Ofwat PC report:

Number of children / students engaged by the Education Team

Wessex Water
YTL GROUP

FOR YOU. FOR LIFE.

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Number of children / students engaged by the Education Team

1 Definitions of PC

1.1 Definitions

1.1.1 Source

Ofwat PR19 final determinations: Wessex Water – Outcomes performance commitment appendix

1.1.2 Purpose

This performance commitment incentivises the company to increase the number of children/students engaged by its education programmes.

1.1.3 Benefits

Education programmes can help to improve demand management and reduce incidents resulting from the disposal of inappropriate waste into the sewers by customers.

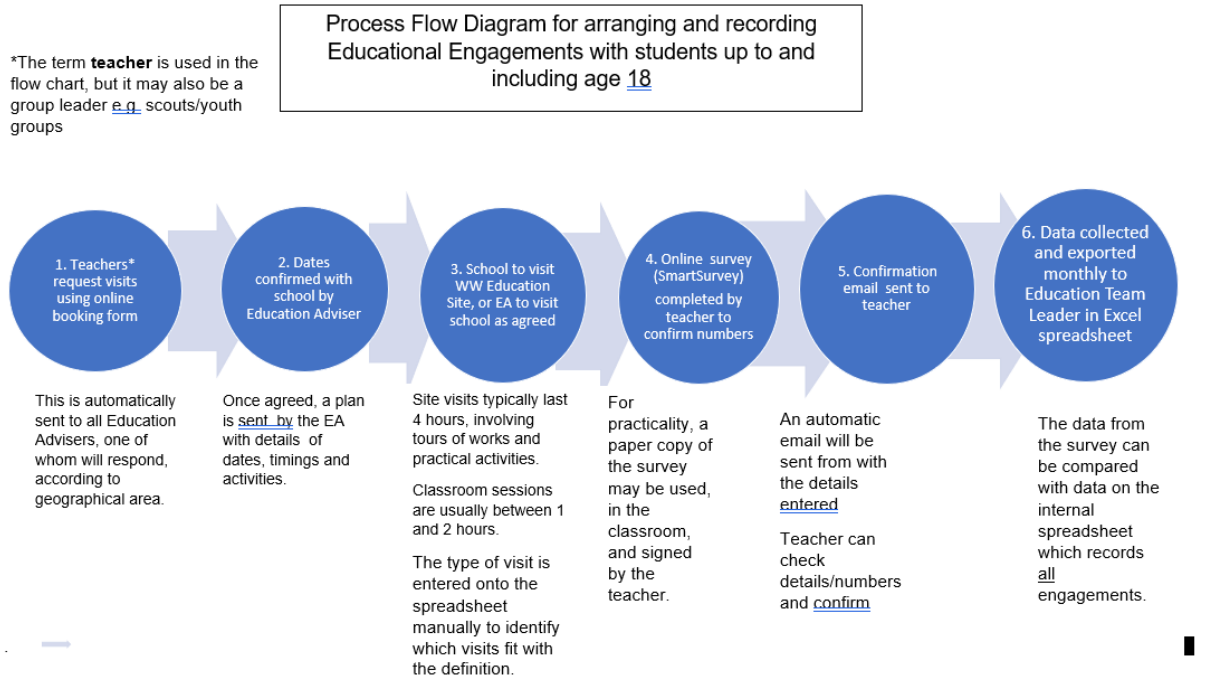
Figure 1

Unique Reference	PR19WSX_C3
Detailed definition of performance measure	The number of children/students who have engaged in person with the following: • visits by children/students to the company's education centres and operational sites; • visits by the company's education team to schools and colleges; or • community projects organised by the company involving children/ students. Children/students are defined as those individuals up to and including 18 years old, who are in education. For a student to be considered as engaged, a minimum of 20 minutes of engagement will be undertaken. Details of each engagement will be recorded electronically and 'signed off' by a teacher from the appropriate institution. The maximum number of children that can be recorded in one engagement is 30.
Additional detail on measurement units	None
Specific exclusions	Children/students engaged for less than 20 minutes and people over the age of 18. Children/students who have been engaged in previous years by the company will not be counted.
Reporting and assurance	The company will, at least once during the five year period, publish a report to assess the benefits resulting from the performance commitment, as far as possible based on primary evidence. This will include the relative success of different activity types and approaches. The company should also consider ways to share learning with other companies and wider stakeholders.
Measurement unit and decimal places	Number of children/students to zero decimal places.
Measurement timing	Reporting year

2 Activities and approaches

The diagram below shows the process of engaging with schools and groups

Figure 2



As part of the engagement process, teachers and group leaders are required to complete a survey to ratify numbers and activities, as well as give a satisfaction grade. Within the company, we aim to achieve 95%+ grades of **excellent or good** (top 2 of 4 grades) and we have exceeded this in recent years with 99%+ achieving the top two grades and the vast majority of these being graded excellent.

