

KS3 teachers' guidance notes

About this resource

This 'Drop 20' for schools KS3 resource contains flexible teaching and learning materials to engage students in understanding the causes and consequences of drought; and to motivate them to get involved with the 'Drop 20' campaign to reduce their water usage by 20 litres a day.

The materials include:

1. An assembly in PowerPoint format - approximately 10 minutes long
2. A film - approximately five minutes long
3. Two 'Did you know?' fact files
4. This lesson plan
5. A unique thinking skills lesson in the form of a drought mystery
6. An interactive quiz game to reinforce learning
7. A student competition that runs over the summer holidays - the winner will enjoy a free day out at an Anglian Water park and a meal for four.

Don't miss the opportunity to enter your school in our free prize draw to win a free Anglian Water audit for your school and £500 towards the cost of the water efficiency measures highlighted in the audit. See the 'School Water Audit free prize draw' link at the bottom of the KS3 home page for your entry form.

Using the film

This short film introduces students to the main learning objectives about the nature and causes of drought in the East of England.

It includes interviews with Anglian Water employees who explain why the region is prone to drought, what Anglian Water does to make sure there is still enough water to go round, how leaks are detected and what we can all do to use water more efficiently.

You could show the film as part of an assembly and/or as the stimulus for classroom activities and discussions.

Talk about:

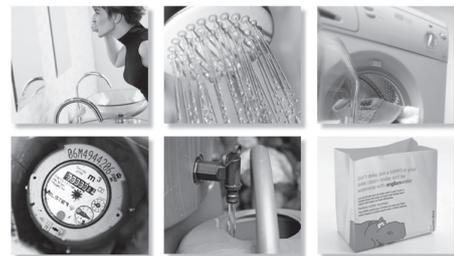
- What is a drought and why is the Anglian Water region so vulnerable to droughts and low water levels?
- What impact does a drought have on the local environment?
- How does water get from reservoirs into our homes?
- What is the main aim of the 'Drop 20' campaign?
- Can the students name at least one way they could reduce their daily water consumption?

Using the assembly

The assembly is eleven slides long, including the title slide. The slides cover the following areas which are developed in more detail in the lessons and fact files:

- What is a drought?
- How drought impacts on our lives.
- What Anglian Water does.
- What you can do.

What can I do to make a difference?



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Using the 'Did you know?' fact files

The fact files are presented in question and answer format. There are colour versions that could be shared as a class on an interactive whiteboard and also black and white versions, which could be printed out for students to use individually.

The fact files give more details about drought.

Fact file 1 focuses on what is meant by a drought:

- 💧 What is a drought? What are the different ways of defining a drought?
- 💧 How can there be water in the soil, but plants can't make use of it?
- 💧 How can a relatively dry winter cause a drought?
- 💧 Why was the drought of 1976 so difficult for everyone?

Fact file 2 focuses on what Anglian Water does - not just about drought:

- 💧 What does Anglian Water do?
- 💧 Where does our water come from and how is it moved around?
- 💧 How does our landscape make the job of Anglian Water more difficult?
- 💧 Why are there so many water and wastewater treatment works? What do they do?
- 💧 What does Anglian Water do about burst pipes and leaks?

Using the interactive quiz game

You could use the interactive game as a quick-fire, fun way of introducing the theme of water conservation and the 'Drop 20' challenge to a whole group via the whiteboard, or as an assessment tool to identify what the students now know having worked with the resources.

Students must answer six of the eight questions correctly in order to play part two of the game, a 'Pairs' card challenge.



Making the most of this lesson plan

There are four parts to the lesson, offering a menu of activities from which you can select those that best suit your class:

- 💧 What is a drought? - Starter
- 💧 How drought impacts on our lives - Main part 1
- 💧 What Anglian Water does - Main part 2
- 💧 What you can do - Main part 3

It is recommended that the Main part 3 - What you can do - is used as an introduction to Anglian Water's 'Drop 20' campaign.

The drought mystery lesson

(see separate PDF)

This is a thinking skills lesson, with extension questions to deepen students' understanding of the issues involved in a drought.

Students will need to label a diagram of the water cycle, with support from the *Drought mystery cards*, as appropriate.

Students will then read the cards thoroughly and work in groups so they can discuss the mystery question.

They have 21 cards of information. More able or older students may have the ability to devise four groups into which they classify the cards. Less able or younger students will need to be given the groups: (i) weather and water cycle, (ii) groundwater, (iii) water supply & (iv) water management.

After classification, students are encouraged to sequence the cards within each group to make connections and answer the mystery question.

There is feedback to the teacher and discussion before students stick the cards down to make a flow diagram, with explanations of the links along the connecting arrows. Further work could involve the students illustrating their flow diagrams.

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'Drop 20' competition for schools

Starter ideas

Anglian Water is keen to hear – and see – what creative ideas young people can come up with to reduce their water consumption – and that of their families and friends – by 20 litres every day.

We think young people are our best advocates and that they care as much as we do about the health and sustainability of the environment.

