Teacher's Guide

Water Matters

Contents

- **Teacher's Guide, providing information and a range of suggested curriculum activities on the theme of water consumption and conservation.**
- **Pupil Activity Sheets for use in Key Stage 2 Numeracy and Literacy, with guidance on their use.**
- **Challenging and thought-provoking *Water Matters* quiz, for use in school or as a homework activity.**
- ***Water Matters* survey homework activity.**

The Thames Water Educational DVD *Aquabatics* can be used to introduce and support many of the activities in this pack. Look out for the DVD icon where it is recommended to support specific activities.

If you require further copies of the DVD or wish to request a first copy, please call us on 0870 240 1640.

Further information

Further information and downloadable resources can be found on the following web sites:

Thames Water Education www.waterinschools.com

Thames Water's dedicated education website, providing a range of lively resources, designed to support the teaching and learning of water across the curriculum.

Water in the School www.waterintheschool.co.uk

A web-based curriculum resource containing a wealth of information, both for teachers and pupils, to allow you to carry out a comprehensive, 'real-life' Water Metering Project in your school.

The Water School www.thewaterschool.co.uk

Thames Water www.thameswater.co.uk

Water Efficiency www.thameswater.co.uk/waterwise

The Water Family www.thewaterfamily.co.uk

The Environment Agency www.environment-agency.gov.uk

Water UK www.water.org.uk

Water Aid www.wateraid.org.uk

Email: education@thameswater.co.uk

Telephone: 0870 240 1640

Introduction

During the past two decades we have been steadily increasing the amount of water we use. Climate change and population growth are also increasing the pressure on our region's water supply. In 2005 and 2006 we experienced one of the longest, driest periods on record which left London and the South-East in the grip of a serious drought. It is vital that we join forces now to save water, if we are to reduce the risk of serious shortages in the future.

Saving water – whether at school, at home or in the garden – takes very little effort, but small changes can make a big impact. This is the message we want to get to the region's school children, so the next generation will understand why we cannot take our water supplies for granted and how we can all help to conserve this precious resource.

Thames Water recognises that good habits started now will become a way of life for the future. We hope schools will continue to work with us by using the *Water Matters* materials, thus encouraging children to develop a responsible attitude towards water consumption now and in the future.

Saving water in school

We have developed this new resource as part of our ongoing commitment to supporting and working with schools. *Water Matters* has been designed to encourage school children to investigate and consider the ways in which they use water, and the amount used, both at school and in their homes. It builds on and complements the water conservation themes explored in both the *Aquabatics*, Key Stage 2, DVD resource and the popular *Help us to Beat the Drought* Assembly pack.

Water Matters aims to provide schools with practical, lively, curriculum materials, which will help them to raise awareness amongst pupils and to implement some simple measures, to reduce their water consumption and save money in the process. Activities which include conducting simple water audits will help children to get to grips with the key issues of water wastage and conservation. These also provide data for children to use when planning and executing a publicity campaign for the rest of the school about the importance of saving water. We would always appreciate any feedback you have on how your school has implemented water conservation activities.

The Department for Education and Skills (DfES) suggests that typical annual water consumption in schools is 11 cubic metres per secondary school pupil, per year, and 7 cubic metres per primary school pupil, per year, and this can easily be reduced to 4 cubic metres per pupil, per year. Thames Water is currently working closely with a number of selected schools to help them reduce their water consumption and so save money on their water bills. However, there are many straightforward water efficiency measures that could be implemented quickly and easily by any school for little, if any, financial outlay.

Water and the Curriculum

Water is an exciting topic that can develop pupils' skills in many curriculum areas including geography, ICT, numeracy, literacy and PSHE. *Water Matters* can be used either:

- as a cross-curricular resource, eg. when covering the topic of Water in geography
- individual activities can also be selected to support Numeracy and Literacy

Curriculum Links

Geography	
Geographical enquiry and skills	1a, 1b, 1c, 1d, 1e; 2a, 2b, 2d, 2f, 2g
Knowledge and understanding of places	3d, 3e, 3g
Knowledge and understanding of patterns and processes	4b
Knowledge and understanding of environmental change and sustainable development	5a, 5b
Breadth of study	6e, 7a, 7c
Literacy	
En1 Speaking and Listening	
Speaking	1a, 1b, 1c, 1d, 1e, 1f
Listening	2a, 2b, 2c, 2d, 2e
Group discussion and interaction	3a, 3b, 3c, 3d, 3e, 3f
Language variation	6a
Breadth of study	8b, 9b, 9c, 10a, 10b, 10c
En2 Reading	
Reading for information	3a, 3b, 3c, 3d, 3e, 3f, 3g
Non-fiction and non-literary texts	5a, 5b, 5c, 5e, 5f, 5g
Breadth of study	9c
En3 Writing	
Composition	1a, 1b, 1c, 1d, 1e
Planning and drafting	2a, 2b, 2c, 2d, 2e, 2f
Standard English	6a
Language structure	7a, 7b, 7c, 7d
Breadth of study	9a, 9b, 9c, 9d; 10, 11, 12

Numeracy	
Ma2 Number	
Using and applying number	1a, 1b, 2c, 2d
Number and the number system	2c, 2f, 2i, 2j
Calculations	3a, 3i, 3j
Solving numerical problems	4a, 4b
Ma3 Measures	
Using and applying measures	1a
Understanding measures	4a, 4b
Ma4 Handling Data	
Using and applying handling data	1a, 1c, 1d, 1f
Processing, representing and interpreting data	2b, 2c

Learning Outcomes

Through participating in *Water Matters* pupils should be able to:

- carry out calculations using a variety of strategies and techniques
- collect, interpret and present information, using ICT, where appropriate
- express their own viewpoints on a topic 'In the news'
- construct an argument and present findings to others in a way that will persuade them to change their attitudes or behaviour

Water Matters – Pupil Activities

Introducing the Topic

We all use water for a wide variety of purposes every day. By undertaking the activities in the *Water Matters* pack children will be able to review how effectively water is used in the school and the home and to propose some improvements. It is important that children start by considering the importance of water for survival.