This shows that the engagements are very well received by schools and groups and many groups build our visits into their curriculum planning.

Details of the specific approaches/types of visit adopted and their relative success, are shown below.

2.1 Site visits

We encourage schools and groups to visit our Education Centres whenever possible, as experience shows that these engagements have the most impact on students learning and therefore are most likely to have a lasting impact on behaviours such as water efficiency and sewer misuse prevention. We have had adult helpers comment on their own experiences of visits from many years previous and how they were both memorable and had an impact on their understanding/behaviours.

These engagements do, however, require a significant commitment from the Education Team and the school/group in terms of both time and financial cost. Schools have to pay coach/transport costs and take a whole day, usually, from their timetable. The latter is especially difficult for Secondary schools, due to timetabling, so the majority of visits involve Primary age pupils.

The cost to Wessex Water is also higher, as a second person will support the lead organiser, in order to conduct tours in manageable groups of 10-15.

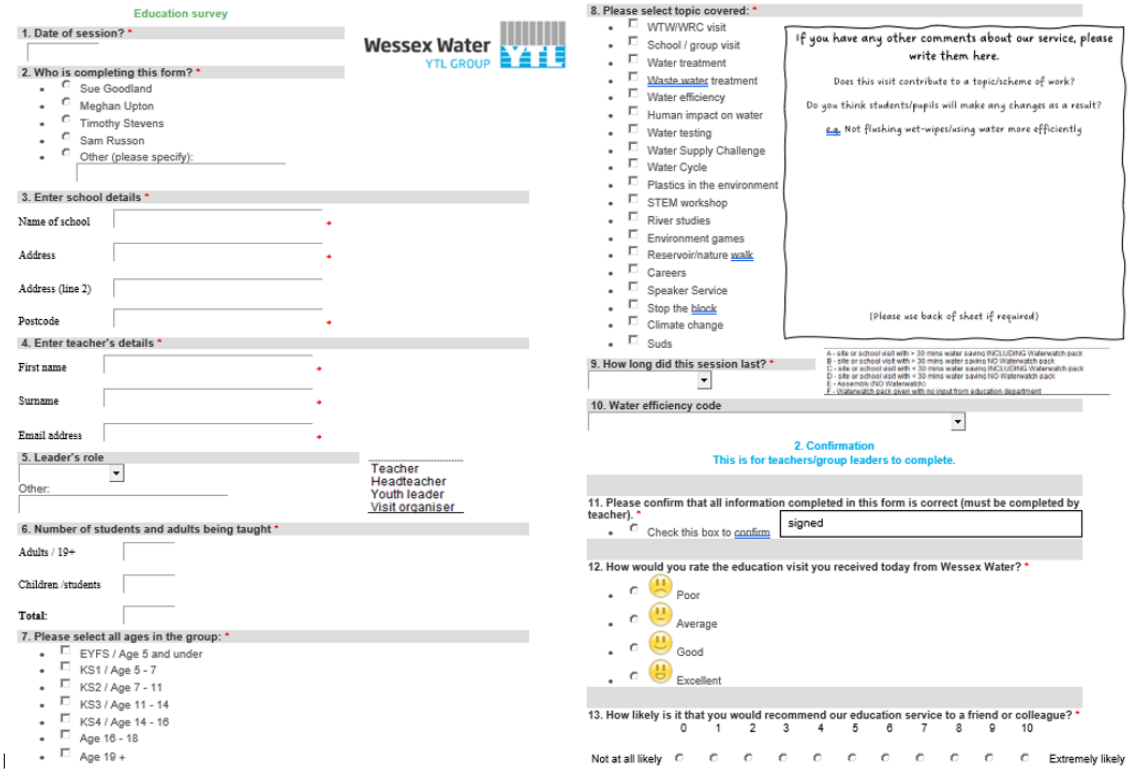
There are **eight sites** equipped to host school groups – **five at Water Recycling Centres** (sewage treatment) and **three at Water Treatment Works/Reservoirs**.