By entering the competition, students in our region have the chance to win a brilliant FREE day out at one of the Anglian Water parks and a meal for four at one of the on-site restaurants.

All they have to do is come up with an eye-catching slogan, poster, storyboard, photograph or even a short film to promote the idea of everyone committing to trying to reduce their daily water usage by 20 litres – or to offer their own ideas/inventions for saving water.

Entries should be sent to:

competition@anglianwater.co.uk

or by post to:

**Community Education Team, Anglian Water,
Ambury Road, Huntingdon, Cambs PE29 3NZ**

by **10 September 2012**.

There is also the chance for your school to enter a prize draw to win a free water audit from Anglian Water and £500 towards the water efficiency measures highlighted in the audit. Just fill in the entry form (at the bottom of the list of resources on the KS3 home page) and get your school into the prize draw today.

You could help the students to work on their ideas before the end of term and suggest they develop their work over the long summer holiday. Here are some ideas to get them started:

- 💧 Look again at the materials on this site and explore the 'Drop 20' concept. Look at the branding and key messages and ask for the students' response. Do they engage with the idea quickly? What appeals to them most?
- 💧 Get them to write or draw the first words, symbols or sketches that come into their minds about 'Drop 20'.
- 💧 Talk about who they want to influence with their campaign messages or water-saving ideas – teenagers, families or the wider community.
- 💧 Thinking about their chosen target audiences, what techniques and format might work best, e.g. a cartoon and edgy slogan for teenagers, or a 'viral ad' style storyboard, film or poster for the doctor's surgery for families, etc?
- 💧 Generate a list of key words and phrases, then ask the students to choose their favourites and integrate them into their draft designs or text ideas.
- 💧 Encourage them to work on their initial ideas over the summer, for example, by taking an archive of 'Drop 20' pictures on their mobile phones, making sketches of interesting objects or drawing and captioning scenes related to drought.

Curriculum links

These resources could be incorporated into units of work covering:

- 💧 The water cycle
- 💧 Weather and climate
- 💧 Farming
- 💧 Climate change
- 💧 Current environmental issues
- 💧 Earth science
- 💧 Geography in the news



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'Drop 20' lesson plan

Prior knowledge of the uses of water is assumed.

Before the lesson

- It would be helpful if laptops were available for the lesson or the ICT room booked. If neither is available, the ICT specific part of the lesson could be set for homework and reported back to the class later.
- Have a set of *Impact of drought* cards (page 6) available for each group to use in a ripple diagram, A3 pieces of paper with three or four concentric circles equally spaced and *Saving water* cards (page 7) ready for each group.

Four parts to the lesson

- Starter: What is a drought?
- Main part 1: How drought impacts on our lives
- Main part 2: What Anglian Water does
- Main part 3: What you can do.

Starter: What is a drought?

(Choice)

1. Elicit from students the definition of a drought. The definition and impact varies from country to country. Record answers on the whiteboard.

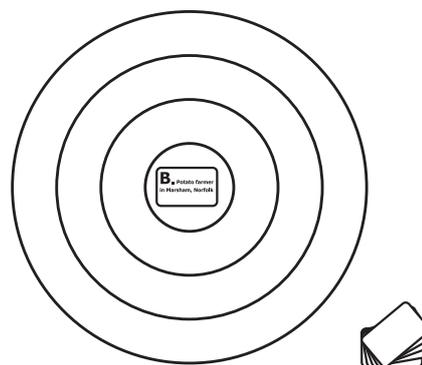
If you have access to laptops, or the ICT room, students could carry out research online. Alternatively, they could research the topic for homework and report back to the class in this starter session.

2. The film or assembly PowerPoint presentation, 'Drought!' could be used here to stimulate further ideas and encourage discussion.

Main part 1: How drought impacts on our lives

Group work

In groups, students will be using the *Impact for drought* cards (page 6) to create a ripple diagram. Provide each group with an A3 piece of paper with three or four concentric circles equally spaced on it. The centre of the concentric circles represents people most affected. The edge of the concentric circles represents people least affected.



Ask students to discuss the situation of the person/group of people on each card as follows:

- a) How and why they would be affected by a drought
- b) To what extent they would be affected, compared with the other persons/groups of people.

After discussion work, ask students to stick the cards down on the ripple diagram to show the extent to which each person/group of people would be affected by a drought, relative to each other.

Extension activity

Underneath each card on the diagram, encourage students to explain how and why each group would be impacted. Groups can circulate to check each other's diagrams.

Mini-plenary to draw conclusions

1. Which person/group of people would be most affected by a drought? How? Why?
2. Which person/group of people would be least affected by a drought? How? Why?



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Main part 2: What Anglian Water does

Webquest using laptops

Provide each group of students with a topic related to 'What Anglian Water does'. They should find out and record the four most important facts relating to their allocated topic.

You could supply each group with specific URLs to research different parts of the Anglian Water website, or discuss and agree the key words they should use to carry out their own searches. This research work could be carried out during the lesson, if laptops are available, or given as a homework task.

