

Team Evergreen
Lina baquero
lbaquero@cng.edu
Colegio Nueva Granada

Choose three items you use/consume/wear daily. Consider food, technology, clothing, transportation, etc. Research and find the estimated water footprint of each.

1. Jeans
2. iPhone
3. Milk

How much water is required to produce each? Explain why those items require that amount of water.

1. Jeans
 - a. 1,800 gallons of water are needed to grow sufficient cotton to make a pair of regular blue jeans, and 9,982 gallons of water are used during the dye process and the machine wash. That number is equal to “104 showers, 50 bubble baths, 11,520 Venti-sized coffees—or a single pair of jeans”
 - b. How to make production more sustainable? Use less water, organic cotton, and sustainable dyes
 - i. <https://sites.psu.edu/math033sp15/2014/10/16/how-much-water-does-it-take-to-make-a-pair-of-jeans/>
 - ii. <https://www.marieclaire.com/fashion/a27046417/denim-water/>
2. iPhone
 - a. About 13 tons of water are needed to make a smartphone due to the manufacturing process. This is because phones are composed of multiple parts that are each manufactured in numerous steps that require water. Many resources, materials and pieces go into smartphone manufacturing, such as rare metals like lithium, tin, glass and plastics. Chains that supply these materials are located around the world in countries such as Indonesia, the Philippines and China. The production of these materials often requires procedures like mining and creating synthetic chemicals for overall assembling. Additionally, the manufacturing process of these produces wastewater that ends up in nearby waterways. We also have to consider the water used to clean and dilute wastewater.
 - i. <https://www.watercalculator.org/footprint/the-hidden-water-in-everyday-products/>
3. Milk
 - a. Approximately 4.5 gallons of water are needed to produce 1 gallon of milk. Firstly, water is consumed by cows, but it is additionally used to cool milk, cleaning and sanitizing equipment, cooling cows, irrigating crops, making other products, moving manure and cleaning the barns with flush systems.
 - i. https://www.canr.msu.edu/news/water_use_on_dairy_farms#:~:text=Based%20on%20the%20Ohio%20study,produce%20one%20gallon%20of%20milk.

Reflect on your research and briefly answer the following:

- **What surprised you about the water intensity of the items you use every day?**
- **Is there a more sustainable alternative to that item or does conserving water mean cutting it out altogether? Is that feasible?**

I was most surprised about the amount of water needed to produce smartphones. Thirteen tons of water is excessive, and considering the amount of smartphones being made every day is just increasing, this number concerns me greatly. I had previous knowledge about the amount of water needed to make clothing such as jeans, but becoming conscious the number is 1800 gallons of water still shocked me as well. For some reason I was expecting milk production to use more water, but compared to jeans and smartphones, it scored a much lower footprint.

There are sustainable alternatives to consuming jeans and smartphones, like buying them second hand or (exclusively to jeans) buying them from an recognized eco-friendly store. Re-using fabric to diy jeans could also be a way of consuming the product in a more sustainable way. Cutting out these two products would definitely not be feasible, since they are crucial in the modern world, but the suggestions stated previously could help conserve water. In regards to milk, I think that water use is mostly if not fully administered by the factories that make it, but possibly a campaign or request for these producers to lessen their water use could help consumers with their blue footprint.

Next, take all of the information that you learned and want to share to create an infographic, educating about the water footprint of one item you use in daily life.

Upload this on Instagram with a great caption and tag @TurningGreenOrg in both the image and caption, as well as using #PGC2020.

https://www.canva.com/design/DAEJr7fWOXc/9uldRqxy0PUKzpaVg9qsxg/view?utm_content=DAEJr7fWOXc&utm_campaign=designshare&utm_medium=link&utm_source=sharebutton

DO YOU KNOW ABOUT
YOUR PRODUCTS'
WATER FOOTPRINT?
HERE IS WHAT WE
LEARNED:

**3
RANDOM
EVERY-DAY
PRODUCTS**

JEANS
SMARTPHONES
MILK

**1
PAIR
OF JEANS**

1,800 GALLONS
OF WATER

=
ABOUT 104 SHOWERS, 50 BUBBLE BATHS, 11,520
VENTI-SIZED COFFEES

WHY?

GROWING SUFFICIENT COTTON, DYE
PROCESSES, SEVERAL CHEMICAL-
INTENSIVE WASHES

**1
SMART
PHONE**

3,116 GALLONS
OF WATER

WHY?

THE MULTI-STEPPED MANUFACTURING PROCESS:
EXTRACTING NATURAL RESOURCES, SHIPPING
RESOURCES, ASSEMBLING, CREATING SYNTHETIC
CHEMICALS; WASTEWATER CREATED FROM
PREVIOUS PROCESSES, AND WATER
USED TO CLEAN AND DILUTE
WASTEWATER.

**1
GALLON
OF MILK**

4.5 GALLONS
OF WATER

WHY?

WATER CONSUMED BY COWS; WATER USED FOR
COOLING MILK, CLEANING AND SANITIZING
EQUIPMENT, COOLING COWS, IRRIGATING CROPS,
MAKING OTHER PRODUCTS, MOVING
MANURE, AND CLEANING THE BARN
WITH FLUSH SYSTEMS.

**ARE
THERE
SUSTAINABLE
ALTERNATIVES?**

FOR JEANS:

BUY SECOND-HAND JEANS; LOOK FOR LOCAL,
ECO-FRIENDLY CLOTHING LINES; CAMPAIGN FOR
CLOTHING STORES TO LESSEN THEIR WATER
CONSUMPTION AND TO FIND ORGANIC SUPPLIERS;
REPURPOSE OR RECYCLE DENIM FABRIC.

FOR SMARTPHONES:

BUY SECOND-HAND PHONES; RECYCLE YOUR OLD PHONES,
PETITION FOR PHONE COMPANIES TO DECREASE THEIR
WATER FOOTPRINT.

MILK:

FIND ACCESSIBLE MILK BRANDS THAT ARE
PRODUCING WITH ENVIRONMENTAL
CONSCIOUSNESS.

SOURCES:

<https://sites.psu.edu/math033sp15/2014/10/16/how-much-water-does-it-take-to-make-a-pair-of-jeans/>

<https://www.marieclaire.com/fashion/a2704547/denim-water/>

<https://www.watercalculator.org/footprint/the-hidden-water-in-everyday-products/>

https://www.cnr.zsu.edu/news/water_use_on_dairy_farms--to1-based%20on%20the%20the%20study_produce%20on%20pale%20the%20milk

