**Cost of Water**

**Jigsaw Activity**

**STEP1: Home Team**

Your home team will choose a team name. Then each team member from the home group will choose one of these challenges. Talk with your home team members and decide who will solve each challenge. Write everyone’s name beside their challenge.

Home Team Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | **Team Expert Name** | **CHALLENGE** |
| 1 |  | How much would it **cost** to fill our classroom with tap water compared to bottled water? |
| 2 |  | How many classrooms full of oil are required to **make** the plastic for the bottled water Canadians drink every year? |
| 3 |  | How many classrooms full of water is Nestle Ltd. allowed to extract from the aquifer near Aberfoyle, Ontario every **week** to make bottled water? |
| 4 |  | How many classrooms full of water would be required to **make** the bottled water drunk by the families of students in our school every year? |
| 5 |  | How many classrooms would be required to hold the empty 1 L water bottles thrown away by Ontarians every year? Assume a bottle occupies the same volume as 1 L of water. |
| Bonus | Can be completed by any expert team that has time to spare. | How many days would it take for Nestle to extract the water required to fill 1 L water bottles consumed by Canadians every year? |

**STEP 2: Expert Teams**

Work in a group of 3 people who are solving the same challenge about the cost of bottled water. You must write your own rough notes and answer on your own page. You will need to talk and share ideas to successfully solve you challenge. When your expert team has an answer, you will write the answer neatly on chart paper. This answer will be used during your presentation to your home group.

As the expert, each of you will explain your solution to your home team. Here is a checklist your expert team can use to determine if you have a well-documented answer to your challenge.

€ The steps are in an easy to follow order.

€ A sentence explains each step of the answer.

€ Units are used after the numbers when needed.

€ Formulas used are written down.

€ Diagrams with labels are included to show volume calculations.

€ The answers are correct.

Some facts needed to solve the challenges are:

1. There are 1000 L in 1 m3.

2. The height of our classroom = 4 m.

3. The population of Canada is 35 million.

4. The number of students in our school is 400.

5. The Nestle Ltd water bottling company has a permit to withdraw 3.6 million litres of water every day from the aquifer near Aberfoyle, Ontario.

6. The average Canadian drinks 66 L of bottled water every year.

7. The average cost of a 1 L bottle of water is $1.10.

8. The average cost of 1L of Toronto tap water is $0.0025. That means 4 L cost 1 cent.

9. To make 1 L of bottled water requires 0.33 litres of oil.

10. To make 1 L of bottled water requires 3 L of water.

11. The population of Ontario is 13 million.

12. The average family size in Canada is 3 people.

**STEP 3: Present Answer to your Home Team**

Go back to your home group. Decide how each person can have their presentation evaluated by two other people. Take turns presenting your answers. Complete the **Presentation Rubric** after each presentation.