- Ask the children to work in pairs or groups and list all the ways and the number of times they use water in a normal day. After discussing their findings show a 1 litre bottle filled with water and ask the children to estimate how many litres of water we use each day. Explain that most of us use about 160 litres per day. Now ask them to consider what they would do if they turned on the taps one day to find that no water came out.
- Use the first two sections of the *Aquabatics* DVD, to stimulate discussion about the scale of the operation involved in supplying the water we need and the natural water cycle.

- Ask the children to consider how and where water is used in schools. It might be useful to allow children to walk around the school, making notes. Compile a class list of all the places where water is likely to be used. This information can be used as the starting point for a school water survey.

Literacy – Pupil Activities

Persuasive texts take many forms, eg. newspaper and magazine articles, letters, advertisements, leaflets, posters and fliers. By undertaking some of the surveys, research and numeracy activities suggested in *Water Matters*, pupils will develop greater knowledge and understanding about the issues of water conservation. This can then be used in a range of discussion and persuasive writing tasks.

After examining the results of the School Water Survey and/or completing numeracy activities such as Water Meter Reading, task the children to plan and prepare a publicity campaign to persuade all members of the school community to join forces in trying to cut down on the amount of water they use. Producing such a campaign provides many opportunities for cross-curricular links with Art & Design and ICT.

Posters

- After looking at examples of posters and examining their use of language, design and layout features, ask children to work in pairs to plan and design posters to put up around the school. They should be striking, persuasive and inform the audience of the major issues. Remind the children they will need to select relevant facts from their research and decide which best support their argument. Discuss how these facts can be used to write persuasive text. Encourage children to use powerful phrases, create attention-grabbing slogans and to select appropriate illustrations to support their text. *If your school has set a target and incentive for a reduction in water consumption, to save money, this could also be promoted via the poster campaign.*

Leaflets

- Use the Thames Water Drought Newsletter (find this online at www.thameswater.co.uk/droughtads) as an example of writing which informs and persuades. Read it together and identify key information. How is this presented? Children could work in groups to identify the most convincing points. Why do they successfully persuade us?
- Ask children to produce leaflets to inform the rest of the school about the campaign to save water. Persuasive devices should be used to capture the reader's interest. Key facts and information should be presented in a clear and convincing way.

Advertisements

- If you have an interactive whiteboard in your classroom, you could introduce this activity by showing examples of *Beat the Drought* advertisements produced by Thames Water, for magazines, TV and radio. Go to www.thameswater.co.uk/droughtads to see examples. For each example discuss what is being advertised, what information is being provided and what persuasive devices are in action. Can the children spot slogans and logos? Is colour important? How do the images relate to the message? Who are they aimed at? How do we know? Are the adverts powerful? Why?
- Children select one key issue from their work on saving water in school and create a newspaper advert targeting an appropriate audience, e.g. 'Don't leave taps running' – children; 'Don't wash vegetables under a running tap' – adults. The adverts should use persuasive devices and be produced in a style appropriate for the intended audience. They might want to consider creating an appropriate *Water Matters* character to appeal to children.

- Provide groups of pupils with copies of the 'Television Storyboard' activity sheet and ask them to use it to plan a 30-second TV advert for the Water Saving Campaign. When they have planned their advert they should prepare it for presentation to the rest of the class. They could either act it out or film it with a video camera and then show it.
- Alternatively children could plan, prepare and record a 30-second radio advert. Encourage them to use sound effects, music and jingles. Each group should rehearse and perform their advert 'live' to the rest of the class. These adverts could be videoed and evaluated by the rest of the class.
- TV and radio adverts could also be performed as part of a presentation to the rest of the school during a *Water Matters* assembly.

How Much Water Do We Use?

- Use the 'Water Conservation' section of the *Aquabatics* DVD, to encourage children to think about how much water we use in our daily lives. Discuss the different ways water is wasted and the steps that can be taken to reduce waste.
- Ask pupils to work in pairs or groups and produce two lists; Water in the Home/ Water in School, comparing where water may be wasted in each. As below.

Water in the Home	Water in School
Leaving taps running when brushing teeth	Leaving taps running after washing hands or when washing out paint pots

Use the 'How much water? Data Chart' to estimate how much water could be wasted in the home and school through some of these practices.

- Provide children with copies of the 'School Water Survey', activity sheet, Literacy 1, and ask them to investigate and identify inefficient use of water in your school. In class compare results and create a Water Action List of problems that need to be addressed.
- Pupils could attempt to estimate how much water is used by the whole school. Eg. create a tally chart showing how many times they flush a school toilet in a day, wash hands etc. They could use this data to produce bar charts/graphs to illustrate where and how much water is used in school in a day/a week/a month etc.

- Encourage children to conduct a survey of water use in their homes by looking at how many baths/showers their families take each week, how often the washing machine is used etc. Distribute copies of the 'Help us beat the drought' survey sheet for children to complete as a homework exercise. Alternatively, children could work in groups or as a class to create their own questionnaires. Encourage children to return their questionnaires to school and compile a class bar chart to illustrate where and how much water is being used. Ask the children to identify where savings could be made if people can be persuaded to change their behaviour.
- Measure how much water is being lost from a tap you have purposely left dripping in to a container and checking the amount at intervals during the school day. Please use this water wisely!

Letters

- Use the information collated through the School Water Survey activities and the data provided within this pack as the basis for letters to the Headteacher and/or the School Governors. The letters should clearly state the issue, include supporting evidence, outline the specific facts and end with a call to action.

