

Managing Water in the Marshes – KS2

Overview

Description	A session in understanding the history of water management and an exercise in managing your reserve’s water... in miniature! This workshop makes use of a specialist model that can be hired from the Avalon Marshes Centre. It is designed for KS2, but the model can be used effectively with KS1, 3 and 4 students.
Equipment	Water model, sponges, clouds, bucket of water, trolley, paper towels and clean dry towels; historic landscape maps; flipchart and pens
Time	75 minutes will allow for all pupils to interact with the model during the session.
Curriculum	Physical geography – Describe and understand climate, rivers, water. Human geography – Land use. Science – Requirements of plants for life and growth; Living things and their habitats; The water cycle. PSHE – care for the local environment.
Aims	<ul style="list-style-type: none"> • Consider why water is important in the Avalon Marshes • Look at how water is managed in the Avalon Marshes • Describe the implications of flood and drought in the Avalon Marshes
Learning outcomes	At the end of this session all pupils should be able to: <ul style="list-style-type: none"> • Talk about what the Avalon Marshes landscape is like • Describe in simple terms how water is managed in the Avalon Marshes • Give an example of why water management in the Avalon Marshes is important
Linked resources	Introduction to the Avalon Marshes Pick & Mix – Wonderful Wetland Wildlife; Getting to Know Peat; Avalon Marshes Timeline; Mapping the Marshes; Awesome Adaptations; Noses – A Wildlife Game; Water in the Wetlands; Creative Response to Landscape; Avalon Marshes Quiz. Factsheets: The Avalon Marshes; Water Levels; Too Much Water, Too Little Water. Specialist equipment – Avalon Marshes Floor Map.



Teachers' notes –

Today, you will be managing your own wetland reserve... We'll look at how water influences the land, wildlife and people and we'll look at how nature and man work to keep the balance of water just right for all of us. The 'Introducing the Avalon Marshes' presentation is a good starting point to this session.

Begin the session with a discussion about Avalon Marshes – where is it and what are its characteristics?

The Avalon Marshes is a fresh water environment. Discuss the difference between salt water and fresh water habitats with your pupils. Only around 3% of all the water in the world is fresh water, and much of that is in cloud, ice, or underground, meaning that fresh water is rare and precious.

Avalon Marshes is a flat landscape at or below sea level, at constant risk of flood. Discuss the wildlife that you would expect to see here. Why is water important to wildlife? What about communities? This wetland has been constantly used, altered and managed by humans over thousands of years. Throughout the ages, work has been carried out to reclaim land from the water. Seasonal flooding has affected land use, including settlements (living arrangements) across the ages, with housing today limited to higher, harder land.

During summer drought across other areas of Somerset, the wetlands continue to provide rich grasslands for summer grazing, while, in winter, the flooded plains offer habitats for a wide range of wintering birds.



Photo: Lynne Newton

Notes for using the water model:

- The model is best used by half a class at a time. Whilst half of the class uses the water model with a teacher/teaching assistant, the other half should do another activity with another adult – have a look at our Pick & Mix activities for ideas. Another option is to use the time to research the Avalon Marshes and wetland wildlife online.
- Always move the model with two people.
- The lid only goes on one way – the recesses line up with the three trees.
- The model needs to be level to work – there are levelling bubbles on two sides to show if it is level.
- Mount the model on a table near a sink. Make sure there is space for half the class to stand around it.
- The first pair of sluice gates can be inserted to retain water in the ‘catch water’. The second set will retain water in the fields.
- When the drain is full, the water can be pumped up to the river.
- When it all gets too wet, the sun (sponges) can be used to start soaking up the water.
- Use a cup or pot to scoop water out at the end of use. When the water gets low, use paper towels to absorb the rest, and a dry towel to dry the model.
- Please wipe it down with an anti-bacteria spray after use.

Look at the model as a representation of Avalon Marshes. Talk about the different features. Flat, open landscape of wet pasture, arable and wetland divided up by wet ditches or ‘rhyndes’. Floodplains are covered in peat deposits up to eight metres deep, with clay underneath, creating waterlogged land which creates habitat (home) to many forms of wildlife, but is at risk of loss through drying.



Start with the sluice gates closed (in place) and discuss why we might want to keep the water here (or not!).

Avalon Marshes Water Model



Children use rain clouds on marshes (optional review of water cycle). *Rainclouds are filled by submerging the cloud in the water to fill the cloud – cover the top hole with a finger to keep the water in the cloud as it is moved – uncover the hole to allow the rain to fall over the model.*

Where does the water go? How can the water be used? Link to today's weather, and different seasons. What happens if there is too much rain? What is flooding? Talk about flooding – what happens to homes, farms etc.

How can we manage the flooding that we witness on the model? Now open sluice gates - children can see what happens when gates are opened, and the pump is used.

What happens when the sun comes out and the land is subjected to long periods of sunshine, heat and lack of rainfall? The large yellow sponges represent the sun – children use these to dry up the rain on the model. What happens if there is too much sun? Talk about drought – what happens to habitats, crops etc?



Avalon Marshes Water Model



Group discussion:

The picture cards from the 'Water in the Wetlands' Pick & Mix activity are useful for this discussion

Effects of flooding and drought on wildlife, people, homes and businesses....

Discuss the impacts of flood on different species of animal, and on different people. In groups choose a team leader, and a scribe. If using the picture cards give each group 2 or 3 to discuss. Brainstorm ideas for 5 minutes and make notes on a flip chart.

Compare groups' flipcharts and give children a chance to feedback.

Demonstrate that water is necessary for the natural balance of nature, heritage and humans.

Open class discussion:

A follow-up discussion as a class– what can we do to conserve and protect water? How can we prepare for floods or drought? How can we reserve water when there is lots of it for times when there isn't enough? Talk about how water is managed in the area – for farming, homes, roads, reserves, wildlife, archaeology etc.

Extension:

- Keep a weather diary, paying particular attention to rainfall.
- Do a plant growth experiment with varying amounts of water on the same type of seedling to see the impacts of too much water and too little water on plant growth.
- Discuss what we can do to conserve water at home and at school.
- Research the wildlife that is dependent on the fresh water environment of the Marshes.