

## Ecological Cycles Part I - Draw an illustrated Diagram of The Hydrologic (Water) Cycle

Take an 11' x 17" sheet of paper and draw an illustrated diagram of the hydrologic cycle according to the following directions. Use erasable pencil at first, then color it in with crayons, colored pencils and/or pens.

Draw a landscape showing plenty of atmosphere, ocean, and land (both above and below sea level). Be sure to include a river, soil, trees, and a glacier.

Water on earth is found in the following forms:

Oceans – 97%

Ice caps sitting on Antarctica and Greenland (glaciers) – almost 3% (so make oceans & ice BIG!)

Groundwater = water underground in cracks in the rock, spaces between soil grains, etc.

Lakes and Rivers

Water vapor, clouds, rain, snow

Plant tissue

1. Put all these forms of water in your diagram. *Label them.*
2. Sunlight EVAPORATES seawater into water vapor, so draw arrows labeled “evaporation” going from the oceans into the air.
3. Sunlight evaporates river and lake water into water vapor also, so draw arrows labeled “evaporation” going from rivers and lakes into the air.
4. Water vapor (which is transparent) CONDENSES into clouds, so draw arrows labeled “condensation” going from the transparent air into clouds
5. Clouds PRECIPITATE rain & snow over the ocean and the land, so draw arrows, along with raindrops and snowflakes, going from the clouds back to the land’s and ocean’s surface.
6. Snow falling in the Arctic and Antarctic and on tall mountains is compressed into large ice sheets called GLACIERS. Make sure some of your snow is falling on a glacier.
7. Pieces of glaciers that reach the sea break off into the ocean and float away (“CALVE”) as ICEBERGS and melt. So, draw that happening and an arrow labeled “Calving Icebergs” going from a seaside glacier to an iceberg. Then draw an arrow labeled “melting” going from the iceberg to the seawater.
8. Rain falling over land PERCOLATES down into the soil and rock and becomes groundwater, so draw arrows labeled “percolation” going from the land’s surface into the soil and rock underground.
9. Groundwater flows downhill and DISCHARGES onto the surface in rivers and lakes, so draw arrows labeled “discharge” going from the groundwater into the rivers and lakes.
10. Rivers flow back into the sea, so draw that.
11. Plants (mainly trees) absorb groundwater through their roots and release it through the pores of their leaves as water vapor into the atmosphere. This is called TRANSPIRATION. So draw arrows labeled “transpiration” going from underground up into the roots of trees, up the trunks, and out into the air through the leaves.
12. Animals and people DRINK water and then EXCRETE it. Draw that (tastefully!)
13. Sketch in molecules of H<sub>2</sub>O wherever there is room in the ocean, clouds, etc.

Your instructor will show you examples.