology*. The book focusses on the variety of relationships humans have with water, oceans, and aquatic life and asks us to think about how we live with water and as water, prompting us to feel empathy and take care of the earth.

Jordan knows that water moves in cycles through people, animals, and nature. For this project, they're making two sculptures that will collect, harvest and filter rainwater. The sculptures are made from eco-friendly materials and help the environment by becoming part of the natural eco-system around them. Jordan has always been interested in nature and the ocean. In the past, the artist has worked with scientists like marine biologists and ecologists and has gone diving to learn more about life underwater. For more information, please visit www.bodiesofwater.site.

ABOUT ANNE DUK HEE JORDAN

Anne Duk Hee Jordan (they/them) was born in Korea in 1978 and lives and works in Berlin, Germany. With previous careers spanning freediving and occupational therapy, they pursued a BA at the Weissensee Kunsthochschule in Berlin in 2009, then completed their MA at Olafur Eliasson's Institute for Spatial Experiments in 2012. Transience, transformation, and ecology are central themes in their work. Their practice includes drawings, hand-built robots, edible landscapes, sculpture, public art, film and sound.

Their sculptures are intended to draw the viewer in and open a dialogue between the natural world, philosophy and art. They open up questions and encourage us to change our perspective, to think about how humans are just one part of a much greater 'eco-system' or community of living organisms (like animals, plants and bugs).

www.dukhee.de

Image credit: Portrait of Anne Duk Hee Jordan. Installation view of I Will Always Weather With You, 2023 at The Bass, Miami Beach. Photo: Charles Roussel.

Previous Projects by Anne Duk Hee Jordan

Anne Duk Hee Jordan, I will always weather with you, 2023, installation view, The Bass, Miami Beach, USA, photography by Zaire Aranguren, courtesy of The Bass, Miami Beach.

I will always weather you was a large-scale multisensory exhibition at The Bass, an art museum in Miami Beach, USA in 2023-24. The exhibition used technology to explore how our life on earth can continue against the increasing challenges of climate change. The artwork consisted of three zones (or atmospheres) that referred to the many characteristics of the weather including land, water and air. Small "robotic critters" sang, danced and blew gusts of wind, sound and fog at the audience. Visitors could "step into" the weather with projections of weather data across the space, and be part of an experience that demonstrated the power of weather.

Making Kin was a large-scale exhibition shown across different locations in Germany and Belgium between 2020-2023. The work challenged the viewer to think about how we want to live in the future, and how we can connect and co-exist with different types of biodiversity. Through sculpture and videos, the artwork explored the hybrid network between humans and our environment, and presented future scenarios of our relationship with nature.

Anne Duk Hee Jordan, Making Kin, 2020-2023, installation view, The Roots of Our Hands Deep as Revolt: Entangled Colonialities of the Green, Kunstraum Kreuzberg/Bethanien, photo: Eric Tschernow.

ABOUT THE BODIES OF WATER SCULPTURES

I travelled 66 million years to be with you and then you came

Photo: Simon Tutty

The first part of *Bodies of Water* is *I travelled 66 million years to be with you and then you came*, a temporary sculpture, designed specifically for the meadow of A la Ronde, a National Trust property in Exmouth. It features a cluster of large-scale barnacles on a base of locally sourced, slate boulders embedded with different types of fossils.

Barnacles can demonstrate the water quality of seas and river estuaries. They symbolise resilience and adaptability for their ability to cling tightly to rocks despite the constant flow of waves. The barnacles were made from **Roman concrete** mixed with biochar which was created from burning plant cuttings from the gardens at A la Ronde.

Roman concrete is a great example of Roman engineering and construction to build a variety of structures, including the Pantheon in Rome!

Biochar is an organic version of activated charcoal which is often used to provide water filtration in water bottles or fridge water filters, or much larger scale water treatment facilities. The biochar was made by Flete Field Lab, a Devon-based collective developing nature-based remedies for soil and water issues. In addition to the biochar, the concrete is mixed with shells, the mineral zeolite which serves as a water purifying agent, alongside iron oxide which is used in wastewater treatment to remove heavy metals.

To make biochar, you have to heat any organic matter under very high temperatures of around 300-1000 degrees Celsius!

The sculpture symbolises the power of natural materials to filter and purify water, as well as encourages birds and insects to use the water collected and filtered by the barnacle forms. A la Ronde was built in 1796 and has a unique history. The building has influenced the design of the sculpture which references the Shell Gallery and Jurassic Coast fossils.

ABOUT THE BODIES OF WATER SCULPTURES

Snail on me

Image: courtesy of Plincke Landscape

Snail on me is a site-specific installation in the walled garden at Haigh Hall, situated in the largest ancient woodland in Greater Manchester. It is designed to collect and filter rainwater. The installation will play a part in water management in the walled garden, as well as provide vital wetland habitats for birds and insects.

A chimera is a mythological creature made up of multiple animal parts.

The sculpture is fabricated in steel and steel mesh and takes the form of a **chimera** that includes slugs and snails, and snakes. On top, the main creature is a fantastical “Popo Goddess”, made up of a chicken and a crab, who represents the goddess and protector of all bodies of water. The snakes refer to the mythology of Medusa, who the artist reveres as another protector of women and the sea.

Flowing down from the chimera into a newly created wildlife pond are multiple rain chains that direct rainwater into the pond. The pond is surrounded by a natural **stumpery** and carefully selected indigenous plants that create habitats for insects and amphibians, such as newts and frogs.

A stumpery is a mini forest or a garden made from tree stumps and logs. You can arrange the stumps and logs to create interesting shapes, and then plant ferns and other shade-loving plants around them.

