Topic: Sustainability

Lesson 1: Bottled water	KS or Year Group: KS 3
Resources: 1. Necessary equipment for the experiment = 6 large bottles of different branded water and 1 bottle of tap water, over 30 receptacles (dependent on size of class), white stickers, a plastic cup for each student 2. Resource 1 – News article	**Outcomes:** • Students learn about the issues surrounding bottled water. • Students are able to debate in class whether bottled water is a waste of money and environmental resources.

National Curriculum

Key Processes: 2.1a, 2.1b, 2.1c, 2.2a
Range and Content: 3e

Lesson 1

The aim of these two lessons is to engage students with the debate surrounding bottled water. This opening lesson comprises of a taste-test experiment, after which students learn that there is very little discernable difference in taste between tap water and bottled water. This practical experiment serves as a springboard for the next lesson which examines the marketing and environment impact of bottled water.

Starter

Distribute copies of **Resource 1 – News article**. Ask the students to read the article then underline the reasons given in the article why some people think serving tap water to customers is better than selling bottled water. As a class, ask them to feedback the reasons they identified and put them on the board.

Main activity

- The teacher needs to set up the taste-test experiment in advance of the lesson. Having purchased six large bottles of branded water, now pour each of them in six separate receptacles on each group's table. Put a sticker on each and mark them A, B,C, D, E and F (ensure that this labelling is consistent across all the groups and keep a record of each brand's letter). Put tap water on each table in a receptacle marked G.
- When the class arrive, split the students up into equally sized groups. Give each student a cup each.
- Each group needs to do the following:
    1. Pour and taste a small amount (just enough for a couple of sips will do) from each receptacle. They should then note down a rank order of which one they think is the nicest to drink (1 = least nice, 7 = nicest).
    2. Try and guess the one which is tap water.
    3. Say what they think each water costs for a litre bottle.
- Each group should nominate a group leader (who is preferably the best at maths!) to keep a record of the overall scores. The rank order translates into how many points each brand is given (e.g. a water that achieves a rank order of 6 gets 6 points). The group leader should add up the scores for each brand. If the groups within the class are not of equal size, the leader will then need to divide the totals for each brand by the number of people within the group so that the groups within the class have comparable scores.
- Then the group leader should report back to the class the rank order of the brands according to the group as a whole, what each group thought was tap water and how much each cost.
- The teacher should reveal the correct answers and the whole class should analyse the results. Did any group correctly guess which cup was tap water? Was there any consensus as to which brand taste the nicest?
- It is highly unlikely that the class was able to differentiate between any of the different water. The teacher should share that this was the point of the lesson!
- How much did they think a litre of bottled water cost? The average cost of bottled water is 95 pence. Did the class overestimate or underestimate the price? Ask the class to guess how much tap water costs per litre. The answer is that tap water costs approximately 0.1 pence per litre. Ask the students what they have learnt from this experiment.
- How many students have bought bottled water in the last week? Have any of these changed their opinion after the experiment?

Plenary

Ask the students to summarise the results of the experiment for a) their group b) the class as a whole. Were there any significant differences between the two sets of results? What did they learn from doing the experiment?

Resource 1 – News article

Tap Water Campaign Aims To Help Planet

Sunday May 04, 2008

"Still or sparkling?" It's a familiar footnote to most restaurant orders, but there's now a change flowing around Manchester's restaurants - more and more are deciding to offer tap water first.

The Tap Into Water campaign aims to prompt people in the North West of England to rediscover the most basic of drinks while being more environmentally responsible. Councils, football clubs, offices and restaurants have signed up to encourage visitors, employees and customers to choose tap water.

At Sam's Chop House, a traditional pub serving British fayre, they still offer mineral water in glass bottles, but tap water is offered first.

George Bergier told Sky News Online: "We have never discriminated if people have wanted a jug of water, of course we make good money from selling mineral water but it's important that by making ourselves more environmentally friendly, by doing it we may even attract more customers."

Unsurprisingly the people behind the campaign are United Utilities, the company that provides tap water to seven million people in the North West of England.

Chief Executive Philip Green told Sky News Online: "At a time when we are facing such huge environmental challenges, buying bottled water at the rate of three billion bottles a year in the UK is clearly unsustainable.

"It's no longer 'cool' to be carrying around the latest bottle of designer water."

Environment Minister and Oldham MP Phil Woolas has described the trend for bottled water as "morally indefensible".

That might be a bit strong if you just need a drink when you are on the move, but there's no doubt there's a small but significant backlash aimed at pricey bottled water.

Those behind the campaign admit that it can't work everywhere because tap water in some parts of the UK just doesn't taste as good as it does in Manchester.

Nevertheless, in these tougher economic times, more people are wondering just why they have been buying still bottled water for so many years.

Courtesy of SKY News