Sewage
A video conference for schools

Your students can talk to an SA Water expert

Help your students find out what happens after flushing and how sewage is treated. In this video conference session students will be able to;
- look behind the scenes of a working sewage plant
- have the process explained by SA Water experts
- ask questions to expand their understanding
- participate in simple hands-on activities

The program has been designed for year 7 students but may be adapted to other year levels.

Australian Curriculum links

- Science understanding: renewable & non-renewable resources, water cycle, finding solutions to contemporary problems.
- Geography: sustainable management of waste, water scarcity solutions, using environments sustainably, availability of resources.

What happens in the video conference session?

- The video conference session will be facilitated by an SA Water expert
- During the session short video clips will be shown, giving students insights into the machinery and processes of a sewage treatment plant.
- Students will be invited to ask questions about the sewage treatment process and other water issues.
- Students will also be invited to illustrate various ideas by means of hands-on demonstrations to their class.

The table on the next page provides the list of easily-obtained materials you will need on hand in the session for the hands-on activities. If you cannot collect all the materials, please advise brainwave@sawater.com.au two days before the session to negotiate alternatives.

Set up a table or bench so that the demonstrations can be seen by both students at the back of the class and by the camera (for the video conference presenter).

For more information phone (08) 7424 2509 or email brainwave@sawater.com.au
Classroom activities during the session

This table gives details of the hands-on demonstrations that will occur at various times during the session. Before the session collect the materials listed (first column) and prepare them as per the second column. The presenter will give students or teachers instructions about using the materials during the session (third column).

Alternatively you may request a box of the required materials to be sent to your school. These materials need to be returned to SA Water at the end of your session. Email brainwave@sawater.com.au to request a box.

<table>
<thead>
<tr>
<th>Teacher to provide for demonstrations</th>
<th>Pre-session preparation by teacher</th>
<th>What happens during the session</th>
<th>Intended learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strainer</td>
<td>Add gravel, marbles etc. to the jug Fill with water Put brown colouring into water to make sewerage colour Place on table in front of class near video screen.</td>
<td>Presenter will ask one student to demonstrate filtration to class by pouring contents of jug through the sieve into the bowl, straining out all the solid objects.</td>
<td>Understand how screen filters work Create dialogue about what could go wrong with this process.</td>
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<tr>
<td>Marbles, gravel, small toys, litter etc.</td>
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<td></td>
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<tr>
<td>Gravy or food colouring.</td>
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<tr>
<td>Jug (1 – 3 litres approx.)</td>
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<tr>
<td>Bowl (to collect water poured from jug)</td>
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<tr>
<td>Perfume, ammonia or other volatile scent</td>
<td>Set sealed bottle at front of room near video screen.</td>
<td>Presenter will ask the teacher to unseal the bottle and let the smell diffuse through the room.</td>
<td>Experience diffusion (Smell moving through the atmosphere).</td>
</tr>
<tr>
<td>Glitter and water in sealed water-proof jar</td>
<td>Set sealed bottle of glitter and water at front of room</td>
<td>Presenter will ask one student to shake the jar and then place it so classmates can see the glitter sinking.</td>
<td>Understand sedimentation (particles settling out of a fluid, larger settling first).</td>
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<tr>
<td>One sachet dried yeast</td>
<td>Collect all materials at front of room near video screen.</td>
<td>Presenter will ask a student (or teacher) to add yeast, sugar and water to the jar.</td>
<td>Understand that ‘microbes’ multiply and produce gas</td>
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<tr>
<td>Jar (1 litre approx.)</td>
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<td>Sugar (2 teaspoonsful)</td>
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<td>Warm water in a jug or flask</td>
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<td>A3 posters Posted to school by SA Water</td>
<td>Have posters on hand and spaces for students to study them in small groups. Ensure all students have pen and paper</td>
<td>Presenter will ask for posters to be distributed. Student will share posters and answer presenter’s questions Students will be asked to record answers to some questions.</td>
<td>Reinforce learning by stimulating discussion</td>
</tr>
</tbody>
</table>

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Sewage treatment information

A good video explanation of sewage treatment.
A series of SA Water videos show the treatment process, the use of recycled waste and ways the public can assist the efficiency of treatment.

   A remarkable journey
   An amazing transformation
   An important responsibility

Find these videos at

More information about SA Water’s sewage systems can be found at

Educational apps
A number of educational electronic games are available. They range from sewerage education to building a virtual desalination plant.
www.sawater.com.au/SAWater/Education/LetPooThr u.htm

Other useful resources

Water Education toolkit – educational resources database
The Water Education Resources Directory is a public online searchable database of water related education resources and programs in Australia. Teachers could use the database as a way to find specific topics that they want to teach about or activities and games.

Sustainable and Attainable Website
Sustainable and attainable is a website that provides ideas and resources under the 5 themes of Education for sustainability. One great idea is to conduct a whole of school water audit and all of the templates can be found on this website to conduct one.
www.sustainableschools.sa.edu.au/pages/assessteach /40282/

Zero Waste S.A. Website
A website that gives ideas and case studies about waste disposal at home, school and in business. This website has grant money available, resources to borrow and many great ideas/newsletters etc.

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