Rain chains are decorative chains made of metal links or cups that are connected together. They help guide rainwater from your gutters down to the ground.

The steel mesh attracts moisture in the air similar to the process of fog harvesting. The mesh attracts mist or fog droplets, which then condense into water. The water particles are channelled down the **rain chains** into the pond.

WATER CHARACTERS

Jordan's sculptures include different animals and mythological characters...let's meet them all now!

BARNACLES

Barnacles are living sticky crustaceans that are often found stuck to the underside of boats, on sea life and each other. They stick to these surfaces firmly by secreting a fast-curing cement, which is one of the most powerful natural glues on this planet. Barnacles often serve as bioindicators of water quality in coastal ecosystems and are very resilient for their ability to cling tight to sea surfaces despite the constant flow of waves.

SLATE

Slate stone is regarded as a metamorphic rock deriving from a mixture of clay and limestone. Its particular quality is its ability to divide easily into thin, light and impermeable slabs. This is due to the deposit of materials emitted by volcanic explosions, which have followed long and winding paths through the air before landing on the rocks or sea. It is a soft stone with very strong characteristics - it will not bend, is resistant to fire and other elements and it is waterproof. Natural slate is commonly used in building for its beauty and durable nature, but its use goes back to ancient civilisations, with the Mayan civilisation modelling slate to make tall vertical monuments.

SNAKES

The Greek myth of Medusa has been misunderstood and mistold over thousands of years. The story describes her as a beautiful evil monster with hair of snakes, which turned any man who faced her to stone. In truth, Medusa was a woman wronged by the gods. Her story begins as a priestess to the goddess of wisdom, Athena. However, she was attacked by the god of the sea, Poseidon. In an angry revenge on Medusa, Athena cursed her to become the monster we know today. Her life ends when her head is taken by Perseus, who is seen as a hero. This unfair punishment of the gods was inflicted on poor Medusa. Instead of being seen as a horrible monster, she should be celebrated as a symbol of the protection of women and the sea. With the regenerative power of snakes who shed their skin, she provides wisdom to generations of "angry women".

POPO

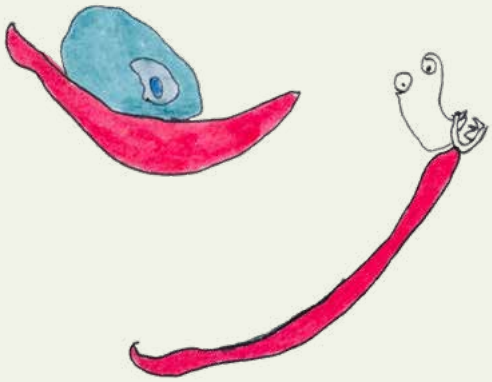
Popo is a small chimera comprising a chicken and a crab. This little creature is the goddess and protector of all bodies of water. Popo refers to the goddess of the winds, ‘Feng-po-po’ in Chinese mythology. She symbolises freedom through the elements of air, water, storms, rain and moisture. Her ability to cross boundaries effortlessly makes her a resilient character to explore the multiple bodies of water on our planet. According to myth, her change in mood can affect rainfall.

FOSSIL

The origins of the fossils in Jordan’s artwork include tracing history back to millions of years ago from places such as Dorset, Peterborough, Bedfordshire and Somerset. These ancient fossils recall the history of the Jurassic Coast, which is 95 miles long on the South Coast of the UK from Studland Bay in Dorset to Exmouth in East Devon. The rock formations of the Jurassic Coast span 185 million years of the earth’s history. The many different fossils found in this area provide evidence of the diversity of life during the Mesozoic times (the age of dinosaurs).

SNAIL & SLUG

Snails and slugs are gastropods and have both male and female reproductive organs. The gastropods have telepathic abilities and can identify their mate initially through smell to ensure they are mating with the same species. The slow-moving nature of snails and slugs teaches us about the importance of taking things slow. From Aesop’s Fables from Greek mythology, the tortoise teaches us that “slow and steady wins the race”. The slow resilience of these gastropods in their motion and reproduction can teach us about the care around slow approaches and what we can learn from communicating between species.



RAINDROPS

Bodies of water circulate again and again through the same raindrops of water. Raindrops are existential creatures since their existence and life cycle is constantly renewed across time and geographies. It can take millions or trillions of raindrops to make a cloud. The cloud that stores our data across server centres internationally needs lots of water in order to function. With the amount of data that we use globally, these servers get very warm and large amounts of water are pumped through pipes to keep the computer cool. The water supply that is being used to keep these servers cool is drawing from and affecting people and nature’s access to the cycle of raindrops. As we increasingly use data, we can negatively impact access to bodies of water.

NATIONAL CURRICULUM

Jordan wants these sculptures to be useful, not just beautiful. They will collect and filter rainwater and harvest moisture from the air. The artist believes that in the climate emergency, we all need to realise how connected we are to the planet, and that this connection can help us feel more responsible and ready to make a difference.

This learning guide is designed to be used as a creative educational tool designed for children aged 7–11 (Key Stage 2), encouraging engagement in artistic activities that highlight the importance of water in our daily lives. Inspired by the themes of Jordan's artworks, this resource has been devised to offer introductory activities for students to learn about water sustainability and sustainable water management, and develop an awareness about the critical role of water in the environment. The content complements the following Key Stage 2 Programmes of Study:

Art and Design:

- Improve their mastery of art & design techniques including drawing, painting and sculpture; learn about great artists and designers.

English:

- Reading and writing.