Newspaper Reports

- Compile a class *Water Matters* newsletter, to distribute to the rest of the school. Groups of children could be tasked to produce a variety of reports and articles. Advertisements could also be incorporated. Provide children with copies of the Newspaper Report Plan Literacy 2 on which to write notes on their chosen issue before writing their articles.
- Children could use the Newspaper Report Plan to plan and write fictitious news reports on the theme of water conservation, eg. a water shortage crisis in the future.

Discussion

- Provide children with copies of the Thames Drought Newsletter (find this online at www.thameswater.co.uk/droughtads) or show the newsletter on the whiteboard and read parts of it together. Discuss the issue of a hosepipe ban and the fact that people have different viewpoints. Create a class for-and-against grid to illustrate the opposing sides of the argument. Use hot-seating with the teacher in the role of a representative of Thames Water and invite questions from children. Follow this up by placing the pupils in groups and setting up a role play simulation. Roles could include Thames Water representative, newspaper reporter, members of the public opposed to the ban, etc.
- The children could use the ideas generated in the role play activity as the basis for a presentation to the rest of the class, entitled 'Should hosepipes be banned?' Remind them to pay attention to the use of persuasive language when preparing their presentations and to use the voice for effect when delivering them.

Presentation

- Using their notes from previous *Water Matters* activities, children should prepare and organise a presentation of this information for a school assembly. The school may wish to consider inviting parents.

Follow up and Homework Activities

Water Matters includes two activities which are ideal for use as homework tasks:

Homework questionnaire

This activity, which encourages parental involvement, should ideally be distributed to children at the beginning of the project. We hope it will stimulate discussion at home and provide data for collation, analysis and debate in the classroom.

Water Matters Quiz

This is designed as a fun, follow-up activity which should reinforce the key learning points on the issue of water conservation. All the information children need to answer the questions can be found on the Thames Water website www.thameswater.co.uk/waterwise.

Water Matters Quiz answers

1. b, 30 mins with hosepipe
2. c, 20 litres,
3. b, 32 buckets
4. a, 4 buckets
5. c, 100
6. b, 54 days
7. a, 432 days
8. c, 54 litres
9. b, 270 litres
10. a, 45 litres (bath minus five min shower)

Evaluating the Success of the Campaign

As part of their action plan to tackle water wastage in school, children should consider how they will measure the success of their awareness raising campaign and any improvements they are able to implement. For example, they may want to repeat the School Water Survey and/or Water Meter Reading activity, Numeracy 4, some time later and compare the results with those they took at the outset.

If your school has a School Council the children might decide to involve it in the Campaign or to appoint 'Water Matters Champions' to ensure that any changes and improvements are maintained for the long term.

Numeracy – Pupil Activities

Water is an excellent topic for developing numeracy skills in real-life situations, particularly in terms of the potential for investigating capacity and using data handling to analyse consumption. The *Water Matters* resource provides a variety of pupil activity sheets for use in Numeracy lessons.

1. What is a Litre?

This is a fun, practical activity, which aims to reinforce what a litre is and what it looks like. Children will need to have a clear understanding of what a litre of water is in order to appreciate the importance of the issues explored within the *Water Matters* pack. A list of the equipment required is provided on the activity sheet.

2. Capacity Conversions

This Mental Maths starter will provide children with an opportunity to practise converting quickly to and from litres to millilitres. Before trying this activity they will need to know the equivalence between a half, quarter, three quarters, etc of 1 litre and millilitres.

Capacity Conversions answers

1000 ml, 2000 ml, 7000 ml, 4000 ml, 9000 ml, 12000 ml

500 ml, 250 ml, 750 ml, 100 ml, 200 ml, 300 ml, 800 ml, 3750 ml

275 ml, 3629 ml, 2530 ml, 5036 ml, 52 ml, 7 ml

3.269 l, 0.629 l, 2.014 l, 16.141 l, 0.076 l, 0.127 l

2 l, 4 l, 5 l, 4 l, 7 l, 2 l

770 ml, 350 ml, 620 ml, 809 ml, 680 ml, 38 ml

<, =, >

<, >, >

=, =, >

3. How Much Water is Left?

Children can practise reading scales with different divisions and work out where the measurements go on them. They will also be able to take away by counting on and check their results by carrying out the inverse operation.

Prior to attempting this activity it is assumed that teachers will have completed whole class activities involving reading scales. Children should be instructed to first draw arrows to the two numbers given in the problem so that they can then work out the difference between them.

How Much Water is Left? answers

1. 1.250 l
2. 9.250 l
3. 149.5 l
4. 480 ml
5. 2.750 l
6. 3 l

4. Water Meter Readings

If your school water meter is accessible to pupils they can be shown how to make readings over a period of time. The data can be used in calculating average water consumption and estimating annual use. It will also show that water is used even when the school is closed at the weekend.

It is important that the children are given the opportunity to compare the amount of water used before and after a whole school water saving campaign. Your school might wish to consider setting a target for a reduction in water consumption. Perhaps an incentive might be offered that money saved in the first year would be spent on something requested by the children, that the school would otherwise not be able to afford.

5. Leaky Taps Problems

This problem page illustrates how much water can be wasted from dripping taps around the school or home. Children should read the problems carefully and decide which mathematical operations are required to find the answers, showing all their workings. On completion they could try making up their own problems from the pictures.

