**29. Sustainable Ways of Water Supply**

Learning objectives:

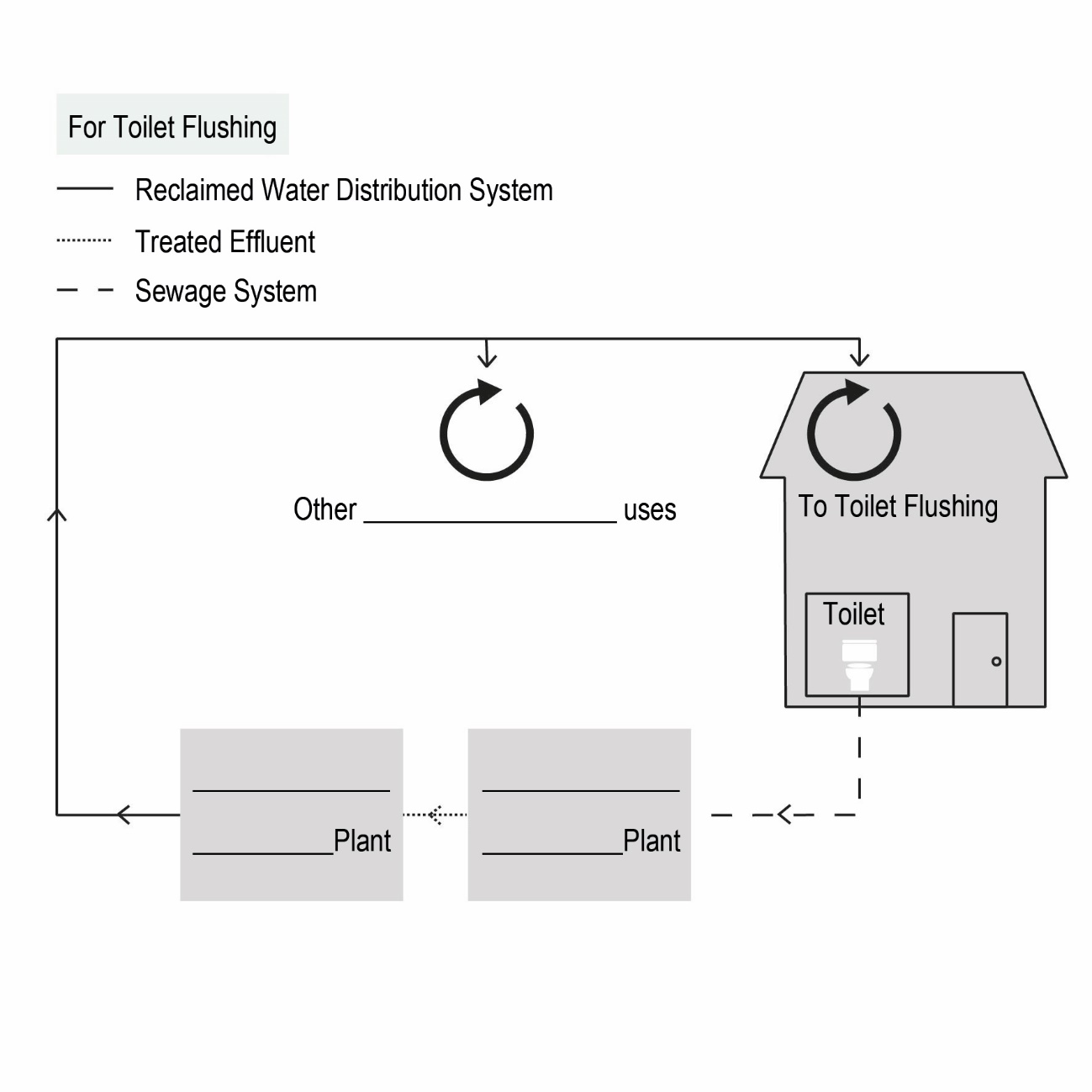
* Learn about the technology of water reclamation

Water reclamation

　 “Reclaimed water” refers to wastewater that is highly treated and sterilised that complies with the strict standards of reuse. It becomes part of the water supply system and can be used for non-potable uses to reduce consumption of precious drinking water.

The following diagram shows the water reclamation process, fill in the blanks with the correct words or phrases.

water reclamation　sewage treatment　potable　non-potable



List two uses of reclaimed water:

1

洗盥污水

再造水

洗衣機

1. 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　 　

2.

P6 - A Century of Change: Exploring the World

**29. Sustainable Ways of Water Supply**

P6 - A Century of Change: Exploring the World

Learning objectives:

* Learn about the technology of desalination

Desalination

　　Desalination means purifying seawater to become fresh water. Nowadays, most desalination plants in the world tend towards using the method of reverse osmosis, by using a semi-permeable membrane to filter away the salt in seawater. The cost of this method is much lower than the traditional way of distillation.

　　Answer the following questions by circling the right answer.

|  |  |
| --- | --- |
| 1. Natural osmosis: | In a natural osmosis, water from the side of ( higher / lower ) water potential (fresh water) migrates to the side with a ( higher / lower ) water potential (seawater) through the semi-permeable membrane. |
| 1. Equilibrium state: | In an equilibrium state, seawater is pressurised such that ( seawater / fresh water ) cannot pass through the semi-permeable membrane. |
| 1. Desalination –   Reverse osmosis: | Reverse osmosis uses high pressure to force seawater with a ( higher / lower ) water potential to flow into fresh water with a ( higher / lower ) water potential. Since the membrane only allows (salt water / pure water) to flow through, salt and other impurities are filtered off.  2 |

**29. Sustainable Ways of Water Supply**

P6 - A Century of Change: Exploring the World

Learning objectives:

* Understand the advantages and points to note of the technology of water reclamation and desalination

The development of water reclamation and desalination and their pros and cons

　　Water reclamation and desalination are both water supply solutions complying with sustainable development\* formulated by the Government. The Water Supplies Department (WSD) has been progressively promoting reclaimed water for non-potable uses in north-eastern part of the New Territories, and aims to start supplying reclaimed water from tertiary treated sewage effluent at the Shek Wu Hui Sewage Treatment Works to Sheung Shui and Fanling, to replace fresh water for toilet flushing. Besides, WSD is also setting up a Desalination Plant in Tseung Kwan O, which is target to be completed by the end of 2022.

\*Sustainable Development: development that emphasises on environmental protection and meets the needs of the present without compromising the ability of future generations to meet their own needs

1. From the aspects of environmental protection and economic, discuss the advantages and points to note of water reclamation and desalination.

|  |  |
| --- | --- |
| Water Reclamation | Advantages:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    Points to note: |
| Desalination | Advantages:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    Points to note:  　　　　　　　　　　　　　　　　　　　　　　　　　　　\_  　　　　　　　　　　　　　　　　　　　　　　　　　　　\_ |

3