



Teacher's guide

Welcome to the Thames Water Wise up to Water Website Teacher's Guide. This guide has been written to:

- demonstrate how the *Wise up to Water* website will support you in assessing, planning for and implementing water efficiency measures in your school
- help you find the information and resources contained within the *Wise up to Water* website quickly and easily that are most relevant to you, your school and your pupils.

The *Wise up to Water* website has been developed by Thames Water to be a useful and valuable resource to the whole school community. It aims to support school managers, teachers and pupils in creating and maintaining a more water efficient learning environment.

To start using *Wise up to Water* today, go to www.thameswater.co.uk/wiseuptowater.

The website is one of many resources available from Thames Water to help raise awareness and pupil participation in the process of thinking about water efficiency through a wide range of cross curricular activities. Links and downloads to these resources are available under the Teachers' Resources section of the *Wise up to Water* Website.

Wise up to Water – Helping your school save money and become more sustainable

The Eco-Schools initiative is an international award programme promoting a pupil/student led approach to the sustainability of their school.

The *Wise up to Water* website helps your school achieve the water efficiency components of each of this initiative, specific references can be found by using the links from the website.

THREE INITIATIVES – WISE UP TO WATER SUPPORTS THEM ALL

Sustainable Schools – it is the Government's aim that all schools will be sustainable by 2020; it offers 8 'doorways' one of which is water.

Sustainable Learning Framework – focuses on reducing energy and water consumption in schools; the scheme assists schools in reaching higher energy rating certificates as part of the European Energy Performance of Buildings Directive.

Eco Schools – an international award programme promoting a pupil/student lead approach to the sustainability of their school.



Using the website

The website can be used in a number of ways by both teachers and pupils:

Making your school more sustainable

- If you are just starting out on your journey to sustainability, the Wise up to Water website provides a simple, step-by-step guide to the planning, preparation and action to undertake a water survey and to improve performance with respect to water.
- If you are already involved in the Eco-Schools initiative and are somewhat down the path to sustainability, the website can be used to select and budget for a range of water efficiency devices and measures, to be incorporated in your Action Plan.

As a curriculum support tool

- If you wish to integrate water and water efficiency into your curriculum planning, the website can be used to find a range of curriculum-linked teaching and learning tools focussing on this subject.

The website has been arranged into 4 sections:

Within each section you will find information aimed at pupils and specific information written to support you as a teacher. The Teacher's Hat quickly identifies specific teaching and learning activities, guidance for introducing activities to pupils and links to supporting resources and information.

Section 1 – Why Save Water?

Identifies several reasons why saving water is important to everyone around the world, including the Thames Water region, where the misconception is often that we have more than enough water!

It provides great stimulus for introducing pupils to the concept of reducing their water use and becoming involved in an Action Group to help make their school more water efficient. In addition statistics and facts are provided that can be incorporated into water project work.

Curriculum-linked activities using this section as a stimulus are identified in the tables in this guide.

Section 2 – Survey your school

This section provides a comprehensive guide to involving pupils in assessing water use in school together with all the tools needed to complete an audit.

Complete the online form with your pupils to reveal recommendations and actions to reduce water use and to benchmark your school.

Downloads and support materials include:

- Pupil completion water audit form
- Annual average water use example calculation
- Reading your bill information sheet
- Benchmarking activity and calculations.

Note: Pupil involvement in the audit process is strongly recommended and this section provides numeracy and ICT based activities to allow you to easily integrate it into a teaching and learning session.

Section 3 – Involve your school

A range of suggestions for water efficiency devices and procedures are provided together with their savings, costs and the payback periods. These could be used to help develop your action plan.

This section also provides a step-by-step guide for teachers, school managers and pupils to form an Action Group to plan for and implement water and money saving changes identified through the audit process.

Section 4 – Teachers' Resource

Suggestions for integrating water efficiency messaging across the curriculum together with an example information sheet to demonstrate a business case and meter reading information sheet.





Wise up to Water and the curriculum

Teacher's Guide Curriculum Integration Opportunities for KS 2 and 3

| Key Stage 2 | Key Stage 3 |
|---|--|
| Art and design 1a – c 5a, | Art and design 5a |
| Citizenship 2a,j,k | Citizenship 1i 2a 3a-c |
| English En1 Speaking and listening 2b,f. 4a,b, c. 8 En3 – Writing 1a – f. 2a – d. 7a-c. 9a-d. 11, 12 | English En1 Speaking and listening 1a – g. 8c. 10a,b 11a En3 Writing 1e-k. 2. 7. 9c |
| Mathematics Ma2 Number 1a – i. 2d. 4a,b. Ma3 Shape, space and measures 4a | Mathematics Ma 4 Handling data 1 – 5 |
| Geography 1e, 2f, 3b,d,e 5a,b 6a,b,c,e 7b,c | Geography 1a,b,c,f 4a,b 5a,b 6a, c, d, e,j 7b |
| Science Sc2 Life Processes and living things 1a,b,c. 3a –d. 4a,b, c. 5a,b,c. | Science Sc 1 Enquiry 1 – 2 Sc2 Life processes and living things 3, 4b, 5 Sc 3 Materials and properties 2i |

The links represent programmes of study identified in the NC QCA Guidelines 1997. Whilst the table does not show specific links to the new secondary curriculum implemented on a rolling basis from September 08, schools will still find the activity suggestions relevant to teaching and learning requirements.