Leaky Taps Problems answers

1. 600 l
2. 6 people

3a. 360 l

3b. 60,480 l

4. 28,800 l
5. 1140 l
6. 2394 l

Further Support

***Help us to beat the drought* – assembly pack – FREE**

As part of our ongoing campaign to encourage everyone to make small changes to their lifestyles to help save water, *The Water Wise Assembly – Help us to Beat the Drought* resource has been developed. Available free of charge, on request, the resource is most suitable for KS2 pupils but can be adapted to suit the requirements of older and younger pupils. The pack comprises all you need to prepare and present an entertaining and thought provoking assembly that facilitates and encourages pupil participation together with: pupil stimulus and task sheets including home based activity and curriculum linked follow-up activity suggestions on the themes of water for science, geography and history.

***Bag it and Bin it!* – cross-curricular resource – FREE**

Launched in September 2006, *Bag it and Bin it!* aims to educate primary school children about water, waste and related issues through a variety of fun, practical activities, linked to different areas of the curriculum, with a focus on Science, English and Mathematics. Like *Water Matters, Bag it and Bin it!* is designed to be used in conjunction with the Thames Water DVD, *'Aquabatics – An Introduction to the Water Business'.*

***Aquabatics* – An Introduction to the Water Business – FREE**

Aquabatics covers a range of water topics, including the water cycle, water treatment and distribution, the sewerage system and sewage treatment, amongst other areas. It can be used as a stand alone resource which can be viewed in one showing or in sections depending on the planned lesson focus. It can also be used in conjunction with the activities provided in the *'Bag it and Bin it!'* and *Water Matters* curriculum resources, enabling children to gain a deeper understanding of their own actions and how these can impact on the environment

To register to receive your schools free copies of these resources please call 0870 240 1640.

Liquid Assets

Thames Water is currently working closely with over 140 selected schools to carry out a water audit and to implement some of the recommended actions to help reduce their water consumption and so save money on their water bills.

Case studies of how these schools got on and how they managed to reduce their water consumption will be available on the Thames Water website from Spring 2007.

However, there are many straightforward water efficiency measures that could be implemented quickly and easily by any school, for little, if any financial outlay.

Community Speaker Programme

If you would like the opportunity to find out more about Thames Water and what we do, we can offer you the chance to meet a member of the team through the Community Speaker Programme. Our specially trained employees would be delighted to come to your school and work with you and your pupils in providing fun sessions on a range of issues to do with the water business, including:

- The Water Cycle and Water Treatment
- World Water Issues and the Environment
- WaterAid, the principal charity supported by Thames Water, which works with communities across Africa and Asia to provide safe water, sanitation facilities and hygiene education.

To arrange a visit from a Thames Water speaker, please email education@thameswater.co.uk. To avoid disappointment we would ask for a minimum of 4 weeks notice.

Feedback

Feedback from schools is always very welcome at waterefficiency@thameswater.co.uk

What is a Litre?

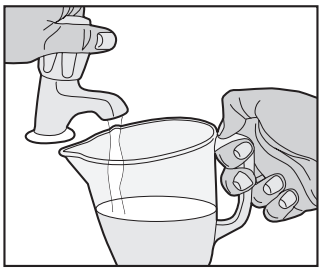
This is a fun, practical activity that involves using water. Think about what you will do with the water after you have finished, so it is not wasted. You could water the school plants inside and outside or maybe wash the paint pots with it.

Work in groups.

You will need:

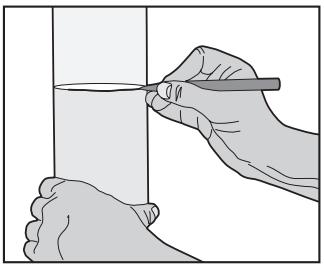
- One plastic bottle (1.5 or 2 litre)
- Permanent marker
- Scissors
- Measuring jug
- Selection of small containers (egg cups, jam jars, ice cream and margarine tubs, plastic cups etc)
- Bucket

How to make your litre container:

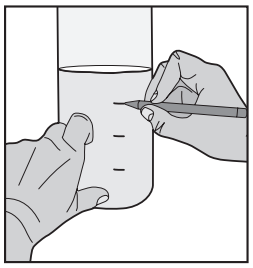


1. Fill the measuring jug with water to exactly the one litre mark.

2. Pour the litre of water into the plastic bottle.



3. Draw a line with the permanent marker all the way around the bottle to show one litre.



4. Estimate and mark where ½ litre (500ml) should be.

5. Now do the same for ¼ litre (250ml) and ¾ litre (750ml).

6. Pour the water into another container.

7. Ask an adult to cut into the bottle 5cms above your 1 litre line with a sharp knife.

8. You can now use the scissors to cut safely around the bottle.

What comes next?

Estimate how much water each of your containers will hold and then measure the amount using your cut-off measuring bottle.

Record your results in a table.

Container	Estimate	Measurement
Jam Jar		
Plastic cup		

Challenge other members of your group to:

a. Choose 2 different containers that will get close to the one litre mark.
b. Try this with 3 different containers.
c. Estimate and then measure how many egg-cups of water fill the plastic cup.
d. Estimate and measure how many litres of water will fill the bucket.

DON'T FORGET – at the end of the lesson find a good use for the water.

Water Matters

Metric Conversions – Capacity

1000 millilitres = 1 litre

How many millilitres in:

1 litre	2 litres	7 litres	4 litres	9 litres	12 litres

½ litre	¼ litre	¾ litre	1/10 litre	1/5 litre	3/10 litre	4/5 litre	3 ¾ litres

Change to millilitres:

0.275 litre	3.629 litres	2.530 litres	5.036 litres	0.052 litre	0.007 litre

Change to litres:

3269 ml	629 ml	2014 ml	16141 ml	76 ml	127 ml

Write these to the nearest litre:

2.437 litres	3.670 litres	5230 ml	3 ½ litres	6 9/10 litres	1 3/5 litres

What must be added to make them up to 1 litre?