Design and Technology:

- Design: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups; generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

- Make: select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

- Evaluate: investigate and analyse a range of existing products; evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.

- Technical knowledge: apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Geography:

- Human and physical geography: including climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle; types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water.

- Locational knowledge: name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time.

IMPORTANCE OF WATER

We all have a relationship with water and the life it creates. Thinking about water helps us think about how interconnected we all are.

Water is essential to life on Earth

Plants, animals, and people all need water to grow and stay healthy. Water helps control Earth's climate by moving heat and making weather. Water stores heat from the sun, affecting the Earth's temperature. Oceans, rivers, and even tiny drops in the air help control the climate. Rain and snow cool the Earth. Warm ocean currents carry heat around the world, and tiny water drops in the air trap warmth like a blanket.

The average person in the UK uses 150 litres of water a day

The water cycle links the whole planet together

Water continuously moves around the Earth and atmosphere in a big circle called the water cycle. Water from oceans, lakes, and rivers warms up and turns into gas (evaporation). It rises, cools, and forms clouds (condensation). Then it falls as rain or snow (precipitation). That water flows back into rivers and oceans (collection). This cycle happens everywhere, linking every part of the planet. We all share the same water as it travels the whole world, connecting us all with every living thing.

Only 1% of the earth's water is drinkable!

There is limited new water

Most water is recycled in the water cycle and very little new water is made on the planet. Small amounts are made when burning fossil fuel and…

71% of the earth is covered by water

...We make water with our bodies every day

The human body makes about half a litre of new water every day. Every time we breathe, eat or use energy, we're making a small amount of water inside our body, and every living thing is doing the same. This process is called cell respiration: inside our cells, oxygen from the air mixes with sugar (glucose) from the food we eat. This reaction releases energy to power our body, and as a by-product, it also produces water (H_2O) and carbon dioxide (CO_2). The chemical equation is glucose + oxygen = energy + carbon dioxide + water! This water goes around our body, hydrating our blood and we breathe it out (and it also comes out in our sweat, pee and poo!)

Up to 60% of the human body is water

DID YOU KNOW: The ideal shower should take less than 4 minutes? Make a challenge with your family and see who can shower faster than your favourite song!

WATER AND CLIMATE CHANGE

It is wonderful to learn about and feel confident in your natural world. Together we can all play our part in looking after our water both outside and at home. Water is a big part of climate change, with too much water in some places, not enough in others, and water pollution causing problems for people, animals, and the planet.

But the good news is people all over the world are coming up with clever solutions, and you can help too by learning, sharing, and saving water. When we know the issues, people can work together to find solutions.

At UP Projects, we are aware that speaking to children and young people about issues surrounding the climate can create eco-anxiety. This can include feeling scared, worried or helpless about the future of the planet and unsure how to help. To assist with talking to children about eco-anxiety, we have included a list of selected resources to help with managing the important conversation around climate education and coping with anxiety. All of these resources are listed on page 32.

The key advice is to:

- Listen to and acknowledge children's feelings and concerns;
- Find out what they know or what they have learned about;
- Be honest, use science-based and age-appropriate information including information about solutions;
- Reassure children they are not alone or solely responsible and that scientists, communities and activists are working together to combat climate change;
- Involve children in positive actions like litter picking and tree planting;
- Foster hope and resilience through positive climate stories and innovations, through experiences in nature and being creative.

WATER AND CLIMATE CHANGE

Some of the climate problems involving water include:

Flooding

- Heavy rain from storms can cause sudden floods.
- Melting ice at the North and South Poles is making sea levels rise.
- Salt water can mix with freshwater, making it unsafe to drink.
- Drains can overflow during storms, letting dirty sewage into rivers.
- Fast water can wash away soil, trees, and even land.
- Floods can damage farms, meaning less food is grown.

Pollution

- Dangerous chemicals from factories and old mines can poison rivers, animals, and our drinking water.
- Fertilisers from farms wash into rivers, causing green slime (algae) to grow. This uses up oxygen in the water, which can kill fish.
- Dirty sewage getting into water can spread diseases.
- Some farm and human waste has hormones that affect how animals grow and live.
- Plastic rubbish and tiny microplastics can hurt animals and stay in the water for a long time.

Water shortages & drought across the world

- Hot, dry weather lasts longer in many places, making droughts more common.
- Melting ice can change sea currents and affect the weather, making it too hot or too cold!
- Dry, cracked earth can make flooding worse when rain finally comes.
- Wildfires during dry weather burn plants that help stop floods and remove carbon from the air.
- Underground water stores (called aquifers) don't fill up without rain.
- Less water means fewer crops and drinking water.
- Rivers can dry up, which harms invertebrates and fish, and breaks the food chain.
- In many places, rain is the only way to get fresh water - without it, people run out.

DID YOU KNOW: Cold water weighs more than hot water?

WAYS YOU CAN HELP

Even little actions can make a big difference - here are some suggestions of different ways you can help:

1 Don't waste water

Clean water is precious. Take shorter showers and turn off the tap while brushing your teeth. Ask an adult to fix any leaky taps or toilets at home.

2 Use a bowl or the plug

When washing up or cleaning vegetables or fruits, use a washing-up bowl or plug the sink, don't let the tap run.

3 Only flush the 3 P's

The toilet is not a bin! Only flush pee, poo, and toilet paper. Wipes, cotton buds and other rubbish can clog pipes and end up in rivers and oceans.

4 Use a reusable water bottle

Plastic bottles often end up in the sea. Use a refillable bottle instead.

