



CCS Energy and Water Management Program

Spring 2022 Focus - Understand the Source!

Understanding the source of the resources that give you electricity, heat, and water to drink is important to understanding why it is important to only use what we need.

This Spring, let's get to know our energy and water sources and how we can **identify renewable sources over nonrenewable sources**. No matter the source, it is important to always remember to only use what we need!



TIPS AND REMINDERS:

- Only use what you need
- Turn to *renewables* when you need energy or water



We need energy to power your electronics, give us light at school, and keep our homes warm during the winter. Energy can come from nonrenewable and renewable energy sources found in nature. **Nonrenewable energy sources** are sources that cannot be easily replenished like coal, oil, and natural gas. You often hear these sources called “fossil fuels”. **Renewable energy** comes from natural sources that never run out, like the wind, sun and water. Although renewable resources can change form (like water changing to steam) they never disappear completely- they are recycled in nature.

We need water to drink, grow food, make our clothes, and much more! The water that we are using is the same water that dinosaurs drank- that is because the **water on earth is continuously recycled** (thanks to the water cycle!) making it a renewable resource. However, only 1% of all the water in the world is freshwater available to everyone to use, and access to this 1% of freshwater is not equally available to everyone.



WHERE DOES ENERGY AND WATER COME FROM THAT YOU USE AT SCHOOL OR HOME?

In Charlottesville, our energy comes primarily from fossil fuels (coal or natural gas - nonrenewable sources) or solar (renewable source). In the City of Charlottesville, our water comes from surface water collected in Sugar Hollow that runs to Ragged Mountain Reservoir or comes down the Rivanna River to South Fork Rivanna Reservoir.

Energy Matching Game

Connect the natural energy source to the technology that is needed to make energy for your school. Search the work bank for the correct name for the source and technology, then fill in the correct word from the word bank. Discuss as a class each process and identify which are renewable and which are non-renewable.

WORD BANK

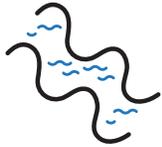
- | | |
|------------------|-------|
| Hydroelectric | Air |
| Coal Power Plant | Sun |
| Wind Turbine | Water |
| Solar Panel | Coal |











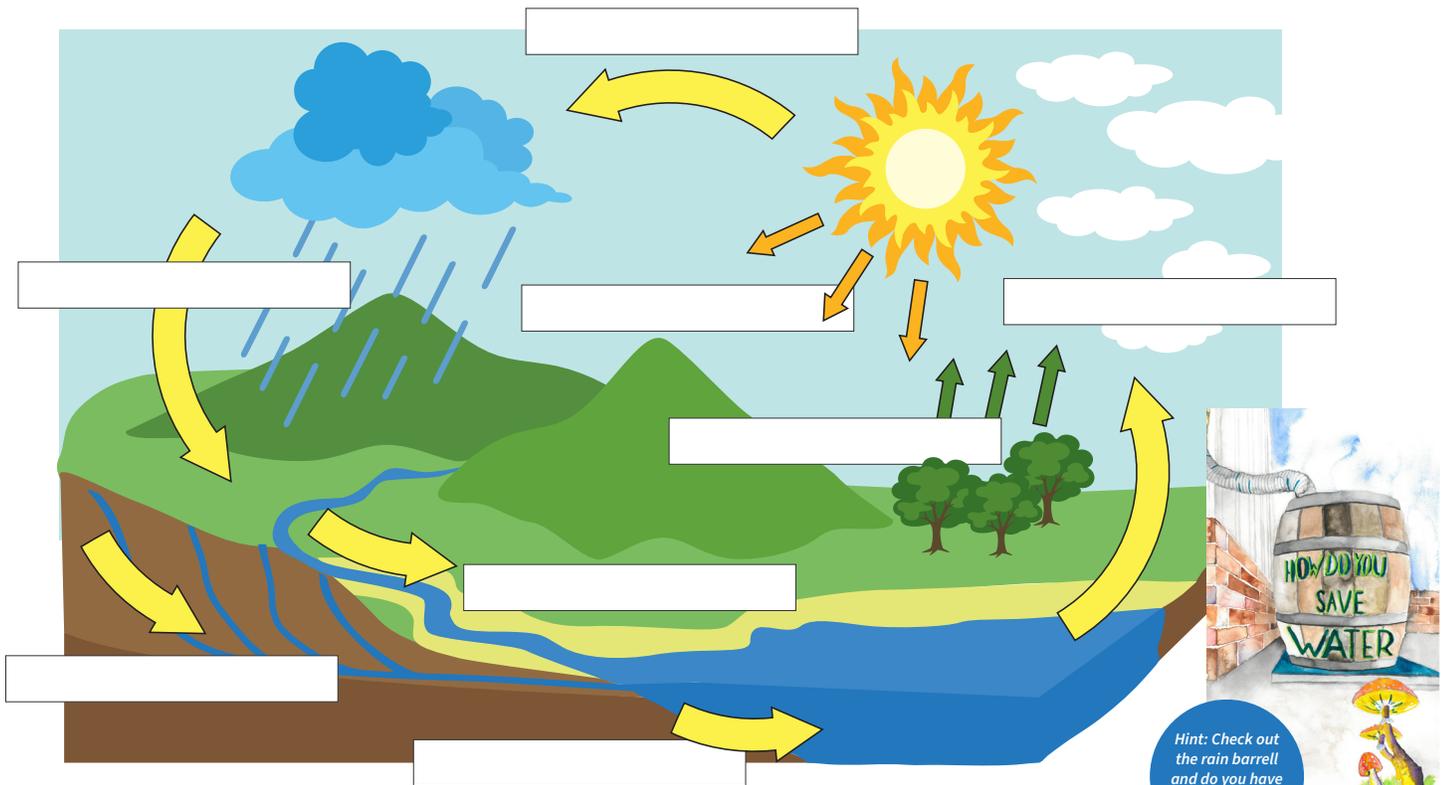






The Water Cycle

Fill in the appropriate processes in the water cycle from the word bank and discuss these processes as a class. At which part in the cycle does our drinking water come from? If you would like, you can draw your own water cycle!



WORD BANK

- | | |
|--------------------------|--------------------|
| Evaporation | Groundwater Runoff |
| Runoff | Solar Radiation |
| Infiltration/Percolation | Precipitation |
| Condensation | Transpiration |

Rainwater Harvesting

The water cycle shows water being recycled again and again. What is another great way to help reuse rainwater?

Hint: Check out the rain barrel and do you have some thirsty plants outside?