230 ml	650 ml	380 ml	191 ml	320 ml	962 ml

Use the signs > , < and = to show which is the larger amount:

1.2 litres _____ 1241 ml	3.400 litres _____ 3 2/5 litres	807 ml _____ 0.087 litres
¾ litres _____ 752 ml	2.150 litres _____ 2050 ml	8.070 litres _____ 870 ml
50 ml _____ 0.050 litres	800 ml _____ 4/5 litres	¾ litres _____ 0.6 litres

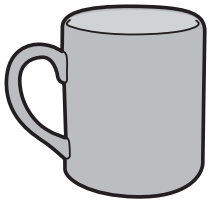
Water Matters

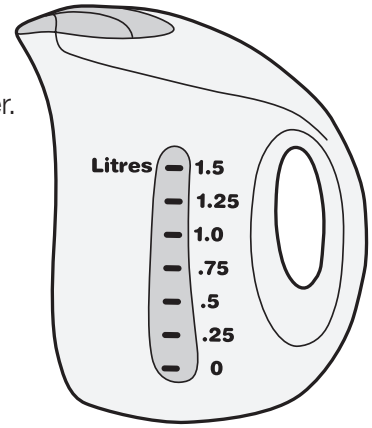
How Much Water is Left?

Tip!

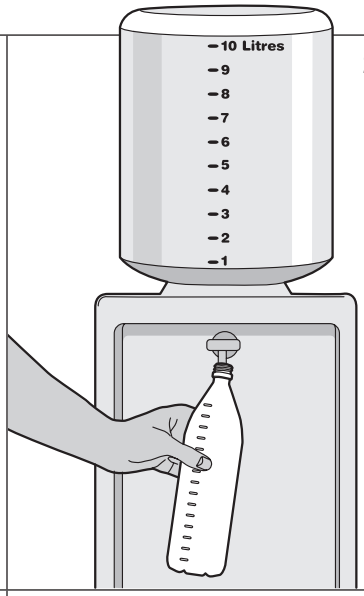
- First, draw arrows to the two numbers given in each problem.
- You may need to estimate where some of these numbers are.

1. The kettle holds 1.5 litres of water. Your teacher's mug holds 250ml of water. After filling the mug, what is left in the kettle?

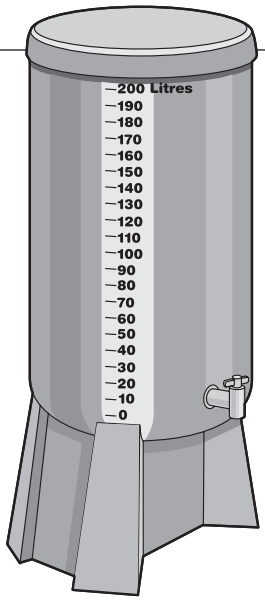




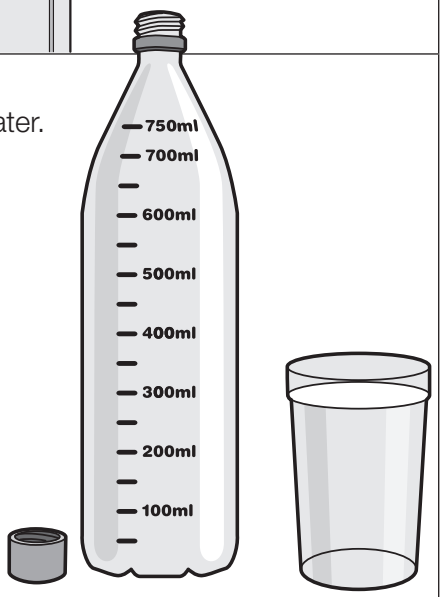
2. Water dispensers hold 10 litres of water. If you fill your 750ml bottle with water what is left in the dispenser?



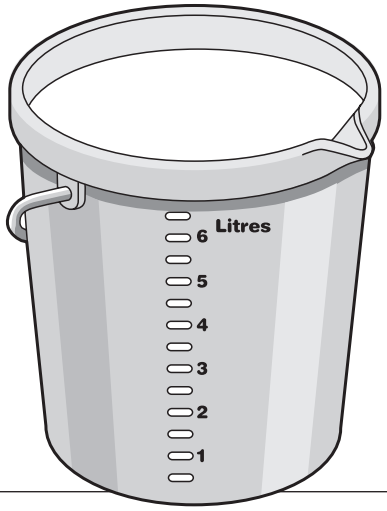
3. The water butt holds 200 litres of water. 50.5 litres is used to water the school garden. What is left?



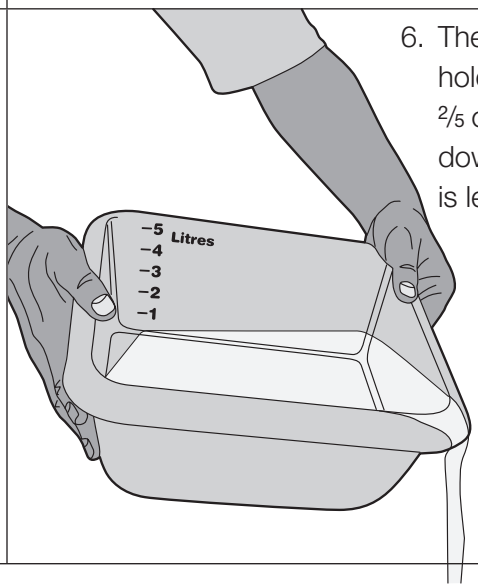
4. Your water bottle holds 750ml of water. You drink 270ml. What is left?



