



Multi Grade Variations on Math Activity Tooth Brushing

K – Grade 3	Grade 4- 6	Grade 7 -8
<p>Demonstration, measuring.</p>	<p>3 approaches: using a calculator paper calculation mental math</p>	<p>Same as for grades 4-6. Increase calculations.</p>
<ul style="list-style-type: none"> ● Plug two sinks that are side by side. ● Sink 1- child pretends to be Bill brushing teeth. As water runs, children count to 5 (1000, 2000...). ● Sink 2 – child pretends to be Mary. As water runs, use timer or count to 60. ● Compare the amount of water in each sink: which method uses more water? Which way would you choose to save water? ● Remove and measure the water in the two sinks. 	<p>The problem: for Bill</p> <ul style="list-style-type: none"> ● 100mL/sec x 5 sec= total amount of water used. $100 \times 5 = 500\text{mL}$ <p>The problem: for Mary</p> <ul style="list-style-type: none"> ● 100mL/sec x 1min= total amount of water used. ● 100mL/sec x 60 sec= $100 \times 60 = 6000\text{mL}$ <p>Changing mL to L: There are 1000mL in a L: Bill uses half a litre. Mary uses 6 litres.</p> <p>Note: When we do this activity we use 500mL water bottles to show how much water each uses. i.e. Bill uses the equivalent of one bottle of water and Mary uses 12 bottles of water each time they brush.</p>	<p>Calculate the problem as in gr. 4-6.</p> <p>Add calculations for per day use and per year use. For Bill:</p> <ul style="list-style-type: none"> ● $.5\text{L} \times 3 = 1.5\text{L/day}$ $1.5 \times 365 = 547.5\text{L/yr}$ <p>For Mary:</p> <ul style="list-style-type: none"> ● $6\text{L} \times 3 = 18\text{L/day}$ $18\text{L} \times 365 = 6570\text{L/yr}$ <p>How much more does Mary use? $6570 - 547.5 = 6022.5$</p> <p>Note: When we do this activity, we may look at the 20L water jugs or 2L pop bottles and estimate how many of those each is using per year.</p> <p>Calculate the utility cost of the water each is using per year: Tap water is < 1¢ (approx .2) per litre. For Bill: $547.5 \times .2 = 109.5\text{¢}$ or \$1.10</p> <p>For Mary:</p> <ul style="list-style-type: none"> ● $6570 \times .2 = 1314\text{¢}$ or \$13.14



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Tap Water vs Bottled Water

Tap Water	Bottled Water
<p>Cost:</p> <p>\$0.0016/litre \$0.007 for 4 litres</p> <p>(March 2011)</p>	<p>Cost:</p> <p>(Co-op gold, purchased at Co-op) \$3.69 for 12-500ml bottles \$0.31/ bottle \$0.62/litre \$2.46 for 4 litres</p> <p>(March 2011)</p>
<p>Testing Requirement:</p> <p>At least daily</p>	<p>Testing Requirement:</p> <p>At least weekly</p>
<p>Embodied Energy/ Footprint:</p> <p>Water collected from River at Saskatoon, treated at Saskatoon, pumped to homes and businesses.</p>	<p>Embodied Energy/ Footprint:</p> <p>Water collected from Kawkawa Spring, BC. Water treated where? Plastic bottle (made from petroleum) produced where? Bottled water shipped to Saskatoon. Empty bottle recycled or landfilled.</p>



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Earth's Fresh Water

- The two litre pop bottle represents all of the water on earth.
- The bottle cap filled with water represents the amount of FRESH water on earth.
- A few drops of water from the bottle cap represents how much water is AVAILABLE for human use.



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Water Conservation Workstation

Look for the problem (Audit)

- Are staff and students running the water excessively (Don't Run the Water pre-campaign audit)
- Are staff and students drinking tap water or bottled water (Refillable Water Bottles pre-campaign audit)
- Home water audit

Fix the problem (Campaign)

- Don't Run the Water campaign
- Refillable Water Bottles campaign