Facilities at our education centres will also restrict numbers, generally to one class of 30 at a time, and a typical day will last around 4 hours. This will comprise an introduction to the site and Wessex Water's role in treating water/wastewater and a tour of the site to see the processes in action. We then usually carry out a practical activity, either in the classroom, or some sites allow opportunities for fieldwork such as river studies or environmental investigations.

Some groups may decide to reduce the visit to around two hours, possibly bringing one group in the morning and another in the afternoon, but this is infrequent.

Feedback on the engagement is through a survey, using an outside company, SmartSurvey. This may be directly entered onto an iPad, or may be completed on a paper copy (below) and entered later. Paper copies are signed by the group leader and retained as evidence.

Figure 3 - Paper version of the survey completed and signed by visit organiser



Education survey

1. Date of session? *

Wessex Water
YTL GROUP

2. Who is completing this form? *
- Sue Goodland
- Meghan Upton
- Timothy Stevens
- Sam Russon
- Other (please specify):

3. Enter school details *

Name of school *
Address *
Address (line 2)
Postcode *

4. Enter teacher's details *

First name *
Surname *
Email address *

5. Leader's role

Other:

Teacher
Headteacher
Youth leader
Visit organiser

6. Number of students and adults being taught *

Adults / 19+
Children /students
Total:

7. Please select all ages in the group: *
- EYFS / Age 5 and under
- KS1 / Age 5 - 7
- KS2 / Age 7 - 11
- KS3 / Age 11 - 14
- KS4 / Age 14 - 16
- Age 16 - 18
- Age 19 +

8. Please select topic covered: *
- WTW/WRC visit
- School / group visit
- Water treatment
- Waste water treatment
- Water efficiency
- Human impact on water
- Water testing
- Water Supply Challenge
- Water Cycle
- Plastics in the environment
- STEM workshop
- River studies
- Environment games
- Reservoir/nature walk
- Careers
- Speaker Service
- Stop the block
- Climate change
- Suds

If you have any other comments about our service, please write them here.

Does this visit contribute to a topic/scheme of work?

Do you think students/pupils will make any changes as a result?

e.g. Not flushing wet-wipes/using water more efficiently

(Please use back of sheet if required)

9. How long did this session last? *

10. Water efficiency code

2. Confirmation
This is for teachers/group leaders to complete.

11. Please confirm that all information completed in this form is correct (must be completed by teacher). *
- Check this box to confirm

signed

12. How would you rate the education visit you received today from Wessex Water? *
- Poor
- Average
- Good
- Excellent

13. How likely is it that you would recommend our education service to a friend or colleague? *

0 1 2 3 4 5 6 7 8 9 10

Not at all likely Extremely likely

Within the surveys we have introduced an optional comments box in order to gain additional feedback as to the likely impact of our engagements on students learning and possible behaviour changes.

Smartsurvey send a summary of the data every month, and this is cross-checked with a record kept within the company.

2.1.1 Case studies

Here are some case studies, which give evidence of the impact of our site visits.

Case Study 1	***Home School group***
Engagement Type:	***Christchurch WRC visit and workshop***
Age Group/Number:	*8-14*
Content:	*Teaching on water supply/wastewater* *Tour of WRC to observe wastewater treatment process* *View microscopic organisms used in activated sludge* *Practical STEM activity (Flushing toilet paper/wet-wipes,etc)*
Feedback and Comments:	*Education rating** ***Excellent*** *Hi Tim and Paul,* *I just wanted to send a huge thank you for the wonderful educational field trip today! The kids had an absolute blast, and all they could talk about on the way home was how much they learned and how amazed they were by the engineering behind water recycling. They were so impressed by the entire process and kept marveling at how perfectly everything works together. It really left a lasting impression on them!* *You both did such an incredible job making the tour engaging and informative, and I truly believe we might have some potential future civil engineers in the group after today's experience! Your enthusiasm and dedication to getting the next generation excited about water recycling and STEM really shone through, and we are so grateful for it.* *Thanks again for all your hard work and for providing such an enriching day for the kids. You're doing an amazing job, and we really appreciate everything you're doing to prepare the next generation for the future!* *Best regards,* *Natacha*