5 Pick up litter

Always put rubbish in the right bin, especially near rivers, lakes, and beaches. Litter can easily make its way into the water and hurt animals.

6 Scrape your plate

Before washing dishes, scrape any leftover food and grease into the food bin. Grease can block drains and pollute the water.

7 Plant trees & flowers

Plants help stop rainwater from washing pollution into rivers, and they give bees, birds, and insects a home.

8 Share what you know

The more people who care, the more we can help! Talk to your friends and family about saving water and protecting nature.

DID YOU KNOW:
Every single day in the UK, over 3 billion litres of perfectly good clean water is being wasted. That's enough to fill 1,200 Olympic sized swimming pools!

Session1

SNAIL & SLUG-SLOW DOWN

Session 1 - Activity 1: A Snail Tale

An animal group that features in Jordan's Haigh Hall sculpture is slugs and snails. These fascinating creatures are called gastropods. They have both male and female reproductive parts, which means they can reproduce in their own unique way. Gastropods have telepathic abilities and identify their mate initially through smell. They reproduce by laying eggs.

The slow-moving nature of snails and slugs teaches us about the importance of slowing down. The slow resilience of these gastropods in their motion and reproduction can teach humanity about taking careful, slow approaches and what we can learn from communicating between species. Freshwater snails help clean ecosystems by feeding on algae and different types of waste. Like barnacles, they are also indicators of clean water!

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture
- Design and Technology: Design; Make
- English: Reading and writing

Materials:

- Recycled cardboard
- Recycled packaging (to add decoration)
- Masking tape
- Scissors
- Glue Stick
- Paper, pen / pencil (extension)

Activity

Let's become snails: Create a 3D snail using recycled materials. Assemble a cardboard snail and decorate your shell using collage.

1. Cut out the body, shell and eye stalks (antennae) using the templates.
2. Make slice holes along the body for the shell and the eyes to slot in later.
3. Cut the base tab on the shell in half so that it can be split and taped under when attached to body.
4. Collage your shell on both sides using ripped and cut up found materials. Think about the spiral shape of a snail shell as you collage.
5. Slide the tab on the shell through the hole in the snail body. On the underside, split the base tab you cut earlier, and tape on either side of the slit.
6. Slide the eyes through the eye slots and tape on the underside too.

