

# Environmental sustainability

Students will see inside a wastewater plant as they learn what should go down the toilet and drains. Our recreation areas are very important to the community, flora and fauna. Students will recognise the important elements to consider when designing their own community park and create a 3D model to share with others.

**Subject area:**

Humanities and Social Sciences

**Year level:**

Year 4

**Learning objectives:**

- Understand how natural resources are used and managed in sustainable and non-sustainable ways.
- The important role vegetation plays in sustaining the environment, including providing shade, cooling urban spaces and making areas more attractive.
- Strategies to protect particular environments that provide the habitats for animals (for example: planting bird-attracting vegetation).
- The work of groups and organisations that manage natural resources and/or waste.

Curriculum links

Geography	ACHASSK088
Geography	ACHASSK090

Cross curriculum priorities - Sustainability

OI.1	The biosphere system is a dynamic system providing conditions that sustain life on Earth.
OI.2	All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.
OI.3	Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.

General capabilities



Literacy



Information and communication technology (ICT) capability



Critical and creative thinking



Personal and social capability

## > Activity 1

# 3Ps

Following a virtual tour through one of Water Corporation's wastewater treatment plants, students will create an educational poster to educate their fellow students about items which can or can not be flushed down the toilet. The activity teaches students about their personal responsibility in maintaining the integrity of our wastewater system.

### Time required:

1 hour

### Resources required:

- iPad or computer per student
- A3 paper
- Coloured card

### Preparation

Ensure access to:

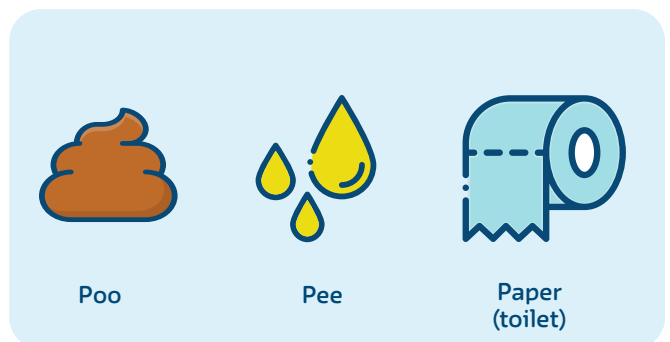
1. [Water Corporation website](#)
2. [PicCollage app](#)
3. [Inside a Wastewater Treatment Plant virtual tour](#)
4. [Looking after our wastewater system](#).

### Steps:

1. We all use water inside our houses and school. Discuss with students where their used water goes, how they think it's cleaned and whose responsibility it is to clean it.
2. View the [Inside a Wastewater Treatment Plant virtual tour](#).
3. Ask students to recall some of the items Water Corporation cleans out of wastewater in the first screening stage. For example: Barbie dolls, cotton buds, false teeth, plastic and rubbish.
4. There should only be the three P's going down the toilet: poo, pee and (toilet) paper. Watch our [Looking after our wastewater system](#) video.
5. Ask students to explain how products other than the 3 P's can block the pipes underground.

6. Ask students why it's important to prevent and fix blockages and what effect this would have on the community if blockages were not fixed. Blockages can cause diseases and bad odours if not repaired.
7. Students will now create an educational poster to teach other students about the 3Ps toilet rule.
8. As a class, brainstorm the elements of an effective poster. For example:
  - a. An eye-catching title to attract people walking past.
  - b. Short, sharp one line messages with no more than three messages per poster.
  - c. Two or three photos/ illustrations at most.
9. In pairs, draft a poster on A3 paper with the main elements in mind. Consider:
  - a. Poster title.
  - b. Two reasons why people should only flush poo, pee and paper down the toilet.
  - c. Two photos or hand drawn illustrations to illustrate their message.
10. Share their draft designs with another pair to proofread and to ensure their message is clear and eye-catching.
11. Once edited, students can create the final version of their poster to display in their school. Students may choose to create their poster using large card or the [PicCollage app](#).

**There should only be the three P's going down the toilet: poo, pee and (toilet) paper.**



## > Extension Activity 1

# In the community

Students will investigate Water Corporation's 'Drainage for liveability' program, creating their own design for a community park meeting the needs of different sectors of the community, as well as the native fauna and flora.

### Time required:

1 hour

### Resources required:

- iPad or computer per student

### Preparation:

1. [Drainage for liveability](#)
2. Ensure access to:
  - a. Bannister Creek [living stream project](#)
  - b. Brentwood [living stream project](#)
  - c. Morley ninja park [media release](#) and [video of project](#)
  - d. Wharf street basin [website](#) and [video series of project](#)
  - e. Bassendean [living stream project](#)

### Steps:

1. Spend time going through the images and information on Water Corporation's [Drainage for Liveability](#) projects with the students. Initiate a discussion with the students asking the following questions:
  - a. Have they noticed these drains before? If so, where have they seen them?
  - b. What is their purpose and where do they lead to?
  - c. What type of pollutants might enter the stormwater drains, and how might these affect the natural environment?
2. Water Corporation is helping to make communities more liveable while protecting stormwater drains through our [Drainage for liveability program](#). This program works with local government and community groups to create spaces where people want to spend time. Many of our natural parks, used by people in the community for walking and cycling, are located next to a body of water which acts as an outlet for stormwater. Show students the contrasting images of the programs, highlighting:
  - a. Before image: The lack of vegetation, shade, natural habitat for native fauna, lack of safe space for people to use
  - b. After images: A healthy water system with lots of native trees, animals and birds, shaded areas and plenty of space for old and young to play and exercise.
3. Ask the students what it would be like to play in an area like the first image compared to the second and third images. How would the two different environments make them feel? Would the first image be an area where it was safe to walk and play?
4. As a class, brainstorm the elements that make up a safe and healthy community park with lots of shade, water and healthy bird-attracting plants. While students are thinking of these elements, ask them to consider the activities their family (siblings, grandparents, cousins, aunts and uncles) enjoy doing at their favourite park. Write their ideas on the board.
5. In pairs, allow students time to design their own community park on a piece of A3 paper. Ensure that as many of the elements from the brainstorm are included in their final design.
6. Students should be able to explain their design, justify why they chose particular elements, list ways the community using the park can contribute to its sustainability, and describe how it benefits the whole community including local flora and fauna.

> Extension Activity 2

# Build your park

Using their designs from extension activity 1, students create a 3D model of their community park using recycled materials.

**Time required:**

1 hour

**Resources required:**

- Plasticine
- Skewers
- Recycled materials (such as toilet paper rolls, straws or small boxes etc.)

**Preparation:**

1. Students are to collect recycled materials from home to use in model playground.
2. Optional: Reach out to representatives from local council or environmental groups to speak to students.

**Steps:**

1. Students need to get creative as they turn their playground from extension activity 1 into a 3D model. Students should spend the weeks leading into this activity collecting as many different recycled materials to use in their design.
2. The school may choose to invite a representative from the local council or a local environmental group to view the designs and models, provide feedback and talk about the current plans for local council parklands. The representative could share information about local programs and volunteer groups in the community who help to keep communal areas growing and protected. They may be able to provide ideas for the students to get involved in their local environmental projects.



Turn your community park into a 3D model. Use plasticine, skewers and recycled materials,