Case Study 2	***Queen's College, Taunton, Somerset***
Engagement Type:	***School visit to Ashford WTW/Reservoir***
Age Group/Number:	*Year 5 (9-10 year olds) x 60*
Content:	*Understanding how water is cleaned before it reaches their taps, a tour of the reservoir to see the abundance of wildlife and the human impact on the environment, testing the quality of the river water.*
Feedback and Comments:	*Education rating** ***Excellent*** *An excellent trip to support our geography, science and English curriculum.*

Case Study 3	***Kingdown School, Warminster, Wiltshire***
Engagement Type:	***Water Recycling Centre Visit (Saltford)***
Age Group/Number:	*Yr 12 (A level) – 0 pupils*
Content:	*Water Supply/Wastewater Treatment* *Water supply in the future* *Sewage simulation/Storm overflow model* *STEM activity – Infiltration experiment*
Feedback and Comments:	*Education rating** ***Excellent*** *Session was pitched at the correct level and content was relevant to specification. Sam was enthusiastic and knowledgeable. Good range of theory and practical content. Relevant and up to date à SUDs. Contributes to Edexcel A level Geography 'Water Cycle and Water Insecurity'" ..lifestyle changes…"Yes – A better awareness of water use and waste"*

**How would you rate the Education visit you received? (Poor/Average/Good/Excellent)*

If it is impractical/too costly for groups to visit our sites, an Education Adviser will visit the school/group and deliver a presentation including a practical activity.

2.2 School and youth organisations visits

The Education Team have developed a suite of STEM activities that can be used in the classroom, designed to communicate key messages relating to water supply/efficiency and wastewater treatment/protection of rivers and seas.

Water Supply/efficiency:

- **Making water filters** – using sieves, sand and activated carbon filters to model water treatment processes
- **Dripping Tap** – a practical mathematical activity calculating the amount of water that would be wasted in a year
- **Water Uses** – for younger children, a game to guess how we use treated water for a variety of activities such as washing, cleaning, flushing toilets, watering plants, etc.
- **Water Challenge** – students use a kit to design and make a water supply network for a fictional region

Wastewater Treatment/Protection of rivers and seas:

- **Shake Test** – comparing the properties of toilet paper, tissue paper, wet-wipes, etc when 'flushed' by shaking them in pots of water and examining results
- **River sampling simulation** – an activity where students can collect invertebrate data from different stages of a river to explore potential sources of pollution
- **Smelly water** – students observe and smell prepared water samples to explore how water can be contaminated by detergents, food waste, human waste etc

These practical activities are given a context by introducing them with a summary of the role of Wessex Water as a water company. The sessions are also concluded with key points derived from the activities and other relevant messaging.

A typical classroom session will last between 60-90 minutes, with 30-45 minutes involved in practical activities, but we tailor lessons to each engagement and sessions may be a little shorter, especially with younger children/pre-school groups, whereas older groups may be involved for 2 hours in the Water Challenge activity.

The choice of activities will depend on a number of factors and is negotiated between the teacher/group leader and the Education Adviser organising the engagement. These are the key factors:

- **Is the group located in our supply area/wastewater area or both?** Large parts of our region are wastewater only, with water supply being provided by Bristol or Bournemouth water.
- **School/group request** – when booking, groups can enter topics/themes which will suit them best according to National Curriculum objectives/Scout awards, etc
- **Age group** – we provide a wide range of activities, some which are suitable for younger children and others that will challenge older students.
- **Type of group** – as well as schools, we deliver sessions to scouts and youth organisations, home-school groups, etc.

2.2.1 Case studies

Further case studies providing evidence of the impact of our school and youth organisation engagements follow.

