

**Purposes:**

- a) to set up and maintain a sustainable ecosystem in a bottle.
- b) to observe how the ecosystem changes over time.
- c) to investigate the factors that impact the sustainability of an ecosystem.

# The Eco-bottle Project: A study of Sustainability

**Your task:** In this project, you will work in groups to create your own aquatic ecosystem. Over the next few weeks you will monitor your ecosystem, observing both the **abiotic and biotic components**, assessing the health and sustainability of the ecosystem and watching for changes.

**Eco-bottle:**

- Your ecosystem must have **ONLY** the following: *water, gravel, aquatic plants, 1 fish, 1 snail*
- Before you seal the ecobottle, you will change **ONE variable** in your ecobottle to observe the impact on the ecosystem. You will compare your ecobottle with the class **control** ecobottle.



## Eco-bottle Calendar

	Tuesday	Wednesday	Thursday	Friday
<b>May 9</b>	<b>10</b>	<b>11</b> Introduction to Ecobottles Food webs	<b>12</b> 1. Wash the bottle. 2. Add 2.5 cm of gravel. 3. Fill with tap water. Leave uncovered for 2-3 days.	<b>13 (PD day)</b> Leave uncovered over the weekend to allow Cl to escape.
<b>16</b> 1. Add aquatic plants. 2. Place bottle near window. 3. make observations: temperature, pH, nitrate level	<b>17</b> Make observations	<b>18</b> 1. Add snail 2. Make observations	<b>19</b> 1. Add fish 2. Make observations	<b>20</b> Make observations
<b>23</b> <b>Victoria Day</b>	<b>24</b> Make observations  <i>Electricity Unit begins</i>	<b>25</b> Make observations	<b>26</b> Make observations 1. Take last pH, nitrate and temperature recordings for the next 14 days. 2. Add variable to be tested. 3. Seal eco-bottle with a lid	<b>27</b> Make observations
<b>30</b> Record qualitative observations.	<b>31</b> Record qualitative observations.	<b>June 1</b> Record qualitative observations.	<b>2</b> Record qualitative observations.	<b>3</b> Record qualitative observations.
<b>6</b> Record qualitative observations.	<b>7</b> Record qualitative observations.	<b>8</b> Record qualitative observations.	<b>9</b> 1. Record qualitative observations. 2. Open eco-bottle. 3. Final quantitative observations. 4. Clean-up eco-bottles.	<b>10</b> Ecobottle follow-up