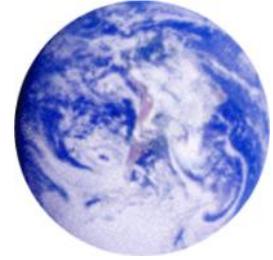


Topic 1 – A World of Water (pgs. 364 – 374)

Living systems need water to survive. Ecosystems depend on it. The land is changed by it. Industry uses large amounts of it. Climate and weather are determined by it. Our **'blue planet'** - as viewed from space - is unique among the planets in our solar system, because 74% of its surface is covered by water.



However most of the water on the Earth (about 97%) is saltwater

How Do You Depend On Water?

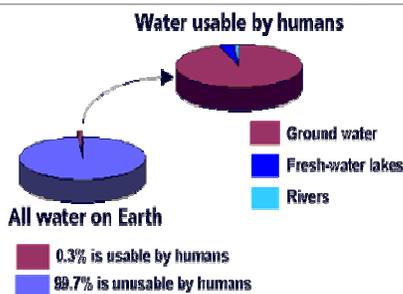
Human body cells need water to function. All organisms need water to survive and all organisms have varying amounts of water in their mass; humans 65%, apples 84% and watermelon 98%. The water in your body does not stay constant. You lose water (sweat and elimination of wastes) and you gain water – almost 2.5L per day. Water is vital for survival of all living things.

The Major Uses Of Water

There are **direct** (domestic or personal use) and **indirect** (industrial and agricultural) ways that humans use water. Many indirect uses can have negative effects on Earth's water supply. There are **benefits** and **costs** to using water.

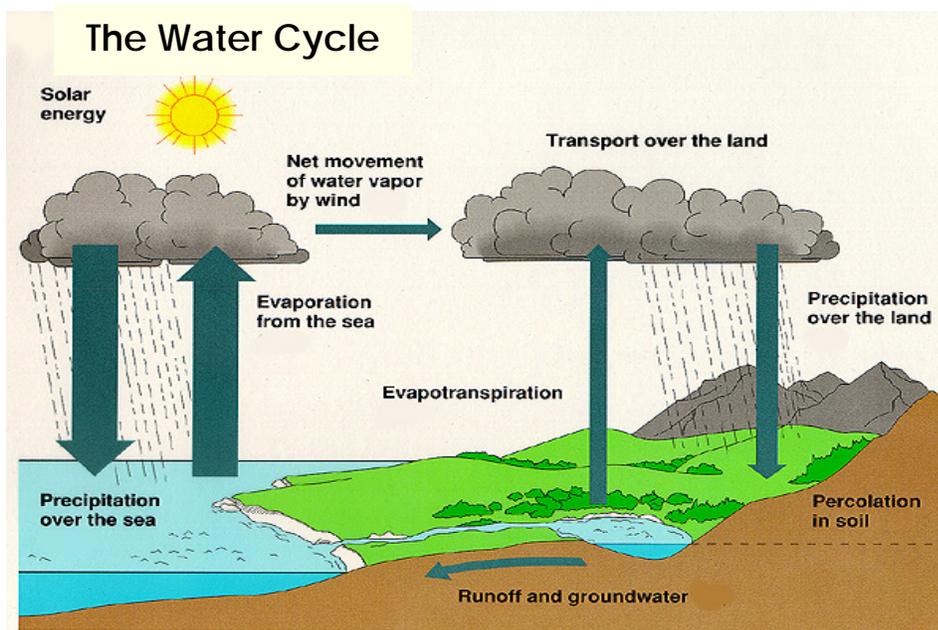
	Water Use	Direct/Indirect	Benefit (+)	Cost (-)
	Agriculture (irrigation) 73%	indirect	Food Economy Jobs	Soil salinity Decreases vegetation Depletes groundwater supplies
	Industry (coolant, solvent, washing, diluting pollutants) 22%	indirect	Jobs Consumer Products & Services	Pollution contributor Depletes groundwater supplies
	Domestic 5%	direct	Convenience Jobs	Cost

How much of Earth's water is usable by humans?



Negative effects may include:

- Pollution of surface and groundwater
- Depletion of groundwater supply



The Water Cycle controls the distribution of water on the Earth. The Sun's energy drives the water cycle. Each year 520,000 km³ of surface water moves through the cycle as water vapour.

The Distribution of Water On Earth (Water quantity – the amount of water)

Water source	Model	Percent of total water	Potable, or not?
Oceans		97.20%	Saltwater
Icecaps, Glaciers		2.15%	Frozen
Ground water		0.63%	Fresh - but not entirely accessible
Rivers, lakes, Inland seas, soil moisture and in the atmosphere		0.02%	Potable - some with Indirect access however
Total water		100%	

Water Enough For All

Water quality – the characteristics that make water suitable or unsuitable for different uses

Four countries (Brazil 18%, Canada 9%, China 9%, and United States 8%) hold nearly half of the Earth's renewable supply of freshwater.

Managing Our Water Resources

Management of our water resources means managing our water sheds by protecting them. By balancing the water needs of people, industries, wildlife and the environment. You will learn more about watersheds in Canada and Alberta in Topic 2 and 3.