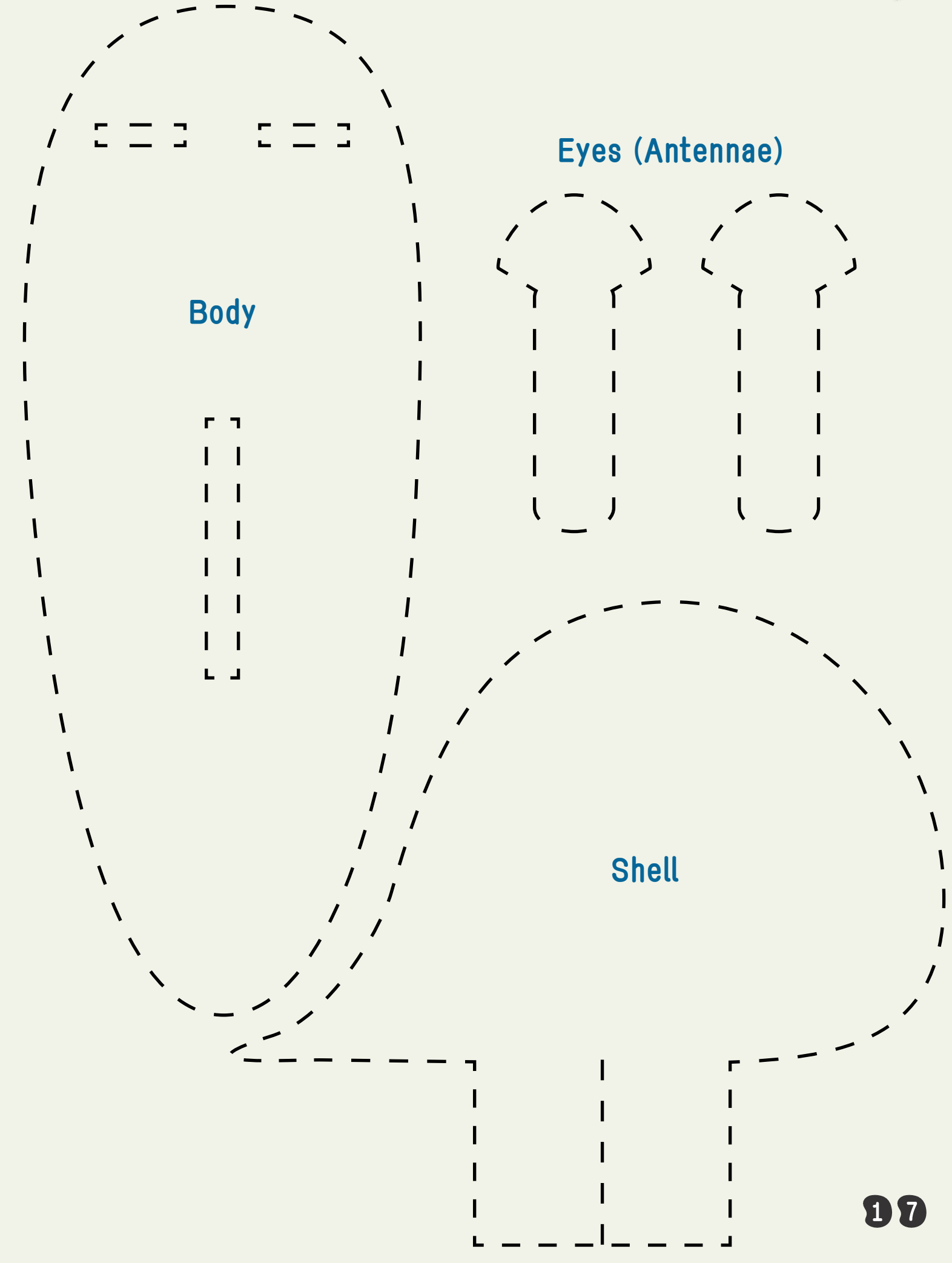
Alternatives/Extensions

Slowness is your strength. Move your snail so that you become the snail. Move the snail across the desk in a meditative glide. Move it through the air going the slowest you can manage. Move your snails around the room making slow contact with different surfaces. Breathe slowly, in time with your slow-moving snail.

Prompt: How does it feel to slow down?

Expand the activity: Let's create some interspecies empathy by writing a letter from our snail-self to a human. With your snail imagine your slow life on the pond or riverbed.

Writing prompts: Tell the humans how it feels to go slow. What can you see from the water? What does the water and riverbed feel like? How are you experiencing the world differently? What's it like to communicate with smell?


Eyes (Antennae)
Body
Shell

Session 1 - Activity 1: A Snail Tale

Cut out the body, shell and eye stalks (antennae) using the templates. Make slice holes along the body for the shell and the eyes to slot in later.

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Session 1 - Activity 2: Slow The Flow

In many ways constructed wetlands are like slugs and snails. These ecosystems are designed to slow the flow of water and naturally clean it using plants and soil. In Wigan and Leigh, projects like Haigh Sough and Bickershaw Country Park use wetlands to filter mine water and manage flooding. These wetlands work like snails, slowing down, filtering and holding water. Similar nature-based solutions are being explored near Exmouth, such as estuary reedbeds that help filter water and support wildlife.

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture

Materials:

- Xanthan gum (gluten free baking section of supermarket), Psyllium husk powder (health food shops like Holland and Barrat or Boots), or Cornstarch (available in supermarkets)
- Water
- Lollipop sticks or spoons
- Liquid watercolours, coloured inks, gouache paints or food dye
- Pots to mix (yogurt pots, jars or craft paint pots) - 2 per child
- Paint brushes
- Long roll of paper / A3 card
- Paper, pencil / coloured pencils / crayons (extension)

Activity

Slow the flow with a snail slime painting: we are going to mix up our own snail slime (also known as mucin) to paint in different colours to create snail trails that look like the streams of water that wind through wetlands into flashes and pools.

1. Put 1 or 2 teaspoons of xanthan gum / husk powder / cornstarch in a cup or pot. Make sure an adult helps with this.
2. Slowly add water, mixing until it has the consistency of slime or runny snot!
3. Add in your colour and stir well.
4. Use a brush and create snail trails across your paper. Try using your stick or spoon to put bigger blobs on your paper.
5. Smear the blobs with your fingers and try to move the paper to make the slime slowly run.

Alternatives/Extensions

Expand the activity: Let's describe what your snail slime was like. Can you think of 3 adjectives (describing words) to remember how the snail slime moved across the paper, how it felt or how it looked. Using pencils, draw these 3 descriptive words in a way that shows what each word means. You can use colours to help you make your word look like its own meaning.

Writing prompts: Examples of describing words that might express your snail slime could be: sticky, drippy, slimy, blobby, weaving, runny, trickle, slow. You might draw the word 'slimy' so it looks shiny and has drips running down the letters. You might draw the word 'slow' with the letters stretched out across the page. Maybe the letters of your words look like animals or other things that have the same characteristics that the word describes.

You could use onomatopoeic words (words that sound like the thing they describe) such as 'splash' or 'drip' to enhance how your drawings express the experience.

Session 1 - Activity 2: Slow The Flow

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You could use onomatopoeic words (words that sound like the thing they describe) such as 'splash' or 'drip' to enhance how your drawings express the experience.

Materials:

- Paper
- Pencil / coloured pencils / crayons

Session 2

POPO AND FANTASTICAL WATER

Session 2 - Activity 1: Water Protectors

Popo is a mythical creature born from Jordan's imagination — a whimsical fusion of chicken and crab. She stands as the goddess and protector of all bodies of water. Inspired by Feng Po Po, the Chinese goddess of wind, Popo embodies the essence of freedom, moving effortlessly through the elements of air, water, storms, rain, and moisture. She serves as both an invocation of water spirits and a gentle reminder to remain calm and adaptable through the ever-changing winds of life.

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture; learn about great artists and designers
- English: Reading and writing

Materials:

- Collage materials - magazines and newspapers
- Scissors
- Paper
- Glue Stick
- Paper, pen / pencil (extension)

Here are some water creatures from folklore in the areas that Anne Duk Hee Jordan's sculptures are located:

- In 1823 in the river Exe people claimed they saw a very strange mermaid. It looked like a human from the waist up, but had a salmon tail and two legs. The creature ran from people, screaming in fear, before sadly being caught and killed near the river.

- In Devon there is a creepy water spirit called Cutty Dyre. He lives in cold rivers and tries to lure people in. He's tall and green like seaweed, slippery like an eel with red eyes, snake-like hair, a dark beard, and sharp teeth.

- In Lancashire and Cheshire, children were warned about a similar creature known as Jenny Greenteeth, this water spirit also had green skin, long hair, and sharp nails. She is said to hide under pond weed, ready to pull in anyone who got too close.

