

pure water

student activity



Science Education Program

Name: _____

Teacher: _____

School: _____

Water isn't just water! Depending on how it's handled, water will dissolve different amounts of gases from the air, it will have a different pH, conductivity, salinity and temperature. This activity is your opportunity to see for yourself how much difference this can make, by conducting a series of tests to compare the water in the Cave of Waves with that in nearby Nickelodeon's Pipeline Plunge.

Syllabus Outcomes

Years 6 and 7

Natural and Processed Materials 4.1 Students collect information and propose ideas to explain the properties of materials in terms of each material's underlying structure.

Years 8 and 9

Natural and Processed Materials 5.3 Students devise tests and interpret data to show that the properties and interactions of materials influence their use.

Year 10

Natural and Processed Materials DB6.5 Students explore chemical processes which adversely affect the environment and consider ways of minimising these effects.

Equipment

Student activity sheets, pens/pencils, water testing kits or electronic water testing units, two plastic beakers, plastic test tubes, plastic droppers, thermometer.



Activities with this symbol may be completed while you're having lunch at WhiteWater World, or after you leave WhiteWater World.

Standard Achieved

N&PM 4.1	N&PM 5.3	N&PM DB6.5
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In this activity, you will conduct a series of tests on the water from different sources at WhiteWater World. Before you begin, make sure you are familiar with the tests that you will be using.

Water Testing

Question 1 (Level 4 Outcome)

The first test is a simple one. Your tongue is very sensitive to chemicals like salt and chlorine, so simply by dipping your finger into water and tasting it, you will be able to determine whether it is fresh water or salt water.

Please note: you are only taste testing the water, not swallowing it

Circle the correct answer for each:

Cave of Waves water	Fresh Water	Salt Water
Nickelodeon’s Pipeline Plunge water	Fresh Water	Salt Water
Tap water from change rooms	Fresh Water	Salt Water

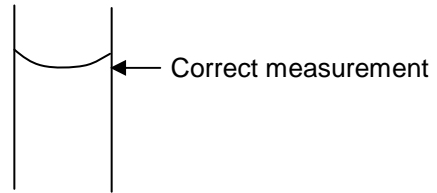
Conducting your water tests

1. Find a table in the shade, out of the way of other guests in the park. You will need about an hour to complete your measurements.
2. Assemble all of your equipment:
 - This booklet,
 - Pens/pencils,
 - Water testing kits or electronic water testing unit,
 - At least two plastic beakers,
 - Plastic test tubes (as many as you have tests to do),
 - Plastic droppers (as many as you have tests to do),
 - Thermometer.
3. Use one of your plastic beakers to obtain a sample of water from the source that you are testing.
4. Rinse all of your test tubes and droppers with the water that you are testing.
5. Read carefully the instructions and safety directions included with your testing kit or electronic testing unit before beginning the test.
6. Complete the test and record your results on the next page.
7. After you have finished the test, dispose of the waste water in one of your empty beakers. When it is full, tip it down a drain or onto a garden.
8. Repeat steps 3 to 7 for each of your tests on the water from the Cave of Waves, Nickelodeon’s Pipeline Plunge and tap water from the change rooms. Be sure to rerinse your test tubes and droppers between each test.

Please note that no glass is permitted in WhiteWater World

Water Testing Tips

1. When reading levels in a measuring cylinder or beaker, always measure from the bottom of the meniscus.
2. If you have a choice of fresh water and salt water colour charts for your ammonia test, be sure to use the correct one.
3. If your Carbon Dioxide test directs you to mount the test apparatus in the water, ignore the direction and simply make the measurement where you are.



Question 2 (Level 4 Outcome)

Fill in the names of each of the water tests that you will use in the left-hand column of the table below. These might include:

- Salinity
- Nitrate Test NO₃
- pH Test
- Electrical Conductivity
- Nitrite Test NO₂
- Oxygen Test O₂
- Temperature
- Carbon Dioxide Test CO₂
- Ammonia Test

Conduct your tests and record your results in the table below.

The instructions for each test will guide you in how to record your results. For instance, some may give you a concentration in milligrams per litre (mg/L) or parts per million (ppm) while others may give a verbal descriptor such as “insufficient for plant growth.” Be sure to use the correct units.

Units	
Temperature	°C
Milligrams per litre	mg/L
Parts per million	ppm
pH	No units
Electrical Conductivity	EC or Siemens per cm (S/cm)

Water Test	Cave of Waves	Nickelodeon's Pipeline Plunge	Tap water from change rooms