Case Study 4	***Nursery - Meghan***
Engagement Type:	***EYFS visit***
Age Group:	*Pre-school*
Content:	*Water efficiency. Flower power investigation.* *EYFS certificates left after the session where the children need to complete some tasks e.g. turning off taps, re-using water etc to earn a sticker for their certificate.* *'How to make your own water butt' leaflet also left which staff informed me that they made with the children after my first session with them.*
Feedback and Comments:	*Following on from Meghan's sessions:* *The children talk about how we need to turn the taps off after washing their hands.* *We use water butts (that the children have made) to water the plants* *The flower power activity links well with our lifecycle and growing topic. The children really enjoy it.*

Case Study 5	***Corsham Pound Pill Primary, Wiltshire***
Engagement Type:	***School Visit***
Age Group/Number:	*Year 4 (8/9yo) 2 classes of 30*
Content:	*Water use/Wastewater to fit in with school topic 'What not to flush down the loo'* *STEM activity – Testing Toilet paper/wet-wipes,etc*

Feedback and Comments:	*Education rating* **Excellent*** *What a fantastic visit. Very informative, fun and interactive. Yes – it contributes to our scheme of work. Yes – they will make lifestyle changes'* *"Absolutely brilliant session. It was really interactive and all children got to join in. We all learnt so much. Sam had fantastic classroom presence and interacted so effectively with the pupils. Yes, we are studying 'What should you flush down the loo' Yes, they will talk to families about water use and what goes down the toilet and sinks"*

Case Study 6 ***Kings of Wessex Academy, Cheddar Somerset***

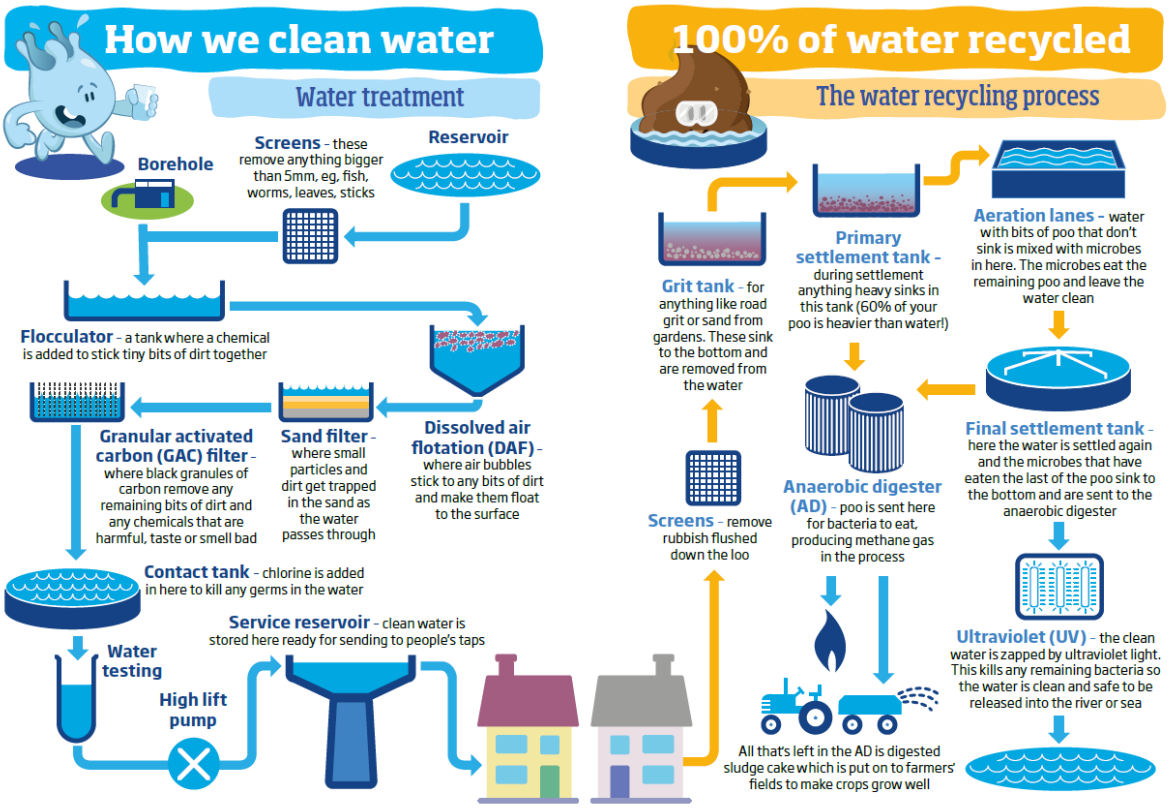
Engagement Type:	***School visit – Employability skills day***
Age Group/Number:	*Year 10 (14-15 year olds) x 107*
Content:	*The water supply challenge – designing, costing, building and testing a water supply system created by the students.*
Feedback and Comments:	*Education rating* **Excellent*** *Really interactive activity. Required problem solving from Students. Very impressive. Maths skills also!* *Fantastic session. Thank you so much.*