Activity

All these creatures are chimera or hybrids, combinations of 2 or more creatures, and are protective over their watery homes. Collage (or draw) your own imagined mythological water creature that will protect your local waters.

Prompts: Does your creature have elements of other types of water animals? How does it survive in the water? What does it use or do to protect the water? Are they friendly or scary? What would you call your water protector?

Alternatives/Extensions

Write a short story about your mythological water creature.

Writing prompts: Describe your creature: What is its name? What does it look like, move like and when can you catch sight of it? Where does it live - marshes, rivers, puddles, the sea? What bad thing is happening to its watery habitat? What did it do to protect or save the water?

Session 2 - Activity 2: Fantasy Futures

Jordan's Popo is an invention that is resilient in the winds of change and protects water. She is a hybrid using different elements to create her power. Civil engineers and scientists are taking inspiration from nature to turn towns and cities into hybrid spaces that can help mitigate climate issues with water. Sponge cities use urban design to soak up rain like a sponge, helping deal with floods and water pollution. They include green roofs, parks, wetlands, and special pavements that absorb water. Rooftops can be used to collect rainwater, and floating gardens create more green space on city rivers using plants and sensors to clean dirty water, support wildlife, and make more space for recreation.

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture; learn about great artists and designers
- Design and Technology: Design; Make; Evaluate; Technical knowledge
- English: Reading and writing

Materials:

- Cardboard for base and elements
- Lots of general, clean rubbish (cartons, foil, yoghurt pots, string, magazines, newspapers, tissue paper, sponges, bubble wrap etc.)
- Tape
- Glue Stick
- Plasticine or blu tack

Activity

Using our imaginations we are going to create our own fantasy future 3D water saving inventions or dioramas.

Prompts: What water problem are you going to solve? Where will your invention go? What kind of materials would you use to make it in the real world? How big would it be?

You might want to reference some of the climate problems involving water featured in this document to find problems to fix.

You can reference some real-life solutions to gain inspiration such as: Sponge City policy in China including Wuhan and Tianjin Qiaoyuan Park in Tianjin City, La Petite Ceinture in Paris, hydrologist Soni Pradhanang's floating wetlands in Nepal, Water Pyramid project, Indonesia, The New York Restoration Project.

1. Start with a cut rectangle or circle base from cardboard to construct your model on.
2. Have on hand a broad selection of rubbish to choose from to spark creativity in the invention.
3. Using scissors, tape and glue, cut out and stick elements to your base to build a model of your invention.
4. Water wheels can be made using cut cardboard or other circular shapes with a skewer through its centre. Troughs and channels can be made using halved toilet rolls. Sliced and whole drinking straws can act as pipes. Rooftops can be built on top of little boxes or with stilts.
5. Using coloured pages in newspaper or scrap papers to add details like green space, planting and water.

Alternatives/Extensions

Explain your invention, tell the room or write down your description.

Prompts: What does it do and how does it work? Where will it be placed?

