**SALMON SMELL FACTS:**

\*The olfactory sense (smell) in salmon can be temporarily dulled or permanently damaged by toxins. A 2008 study in rainbow trout showed that a 96-hour exposure to a pesticide mixture (with the same concentration as what is found in the parts of the Columbia river) reduced their responses to natural odors, and their ability to ‘smell’ the predators in the area. Heavy metals, such as copper, are common in urban runoff.

\* Toxins affect the olfactory cells, potentially impairing their homing instinct. preventing them from detecting predators, and may cause pre-spawn mortality.

\* Salmon don’t have noses like we do. They “breathe” by taking in water through their mouths and then it goes over and out their gills. However, they do have NARES with which they can smell.

\*Salmon ‘imprint’ on a characteristic set of smells/odors created by animals, vegetation, and minerals found in the stream where they are born. Even after spending several years in the open ocean, about 95% of salmon that return to spawn can remember what their home stream smells like. Salmon can detect odors even better than a highly-trained smell sniffing dog, and may even use their skin to help them smell!

\*Salmon are native throughout many parts of the western United States, including Washington State. Salmon begin their lives in freshwater stream beds, where they live from several months, up to two years, depending on the species. Salmon leave their home river and head out to the ocean, where they live for 2-8 years, gaining weight and maturing.

\*Oceanic salmon live in large groups, called shoals, that wander throughout the northern Pacific Ocean as far as 1,000 miles from their home stream. Yet, despite all this, mature salmon overcome enormous challenges to return to their home stream to spawn (produce new salmon).

\*It has been common knowledge for more than 100 years that when migrating adult salmon reenter the fresh water system, they rely primarily upon their sense of smell (olfaction) to locate their home streams.

\* Remember, home streams are important: Every stream has a unique smell; salmon can tell the difference between the odors of different streams; salmon retain a memory of their home stream odor-called imprinting.

Cup Labels (these can be printed out and affixed to the paper cups, or you can use sticky labels to stick the letters and words to the cups)

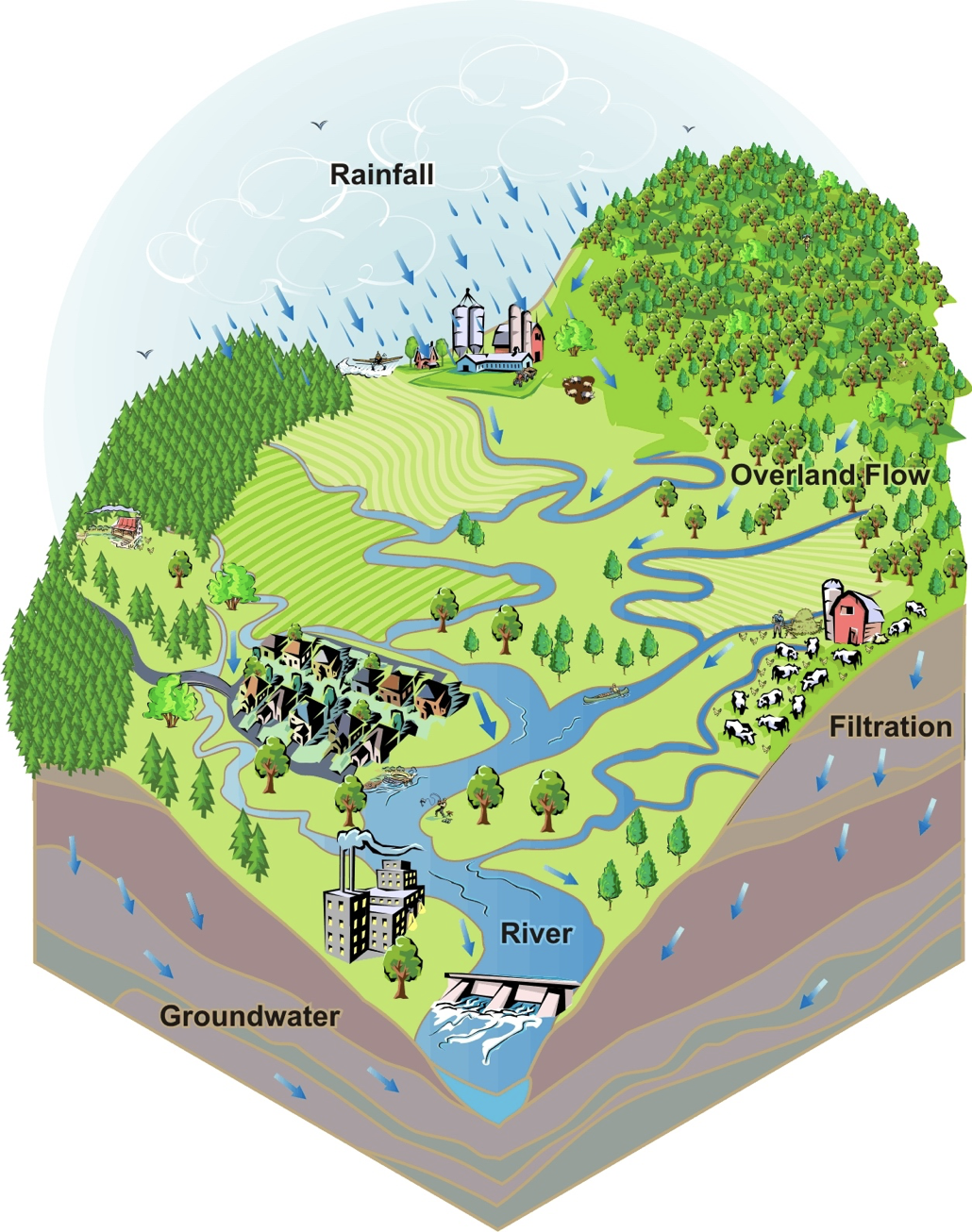
|  |  |
| --- | --- |
| A | C |
| B | D |
| Skagit River | Nisqually River |
| Puyallup River | Skykomish River |

CHEAT SHEET

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | C | D |
|  |  |  |  |

WRITE IN RIVER NAMES UNDER EACH LETTER





**Highlight/trace lines of Puyallup River, Skagit River, Skykomish River, & Nisqually River to the ocean (Salmon heavy rivers).**