5. The bucket holds 6.5 litres of water. 3.75 litres of it are used to wash out the paint pots. How much water is left?



6. The washing-up bowl holds 5 litres of water. $\frac{2}{5}$ of that is poured down the drain. What is left?



Water Matters

Water Meter Reading

The water coming in to your school flows through a pipe. The amount of water travelling through the pipe is measured with a water meter. The meter has numbered dials which slowly turn to give a reading. It will look something like this:

0	**3**	**4**	**6**	**8**	**5**	**2**

Thousands of litres of water Hundreds of litres

= three hundred and forty six thousand eight hundred and fifty-two litres

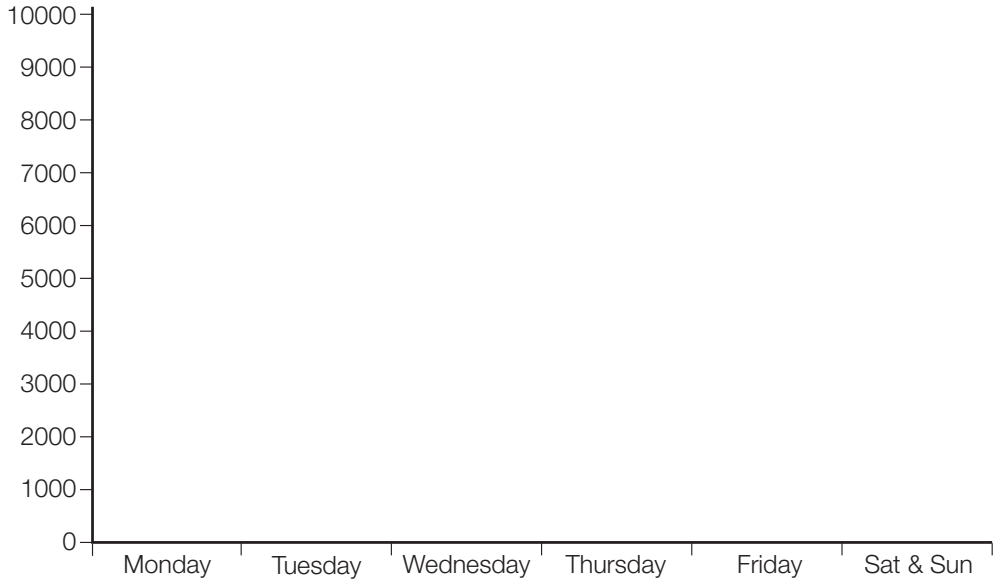
1. To fill in the table below you will have to read the school's water meter every morning at the same time for a week. Your teacher or caretaker should be with you when you take the reading. **Please note – safety must come first.** Do not try to access or read the school's water meter without your teacher or caretaker.

   Work out how much water was used each day and complete the last column.

Days of the week	Reading at start of day	Reading at start of next day	Water used in litres
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday & Sunday			

2. Use the information in the table above to draw a bar graph to show how much water was used each day in your school. Don't forget to give it a title and label the axis.

   a. Why do you think less water was used over the weekend?
   b. Find out why water was used on Saturday and Sunday.
   c. How much water did the school use in the week?
   d. Estimate how much water the school would use in a month/year.



Water Matters

Leaky Taps Problems

Some taps leak. This wastes water. If you see a tap leaking an adult should be told so that the leak can be fixed and the tap can work properly again. Read the questions below carefully. Some may require two (or more) steps/ operations before you reach your answer.

1. A dripping tap can waste 20 litres of water per day.

If there were 6 dripping taps in your school, how much water would be wasted in one school week? (5 days)

2. A 3mm stream of water from the tap wastes 919 litres per day.

The average person in the UK uses 160 litres a day. How many people could have used this wasted water? (Round to the nearest whole number).

3. A tap left running wastes 8,640 litres of water a day.

a. How much water is wasted per hour?

b. How much water is wasted in a whole week? (7 days)

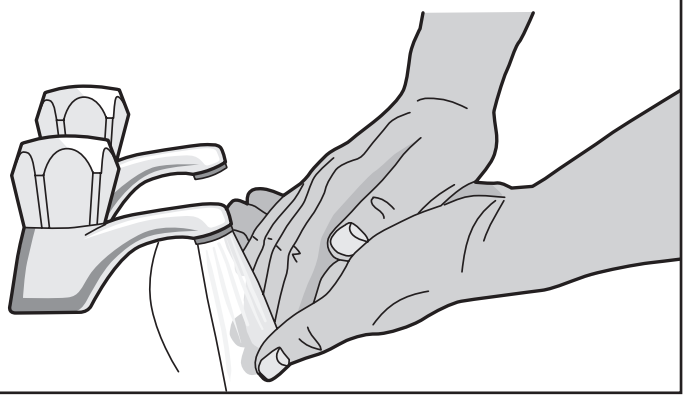
4. A 5mm stream of water from a tap wastes 1,440 litres of water per day.

To stop this problem, push taps could be fitted. If 4 taps were left like this over 5 days, how much water could have been saved if push taps were fitted?

5. Every time you flush the toilet in school it uses 9 litres of water. By fitting a save-a-flush this can be reduced to 8 litres of water. In a school of 285 children who each use the toilet 4 times a day, how many litres of water would be saved?

6. 70% of the water used for washing hands could be saved if spray taps were fitted in the children's toilets.

If 3420 litres of water was used for hand washing in a day, how much water would be saved by fitting spray taps?



Water Matters

School Water Survey

Name _____

Be a Water Detective and find out where water is going down the drain unnecessarily in your school. For some of the answers to these questions you will need to speak to the school caretaker and someone who works in the canteen. You should also get permission to visit different places where there are sinks around the school!