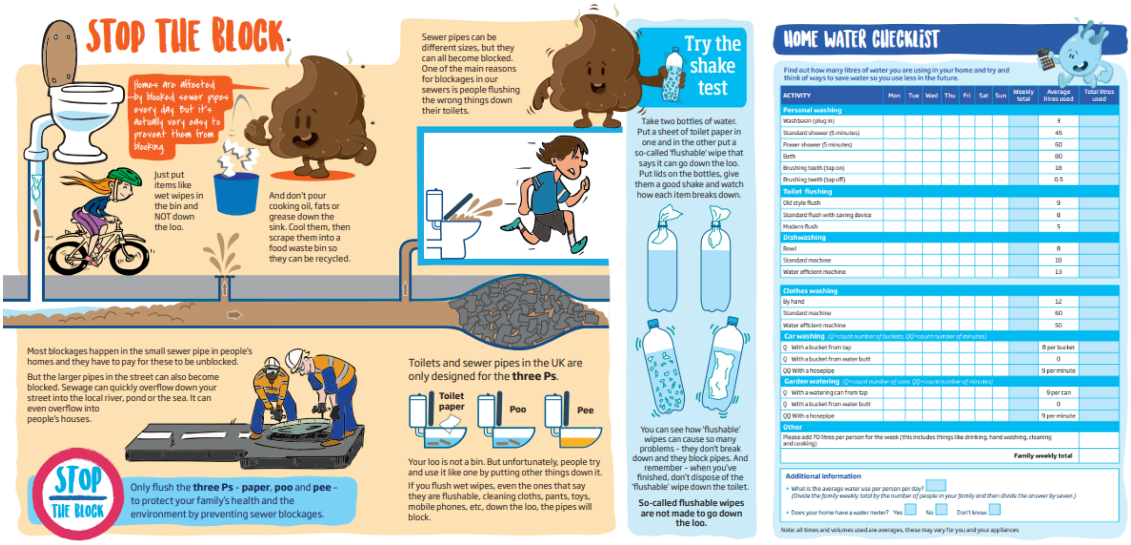
Figure 4 – Year 8 pupils engaged in the Water Challenge activity

To consolidate the pupils' learning we have a wide range of material such as bookmarks, stickers, worksheets and a booklet that can be taken home.

Figure 5 – Front and back cover of WOW booklet

Figure 6 - Selected pages from the WOW booklet





Water in a changing world

Climate change

Most scientists agree the world is warming due to greenhouse gases, such as carbon dioxide and methane which have increased in our atmosphere over the last 200 years as we burn coal, oil and gas.

Climate scientists predict that in Britain

- winters will be milder and wetter
- summers will be drier and warmer.

The warmer atmosphere increases the amount of water being evaporated and 'speeds up' the water cycle.

Heavy rainfall runs off fields and can carry soil and agricultural chemicals. These flow into rivers, reservoirs and underground aquifers that we use for drinking water.

Increased rainfall also flows into our sewerage systems and can cause them to overflow. This is especially true in towns and cities where gardens and green spaces have been paved over, so the water cannot percolate into the ground as easily.

The changing weather can also lead to hot, dry periods which can cause droughts, when there is very little rain to refill our rivers, reservoirs and aquifers. This can make it harder to provide enough water to supply all our customers.

What can we do?

Everyone has a role to play in helping look after our water in the future

At Wessex Water we make plans for up to 50 years ahead to ensure we can balance water supplies with water demands to ensure everyone has enough water, while also protecting the environment.

We can all use less water if we are careful and don't waste it. At the moment, one person uses around 150l / day in Britain. The government target is to bring this down to 120l/day, which would save millions of litres across the country.

SuDS are Sustainable Drainage Systems that trap rainwater and slow it from getting into rivers and sewers so quickly. This means the dirty water in our sewers stays in the sewers and does not overflow! Many SuDS are very simple and can be used in any garden to capture rainwater.

Saving water

Car wash wiser
Using a bucket instead of a hose = **8 litres** per bucket instead of **9 litres** a minute.