Suggested topics

(listed in order of difficulty, with the easiest first)

- i) **Hosepipe restrictions**
- ii) **Leakage**
- iii) **Using water wisely**
- iv) **Water meters and free water-saving gadgets**
- v) **Climate change**
- vi) **Drought plan**
- vii) **Investment and moving water to vulnerable areas.**

The topics allow for differentiation as some were referred to in the assembly PowerPoint presentation and are more accessible, whereas others are more technical.

Group feedback to class

This could be an oral presentation, or there could be a dedicated laptop available where a student from each group enters its findings into a summary document, which can be circulated to the whole class.

Main part 3: What you can do - getting involved with 'Drop 20'!

Group work

Hand out sets of *Saving water* cards (page 7) to groups of students.

- i) Ask students to read the cards and decide on groups into which they can classify them, e.g. bathroom, kitchen, outside. There are blank cards available if students can think of more water-saving activities to add.
- ii) Provide students with the *Saving water ranking table* (page 8), to either:
 - a) rank cards within each group (rank 1 = easiest to persuade adults and others at home to do, rank 10 = hardest to persuade adults and others at home to do), or,
 - b) rank all 14 cards as above. NB. Students would need to add extra rows if they have filled in extra saving water cards of their own
- iii) Ask students to choose two easier cards (= quick wins) and two harder cards and complete the second and third columns of the ranking table for these cards only. They could refer back to slide 8 of the assembly PowerPoint - 'Drought!' - for support.

Plenary

(Choice)

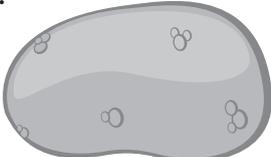
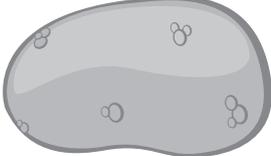
1. Invite students to play the interactive game to test their knowledge.
2. Ask students to think about how they can be more water efficient at home. They could research ideas on the internet, including how to drought-proof your home, water meters, water-saving gadgets, drought gardens, etc.
3. Using the *Saving water ranking table* (page 8), students could make a 'Drop 20' Action Plan for what they will do at home to get their families involved. Elicit from them the reason their two 'quick wins' could be done first, and why they should then follow up with their more challenging choices for saving water.
4. Students could work in groups to devise a summary PowerPoint presentation of their own for showing to younger age groups, e.g. KS3 students to go into feeder primaries to show to KS1 and KS2 students.



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Impact of drought cards

<p>A. Farmers who own a 'Pick Your Own' strawberry farm near Peterborough.</p> 	<p>B. Potato farmer in Marsham, Norfolk.</p> 	<p>C. People who work in and live near Thetford Forest, Suffolk.</p> 
<p>D. Families living in houses built on chalk or clay.</p> 	<p>E. Companies selling boating holidays on the Norfolk Broads.</p> 	<p>F. Family living in Lincoln, Lincolnshire.</p> 
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Saving water cards

A. Put the plug in the basin to wash hands.



B. Install a water-saving device in toilet.



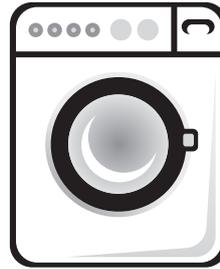
C. Fix all dripping taps.



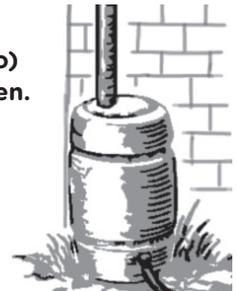
D. Check all water pipes for leaks.



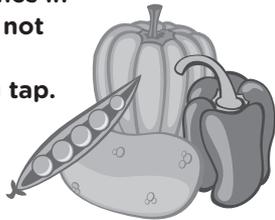
E. Put full loads in the washing machine (or use the half-load function).



F. Put a water butt (or two) in the garden.



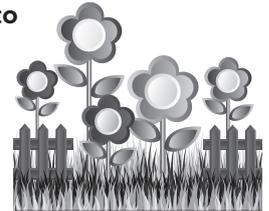
G. Wash vegetables and dishes in a bowl, not under a running tap.



H. Use bath water and washing up water to wash cars and water the garden.



I. Save cold water that comes through before tap/shower runs hot to water plants.



J. Put water from water butt into a watering can and water garden at dusk.



K. Take a short shower. Turn off shower when soaping yourself.



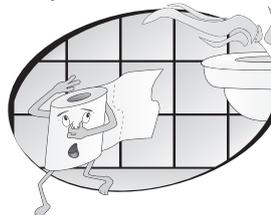
L. Leave grass to grow longer.



M. After having a bath, get someone else to use the same water after you.



N. If it's yellow, let it mellow, if it's brown, flush it down.



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Saving water ranking table

Ranking	Card letter	Reason for rank	How I will persuade adults and others in the house to do this for 'Drop 20'
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			



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