Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per: \_\_\_\_

**Water Use WebQuest**

***Part 1: Your Water Footprint***

Your goal today is to get a more accurate idea of how much water you use on a daily basis. First, think about the many ways you use water each day. Then, predict how many gallons you think you use daily.

My Prediction is: \_\_\_\_\_\_\_\_\_\_\_\_\_ gallons

Use the water footprint calculator on this site (Link on Google Classroom): <https://www.watercalculator.org/wfc2>

Take your time reading each question, so your water use estimate is as accurate as possible. Answer the questions below as you work through the calculator.

1. Fill in the following about DIRECT WATER USE (Indoor and Outdoor):
   1. A 10-minute shower uses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons or more.
   2. It takes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons to fill an average bathtub to the brim.
   3. A faucet uses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons per minute.
   4. A toilet uses between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons per flush.
   5. An “old school” dishwasher uses \_\_\_\_\_\_\_\_\_\_\_\_\_ gallons per load, an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dishwasher uses 4 gallons per load, and washing dishes by hand uses about \_\_\_\_\_\_\_\_\_\_\_\_\_ gallons per load.
   6. Energy efficient washing machines use \_\_\_\_\_\_\_\_\_\_\_\_ gallons per load while a standard washer uses \_\_\_\_\_\_\_\_.
2. Fill in the following about VIRTUAL WATER USE:
   1. 1 mile driven = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons.
   2. Recycling paper saves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons.
   3. Recycling plastic saves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons.
   4. It takes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons to grow and process 1 pound of cotton. On average, we go through about \_\_\_\_\_\_\_\_\_ pounds per person of new cotton each year. How many gallons of water does the average person go though of new cotton per year?
   5. Vegans or vegetarians have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the water footprint of that of a meat eater.

When you’re finished, record your results here. You many need to add up your gallons used to get a total for each category.

|  |  |  |
| --- | --- | --- |
|  | **Your Totals** | **US Average** |
| Total Water Footprint: |  |  |
| Indoor Water Use: |  |  |
| Outdoor Water Use: |  |  |
| Virtual Water Use: |  |  |

1. In which areas do you use less water than the U.S. average?
2. In which areas do you use more water than the U.S. average?
3. Choose your 2 highest areas of water use from both your direct water use (indoor and outdoor use) and your 2 highest areas from your virtual water use. Click the “Tips” button on the right of the screen next to your selected category. In the table below, write down at least 1 thing you can do to reduce your water footprint for that category.

|  |  |
| --- | --- |
| **Direct Use (Indoor and Outdoor)** | |
| **Category** | **Tips** |
|  |  |
|  |  |
| **Virtual Use** | |
| **Category** | **Tips** |
|  |  |
|  |  |

***Part 2: Comparing Uses of “Hidden Water”***

As you discovered in the water footprint calculator, we use a lot more water than we think! Compare some common products using this site (again, the link is on Google Classroom): <https://www.watercalculator.org/water-use/>

Click on “Food’s Big Water Footprint.” Read the article and then answer the following questions.

1. Why is food’s water footprint so big?
2. Using the data in Table 1, rank the four protein sources from largest water footprint to smallest water footprint.
3. Using the data in Table 1, rank the three beverages from largest water footprint to smallest water footprint.
4. Why does meat have a larger water footprint than fruits and vegetables?

Click the “back” button. Then, click on “The Water Footprint of Energy.” Read the article and then answer the following questions.

1. Why is water necessary when producing electricity?

Click the “back” button. Then, click on “The Hidden Water in Everyday Products.” Read the article and then answer the following questions.

1. How many gallons of water went into making your t-‐shirt?
2. How many gallons of water are hidden in a smart phone? Why does the manufacturing process require this much water?
3. Now that you see where all of the hidden water is, how will you value things differently? Give at least two specific examples of how you might work to reduce your use of “hidden water.”

***Part 3: Bottled Water vs. Tap Water***

Tomorrow, we will be having a debate on the benefits of bottled vs. tap water. To earn points, you must participate in the discussion at least twice. Any additional quality points that you make during the debate *may* earn you extra credit. To help you prepare, answer the questions below. You must list at **LEAST THREE** points for questions 1-4, but you may have more if you so desire.

THINGS TO CONSIDER: Human health, BPA, Fluorine, Environmental Impacts.

1. What are the benefits of tap water (At least 3)?
2. What the benefits of bottled water (At least 3)?
3. What the criticisms of tap water (at least 3)?
4. What the criticisms of bottled water (at least 3)?
5. Are you pro-tap water or pro-bottled water?  Explain which side of the debate you’re on, and give at least one supporting example.