Activity suggestions

Wise up to Water and the curriculum

| Introduction, Stimulus and Sustainability | Research, investigation findings and impact | Action, sharing what you discover and claiming the credit |
|---|---|--|
| Why Save Water? | Survey your school | Involve your school |
| <p>Everyone uses water</p> <p>In the UK the average person uses approximately 163 litres per day. People in developing countries often only use 20 litres a day. Use this comparison information and water usage tables to undertake a group based activity to list, prioritise and present back findings.</p> <p>Choose one country from each of the world's continents and research the word for water, create a display of these words using non roman alphabets.</p> <p>Make sure there's enough to go around</p> <p>The earth's water goes around in a cycle. Review the water cycle.</p> <p>Re-enact the water cycle a short play with each pupil taking on a role.</p> <p>Create a water rap to remember the order.</p> <p>Two thirds of rainfall is lost through evaporation – investigate evaporation.</p> <p>Help the Aquatic Environment</p> <p>Animals, birds and fish need water too.</p> <p>Research the nearest wetland facility using the links provided. Make a list of the species found there and create a database.</p> <p>We all need to drink water to be healthy</p> <p>We all need to drink 6 – 8 glasses of water a day! Water from the tap in the TW region is amongst the cleanest and best tasting in the world.</p> <p>Use the information and links provided to create a poster or leaflet to encourage your friends to drink more tap water.</p> <p>Where does the tap water we drink come from? Use the links provided to find out and create a flow chart to show the process it has gone through to get to our taps.</p> <p>Devise a short questionnaire to find out: who drinks tap water, who drinks bottled water. Use the findings to find out how many bottles would be thrown away or recycled and present back as a spreadsheet.</p> <p>Write a rap/rhyme or song including the words: dehydration, taste, tap-to remind people why they should drink more water.</p> <p>Run a class 'blind taste challenge' where pupils try 3 or 4 different types of water (Thames Water and bottled brands) labelled A, B, C, D and rate them out of 5 for taste, clarity, smell. Collate the scores from the class before unveiling which water achieved which results.</p> | <p>Flushing it Away</p> <p>If toilets are not fitted with a Save-a-flush or dual flush mechanism, each flush uses about 7 litres of water. If the average person uses the loo 4 times a day, calculate the water used by:</p> <p>1 person</p> <p>Your class</p> <p>Your whole school</p> <p>daily, weekly, termly and for the year.</p> <p>Put this information in a chart.</p> <p>A Save-a-flush saves 1 litre per flush.</p> <p>Recalculate the sums above if each flush only used 6 litres a flush.</p> | <p>Water saving gadgets</p> <p>Investigate the gadgets the survey recommended. Which gadgets would save the most water? How does the water saving compare to the payback periods? Is it worth installing the gadgets that were recommended?</p> <p>Action Plan</p> <p>Create a mind map using the recommendations made by the Water Use Survey.</p> <p>What are the steps you are going to take?</p> <p>Monitoring</p> <p>Plot a graph of your schools' meter readings. Are there any trends in use? Is water use increasing or decreasing?</p> <p>Spread the word</p> <p>To be successful everyone needs to play their part...</p> <p>Organise a 'Wise up to Water Day' to launch your project.</p> <p>Prepare and present your plans to the school as part of an assembly. Think about ways to keep everyone informed of each process.</p> <p>Your assembly should include:</p> <p>Your audit results</p> <p>Your plans</p> <p>How much you think can be saved</p> <p>Water facts</p> <p>Water themed or based music</p> <p>Use the Top Tips information card (Teachers' resources section) and create a poster, booklet or leaflet to inform staff and families the best way to reduce water consumption in the school grounds.</p> |



Key Stage 3 Extensions

| Introduction, Stimulus and Sustainability | Action, sharing what you discover and claiming the credit |
|---|--|
| Why Save Water? | Involve your school |
| <p>Saving water can help reduce greenhouse gas emissions Investigate and discuss economic and social effects of global warming in the UK, and 2 other continents</p> <p>Devise and undertake a science investigation to measure pH of rainwater and water from 2 other sources.</p> <p>Study the effects of weathering on historic buildings.</p> <p>Help the Aquatic Environment Examine the effect of water-logging on plant roots, structure of root hairs and photosynthesis</p> <p>Research and select the nearest wetland to your school. Classify the plants and animals found there.</p> <p>Produce a food web to show the feeding relationships within it.</p> <p>Is there a particular species under threat? Research and devise a letter to your local newspaper to promote water conservation to protect the species under threat.</p> <p>Make sure there's enough to go around Two thirds of rainwater is lost through evaporation – Investigate factors that effect evaporation.</p> | <p>Use the information provided on the water saving devices to calculate:</p> <p>Cost of implementation/installation within your school</p> <p>Make a list of the pros and cons of the devices and present an argument for installation today even if the payback period is someway off.</p> |