1. Did you spot any taps which had been left running?
   In classrooms ☐ ☐ ☐ ☐ ☐ ☐ ☐
   In cloakrooms ☐ ☐ ☐ ☐ ☐ ☐ ☐
   In the canteen ☐ ☐ ☐ ☐ ☐ ☐ ☐
2. Did you spot any dripping taps?
   In classrooms Yes ☐ No ☐
   In cloakrooms Yes ☐ No ☐
   In the canteen Yes ☐ No ☐
3. Does the canteen always load the dishwasher fully before using it?
   Yes ☐ No ☐
4. Do the canteen staff put the plug in when washing vegetables?
   Yes ☐ No ☐
5. Have 'save-a-flush' bags been fitted to toilet cisterns?
   Yes ☐ No ☐
6. Do the urinals in the boys' toilets flush all the time, even when the school is closed?
   Yes ☐ No ☐
7. Is there a water butt for collecting rainwater to water plants?
   Yes ☐ No ☐
8. Did you see any other places where water was being used or wasted? Use the other side of this sheet or another piece of paper if you need to.

_____

_____

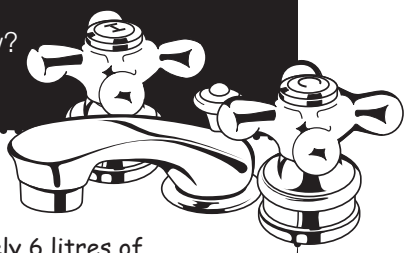
_____

_____

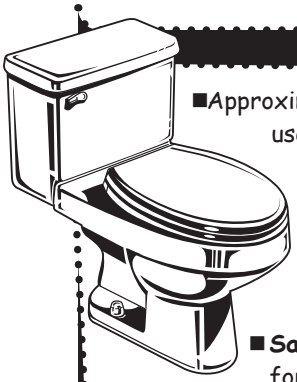
- Use the results of your survey to identify where water could be saved.
- Can you use the results to estimate how much water is being used or wasted?

Water Matters – **Facts**

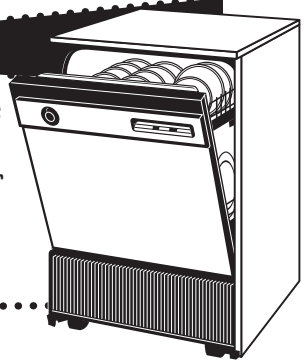
Did you know?



- A running tap can use approximately 6 litres of water per minute.
- A dripping tap can waste up to 20 litres of water a day.



- Approximately $^{2}/_{3}$ of the water used in schools is flushed down the toilet.
- Every time you flush the toilet you use around 9 litres of water.
- **Save-a-flush** is designed for use in toilet cisterns and **saves one litre of water (by displacement) per flush**. It does this without impairing the proper working of the cistern or harming the plumbing or effecting water quality.

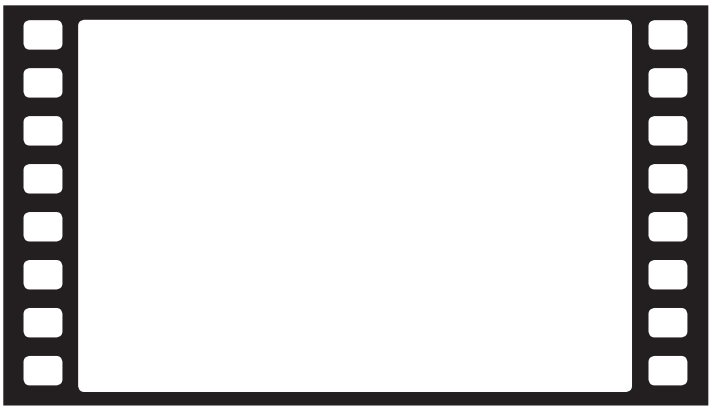


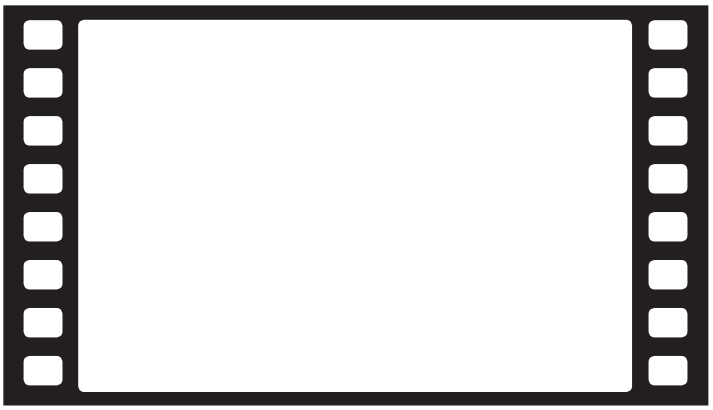
- A dishwasher uses 20 litres of water per cycle, whether it is full or not.

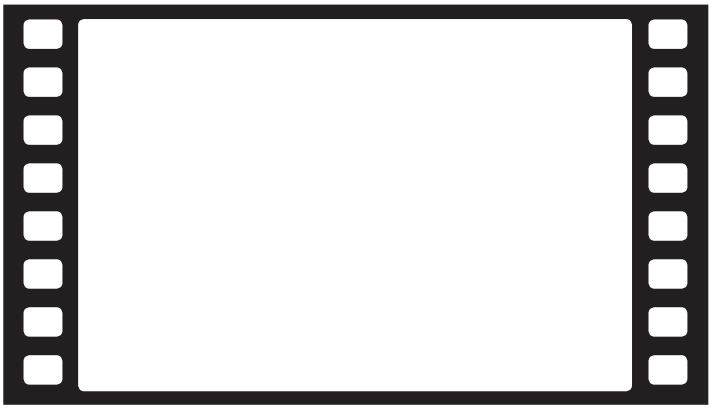
Water Matters

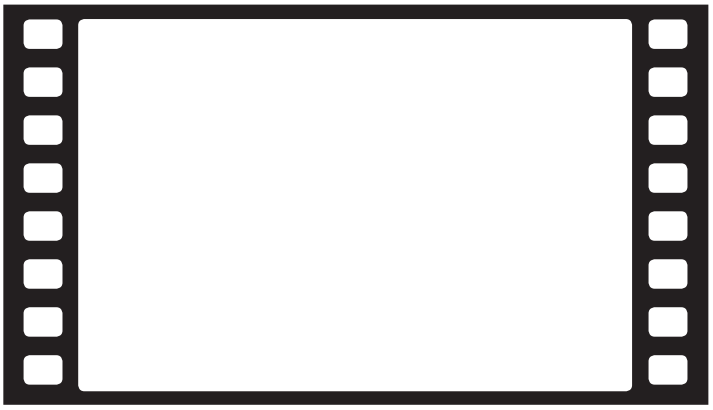
Television Storyboard

Name _____









Water Matters

Newspaper Report Plan
(Part 1)