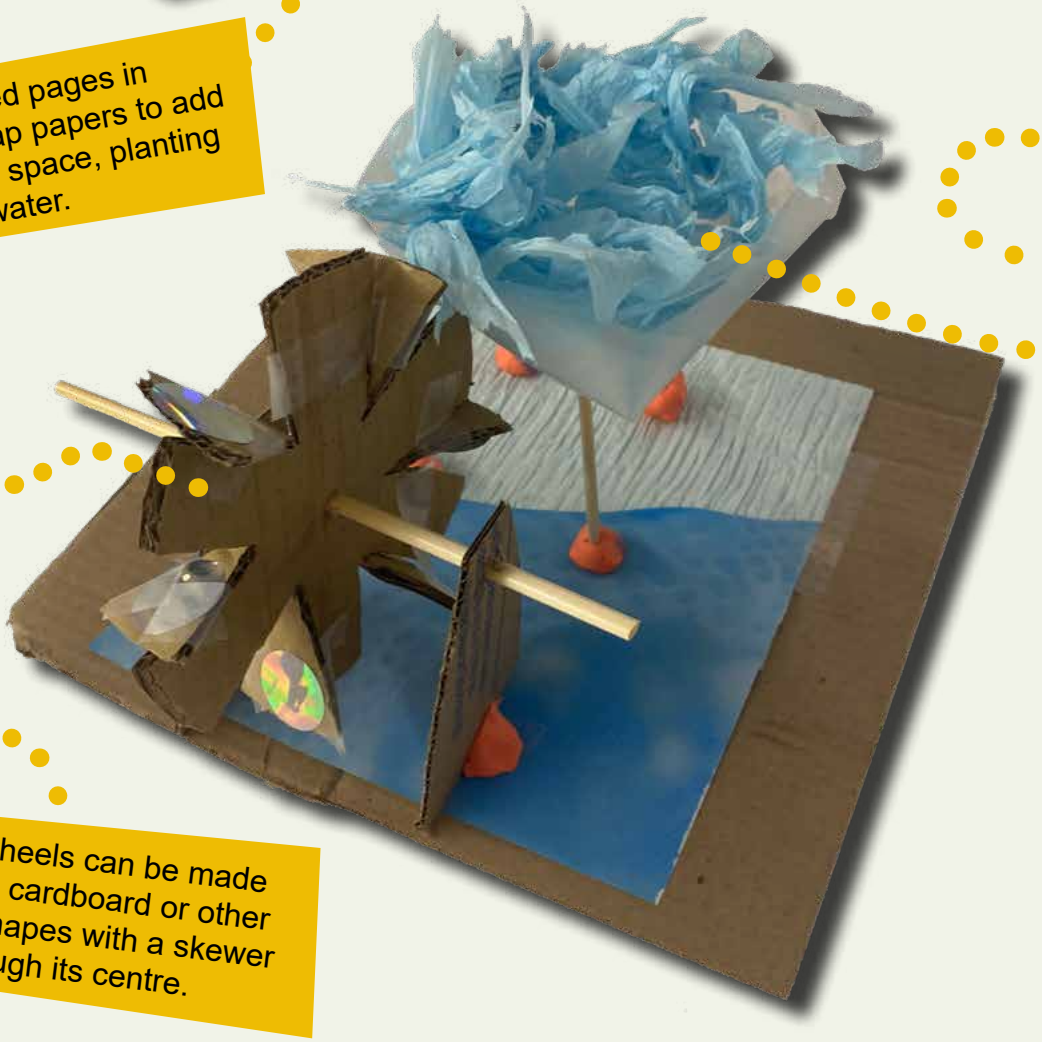
Session 2 – Activity 2: Fantasy Futures

Troughs and channels can be made using halved toilet rolls.

Sliced and whole drinking straws can act as pipes.

Rooftops can be built on top of little boxes or with stilts.

Using coloured pages in newspaper or scrap papers to add details like green space, planting and water.



Water wheels can be made using cut cardboard or other circular shapes with a skewer through its centre.

Session 3

BE MORE BARNACLE

Session 3 – Activity 1: Be a Barnacle Bioindicator

Though mostly found in the sea and coast they can also appear in brackish or estuarine areas of rivers where saltwater and freshwater mix. Barnacles are eco-symbols of resilience and adaptability and they are used by scientists as bioindicators of water quality. This is when living organisms such as plants, planktons, animals, and microbes, can be monitored to screen the health of an environment. This means barnacles are warning the world about the health of our water.

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture; learn about great artists and designers
- Design and Technology: Make

Materials:

- Cardboard cut into a circle (around 15-20 cm diameter)
- Wastepaper ripped to create barnacle texture
- Glue Stick
- Felt tip pens, oil pastels or crayons to write on message of warning or call to action
- Safety pins for the back
- Tape for the pin to stick to back
- A4 / A3 card (extension)

Activity

We are going to become like barnacles and create warnings to inform others about our concerns for our waters. Create a large collage barnacle badge with a message of warning or call to action about our water.

1. Cut out a large cardboard circle approx. 15-20cm in diameter.
2. Rip thin strips of paper to make the barnacle texture.
3. Glue strips in a repeat burst pattern from a central point around the badge.
4. Rip dark paper in a rough circle shape to create the centre of the barnacle.
5. Use oil pastels or felt-tips to write a bioindicator warning or message onto the badge.
6. Tape the safety pin to the back of the badge. Become a barnacle by wearing the badge.

Prompts: Thinking about the message your barnacle tells us - is it going to warn us of a problem with water? Perhaps it's something you are concerned about, or will it give a message to do a positive action or give hope?

Alternatives/Extensions

Expand the activity: Wearing your badges, hold hands to form a barnacle colony protest group and shout your messages to the world! Can you walk around your school or playground as a barnacle colony exclaiming your messages. Can your teacher photograph the colony and send the picture around the school to spread the message?

Make the barnacle badge then from the perspective of a barnacle create a poster with your 'bioindicator' message.

Session 3 – Activity 1: Be a Barnacle Bioindicator

Cut out a large cardboard circle approx. 15-20cm in diameter.

Rip thin strips of paper to make the barnacle texture.

Glue strips in a repeat burst pattern from a central point around the badge.

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Session 3 – Activity 1: Be a Barnacle Bioindicator

Alternatives/Extensions

Make the barnacle badge then from the perspective of a barnacle create a poster with your 'bioindicator' message.

Materials:

- Felt-tip pens, colouring pencils or crayons
- Paper for collage
- Glue Stick
- A4 or A3 Paper

Session 3 – Activity 2: Water Filters

Barnacles filter water by using feathery appendages (projecting parts) called cirri to capture food particles, primarily plankton and organic waste from the surrounding water. We can see how barnacle-reefs and wetlands help clean water by creating our own water filters.

Curriculum Links:

- Art and Design: Improve their mastery of art & design techniques including drawing, painting and sculpture; learn about great artists and designers
- Design and Technology: Design; Make; Evaluate
- Geography - Human and physical geography: the water cycle; types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water

Materials:

- Old plastic water bottle (cut off the bottom to use as a cup)
- Scissors or knife (cut bottom off the bottle - adult only)
- Coffee filter, cotton balls or fabric cloth
- Elastic band (to tie fabric around bottle opening)
- Sand
- Gravel
- Large gravel or small rocks
- Grass / straw
- Cup / recycled plastic pot (to mix muddy water)
- Water mixed with mud/soil

Activity

Like a barnacle, we are going to build a water filter from upcycled bottles using layers of gravel, sand, and cloth. Then we are going to pour in muddy water and watch it filter through.

The items you add to your filter should act like a sieve trapping the different particles that are in your dirty water as it travels down. Filtering like this happens where water trickles and filters through the rocks into underground water pockets called aquifers.

1. Cut water bottle in half to use bottle top end for filter and the base for the water capturing cup.
2. Turn the top of the bottle upside down. Tie fabric around the bottle top end with elastic band (or lay coffee filter or cotton wool inside).
3. Layer in sand then gravel.
4. Continue layering alternate layers of sand, gravel, grass and stones.
5. Place the bottle top end into the base cup.
6. Pour over the muddy water and watch it filter through into the base cup.