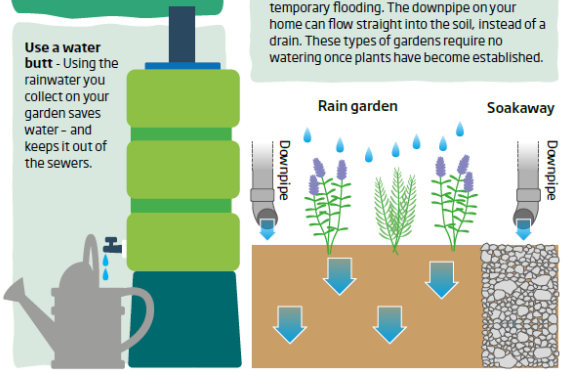
Shorter showers
Each minute less in the shower saves **9 litres**.

Reusing water
A lot of the water we use, can be reused again. For example, water used for boiling vegetables can be cooled down and used to water plants. Bath water can be used for cleaning.

Using SuDS to save water

Use a water butt - Using the rainwater you collect on your garden saves water - and keeps it out of the sewers.

Create a rain garden - A rain garden is a shallow area of ground, or a raised bed, of absorbent soil with plants that can handle temporary flooding. The downpipe on your home can flow straight into the soil, instead of a drain. These types of gardens require no watering once plants have become established.



3 Sharing with other companies / wider stakeholders

The Education team work with a wide variety of other organisations, to share best practice and to deliver messaging around water efficiency and wastewater treatment.

Water Forum – Education Teams from water companies across the country liaise through meetings and email via a Water Forum. This has allowed us to compare resources, discuss messaging around key issues and coordinate events such as World Toilet Day in November and World Water Day in March.

WaterAid – this charity has an education team and have shared resources.

Food and farming – the Education Team attend a number of annual events, which help children and students understand the importance of water treatment in supplying potable water, and its importance in food supply. Examples of this are:

- **Field to Food Learning Day**. Hundreds of children from local schools attend at the Bath and West Showground, We provide a short interactive presentation on water treatment to 12-15 groups during the day.
- **Melplash Show – Discover Farming**. Thousands of people attend this event every summer and the Education Team provide a stand to highlight the importance of water supply as a food product, and encourage water efficiency.
- **Public Shows/events** – the Education Team support the company in attending a variety of shows especially during holiday periods, when school visits are not occurring.

Figure 7 - The Melplash show – Discover Farming

Festival of Nature – we support this long-established and well-attended event in the Bath/Bristol area, aimed at encouraging understanding and care for the natural environment, including watercourses.

Science Fairs – we attend Science Fairs in Weymouth, Dorchester and Somerset, engaging with hundreds of children, to provide greater understanding of water treatment and associated issues.

Round The Bend Tours – Wessex Water has a programme of open days at our wastewater sites, where visitors can book a tour around the site. Education Advisers attend many of these and help with messaging especially linked to sewer misuse.

A key value with these events is that parents/grandparents and other adults attend with the children, so we are able to encourage responsible use of sewers through activities such as 'Sewer Surprise' and demonstrating the issue of flushing wet-wipes and other inappropriate items.

Drop-In days – as a team, we organise four days at sites where there is public access and areas of environmental interest, such as reservoirs and wetlands. These are advertised through social media and aimed at families, encouraging understanding of how we treat water and protect watercourses through wastewater treatment.

Figure 8 - A Drop-in day at Hawkridge Reservoir

Specific site visits – we also respond specifically to wider adult groups who are interested in water treatment, even though they are outside the children/student age definition. These include Bournemouth and Bristol Universities, Agricultural Colleges, U3A groups and other organisations such as the National Trust.

Comments from a Weston College Lecturer

I wonder if it could be noted that students on our BSc (Hons) Environmental Health courses visit the Bleadon Water Treatment Centre every year. We always receive a warm welcome, and the quality of the education provided by Sue Goodland is outstanding. Sue plays an important part in developing the Environmental Health workforce for the future.

Regards,

Mark Hardwick

BSc (Hons) Environmental Health programmes co-ordinator.

(Weston College)

Although these interactions do not fit the Performance Commitment definition, they do make a significant contribution to the company's messaging about demand management and disposal of inappropriate waste.