Name _____

Headline (7 words max, key points, alliteration, pun if appropriate)

Who is the report about?

What is the report about?

Where did it happen?

When did it happen?

Why did it happen?

How did it happen?

Water Matters

Newspaper Report Plan
(Part 2)

Use this page to put your ideas into order and make detailed notes on the information you want to include in your report.

Lead Paragraph: a short summary of what has happened. Remember to include all the 'W's' (who, what, when, where and why?)!

Body: more detail about the 'W's'. Which are the most important? Remember to use facts, quotes and eye witness accounts.

Illustration and Caption: briefly describe what you will include in your illustration and write a snappy caption to go with it.

Water Matters

Dear Parent/Carer

Water Matters!

This term we have been learning about the value of water and considering the ways we can help to conserve our precious supplies. It would be really helpful and, we hope, interesting for you too, if you would support your child in completing our Water Matters Quiz.

This work is part of a wider programme about water, supported by Thames Water.

Thank you for your help and support.

Water Matters Quiz

Put your water knowledge and numeracy skills to the test by completing this challenging quiz. If you're not sure of an answer, visit the Thames Water website www.thameswater.co.uk for more information.

1. Which of the following uses the most water?
   a. 10 toilet flushes ☐ b. 30 minutes using a hose pipe ☐
   c. a dripping tap for a week ☐

2. The average person in the Thames Water area uses 160 litres of water a day. What is the average use per person in developing countries which don't have a good water supply?
   a. 100 litres ☐ b. 50 litres ☐ c. 20 litres ☐

3. If we had to fetch and carry our own water for a day, how many 5 litre buckets would we need to carry?
   a. 100 buckets ☐ b. 32 buckets ☐ c. 25 buckets ☐

4. How many 5 litre buckets would someone in a developing country need to carry for their daily use?
   a. 4 buckets ☐ b. 10 buckets ☐ c. 15 buckets ☐

5. A dripping tap wastes 140 litres of water a week. How much water is wasted for the 5 days you are at school?
   a. 50 litres ☐ b. 75 litres ☐ c. 100 litres ☐

6. If a tap is left full on for a day it will waste 8,640 litres of water. How many days' water is that for someone in the UK?
   a. 10 days ☐ b. 54 days ☐ c. 30 days ☐

7. How many days water is that for someone in a developing country?
   a. 432 days ☐ b. 175 days ☐ c. 200 days ☐

8. A urinal flush uses 9 litres of water every 20 minutes. In the 6 hours you are at school that is 162 litres of water. How much water could be saved in those 6 hours if it flushed every 30 minutes instead?
   a. 20 litres ☐ b. 45 litres ☐ c. 54 litres ☐

9. How much water would this save in the 30 hours you are at school each week?
   a. 200 litres ☐ b. 270 litres ☐ c. 300 litres ☐

10. If a bath holds 80 litres of water, how much water would you save by having a 5 minute shower instead? The shower uses 7 litres of water per minute.
    a. 45 litres ☐ b. 20 litres ☐ c. 100 litres ☐

Water Matters

Our planet Earth has no new water. The water we have is always on the move in a never-ending cycle. We need to take care of what we already have because **every living thing needs water to survive.**

Let's see how much water your family uses around the home and garden in the course of a week.

Write the correct number in the following questionnaire, for a day, then a week. By doing this you will find how much water you use and think about ways that you can conserve our dwindling water supplies and use water wisely.

Example: There are 4 people in your family

Question	Answer per day	Answer per week	Average litres per activity	Litres my family uses per week
How many baths does your family take in a day/week?	4	4 x 7 = 28	An average bath uses 80 litres of water	28 x 80 litres = 2240 litres per week

How many people live in your home? _____ Remember to include all the members of your family.

Question	Answer per day	Answer per week	Average litres per activity	Litres my family uses per week
1. How many baths does your family take in a day/week?			80 litres per bath	
2. How many showers does your family take in a day/week?			35 litres per shower	
3. How many times is your toilet flushed in a day/week?			9 litres per flush	
4. In total how many times a day/week do all your family clean their teeth? a) With a tap running b) Without a tap running			 6 litres per minute 1 litre	
5. How often is your kettle filled in a day/week?			1.5 litres per kettle	
6. How often in a day/week does your family fill a glass/cup with water from the tap?			0.25 litres per cup/glass	
7. How often in a day/week is your washing-up bowl in the sink filled with water?			5 litres per bowl	
8. How often is your dishwasher used in a day/week?			20 litres per load	
9. How often is your washing machine used in a day/week?			65 litres per load	
10. How often is your garden watered in a day/week? a) With a watering can filled from the tap? b) With a watering can filled from the butt?			 4 litres per full can 0	
11. How often are the cars/caravans washed in a day/week? a) Using a bucket of water from the tap? b) Using a bucket of water from the butt?			 5 litres per bucket 0	
			Total	

For more information about Thames Water's Education Programme visit **www.waterinschools.com**