Prompts: Who has the clearest water? Who has the muddiest water? What are the differences between these two filters? If the water moved through slower does that make it more or less filtered?

Session 3 – Activity 2: Water Filters

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Place the bottle top end into the base cup. Pour over the muddy water and watch it filter through into the base cup.

FUTHER RESOURCES

Use the links below to find out more about the activities suggested in the learning resource, other areas to explore and helpful tools for teaching:

Link	Year Group(s)	Provider
Water supply and demand in the UK	Year 3	Oak National Academy
Water	Year 3 - 6	School Learning Zone
Climate change: Will England have enough water in the future?	Year 3 - 6	CBBC Newsround
Key Stage 2 – Education mini-series – Episode 3 – Water filtration	Year 3 - 6	Yorkshire Water
Make a water filter	Year 3 - 6	National Geographic Kids
Rainwater Harvesting	Year 3 - 6	Water Aid
Maths KS2: Understanding how rainwater can be harvested using maths	Year 3 - 6	BBC Teach
KS2 Art and Design / DT: Designing a rainwater harvester	Year 3 - 6	BBC Teach
Waterlands podcast	Year 3 - 6	Wildfowl & Wetlands Trust
Water Pollution for Kids | Learn How to Keep Our Water Clean	Year 3 - 6	Learn Bright
Providing safe drinking water: non-statutory Climate Change & Sustainability	Year 5	Oak National Academy
Water: our essential resource	Year 5	Oak National Academy
Explore the water cycle	Year 5 - 6	BBC Bitesize

For Educators

Climate Education:	
Resource	**Organisation**
KS2 Geography: Coasts and sustainable use of natural resources	BBC Bitezie
Register to become an Eco-School	Eco-Schools
Our Natural Environment Action Plan 2021-2026	Wigan Council
Schools and youth groups	The Rivers Trust
Coastal habitats	The Wildlife Trusts

Supporting With Eco-anxiety:	
Resource	**Organisation**
Talking to Primary School Children about Climate Change	Water of Leith Conservation Trust
Understanding the climate crisis and eco-anxiety	BBC Children in Need
How to Talk to Your Kids About Climate Change: Turning Angst into Action by Harriet Shugarman (2020)	New Society Publishers
How can we help kids cope with 'eco-anxiety'?	BBC
How to talk to children about climate change	Save the Children

Locale-specific:	
Resource	**Organisation**
Advocating for River Exe species	Friends of The River Exe
Community Services	Groundworks Wigan
Tackling the Climate & Ecological Emergency	Exmouth Town Council

Relevant KS2 Literature

Book	Reading Age	Publisher
The Rhythm of The Rain by Grahame Baker-Smith (2018) - audio version available	4-11	Templar Publishing
Song of the Dolphin Boy by Elizabeth Laird (2018)	7 - 11	Pan Macmillan
Song of the River by Gill Lewis (2022)	9+	Barrington Stoke Ltd
Ganesha Goes Green by Lakshmi Thamizhmani (2023) - audio version available	5 - 9	Barefoot Books
Lore of the Deep: Folklore & Wisdom from the Watery Wilds by Claire Cock-Starkey (2024)	6 - 11	Wide Eyed Editions
Water Stories from Around the World edited by Radhika Menon and Sandhya Rao (2010) - digital version available	7 - 11	Tulika Publishers
The Wonderful World of Water: From Dams to Deserts by Sarah Garee and Marijke Huysmans (2023)	8 - 11	Prestel
Mind Mappers: Are we running out of water? by Isabel Thomas (2023)	8 - 11	Weldon Owen

For Young Readers

Book	Reading Age	Publisher
We Are Water Protectors by Carole Lindstrom (2020) - audio version available	4 - 6	Roaring Brook Press
Once Upon a Raindrop, The Story of Water by James Carter (2018)	5 - 7	Caterpillar Books
Water: Protect Freshwater to Save Life on Earth by Catherine Barr (2022)	6+	Otter-Barry Books

CREDITS

UP Projects

UP Projects curates and commissions public art, working collaboratively with artists, communities and partners to create extraordinary projects through artist-led community engagement. With an international outlook, activating spaces across the globe and in the digital domain, UP's work explores the multitude of ways in which people can encounter and connect with contemporary art in unexpected places.

www.upprojects.com

A la Ronde

A la Ronde is an 18th-century, 16-sided cottage near Lympstone, Exmouth, Devon, England under the ownership of the National Trust. The house was built for two second cousins, Jane and Mary Parminter. It is a Grade I registered building alongside the gardens which are Grade II listed in the National Register of Historic Parks and Gardens.

www.nationaltrust.org.uk/visit/devon/a-la-ronde

Haigh Hall

Haigh Hall is a historic country house in Haigh, Wigan, Greater Manchester, England. Built between 1827 and 1840 for James Lindsay, 7th Earl of Balcarres, it replaced an ancient manor house and was a Lindsay family home until 1947, when it was sold to Wigan Corporation. The hall is recorded in the National Heritage List for England as a designated Grade II* listed building and is owned by Wigan Council.

www.wigan.gov.uk/Council/Projects/Haigh/Index.aspx

Anna FC Smith

Anna FC Smith is a Wigan (UK) based multimedia artist and arts educator. Her work explores ritual, folk culture, communal activity and social power through historical research, co-creation and creative engagement. Inspired by historical material culture connected to environment, myth, place and everyday politics she produces sculpture, installation, performance, research texts and group actions that find ground in present concerns.

www.annafcsmith.com

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UP PROJECTS

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