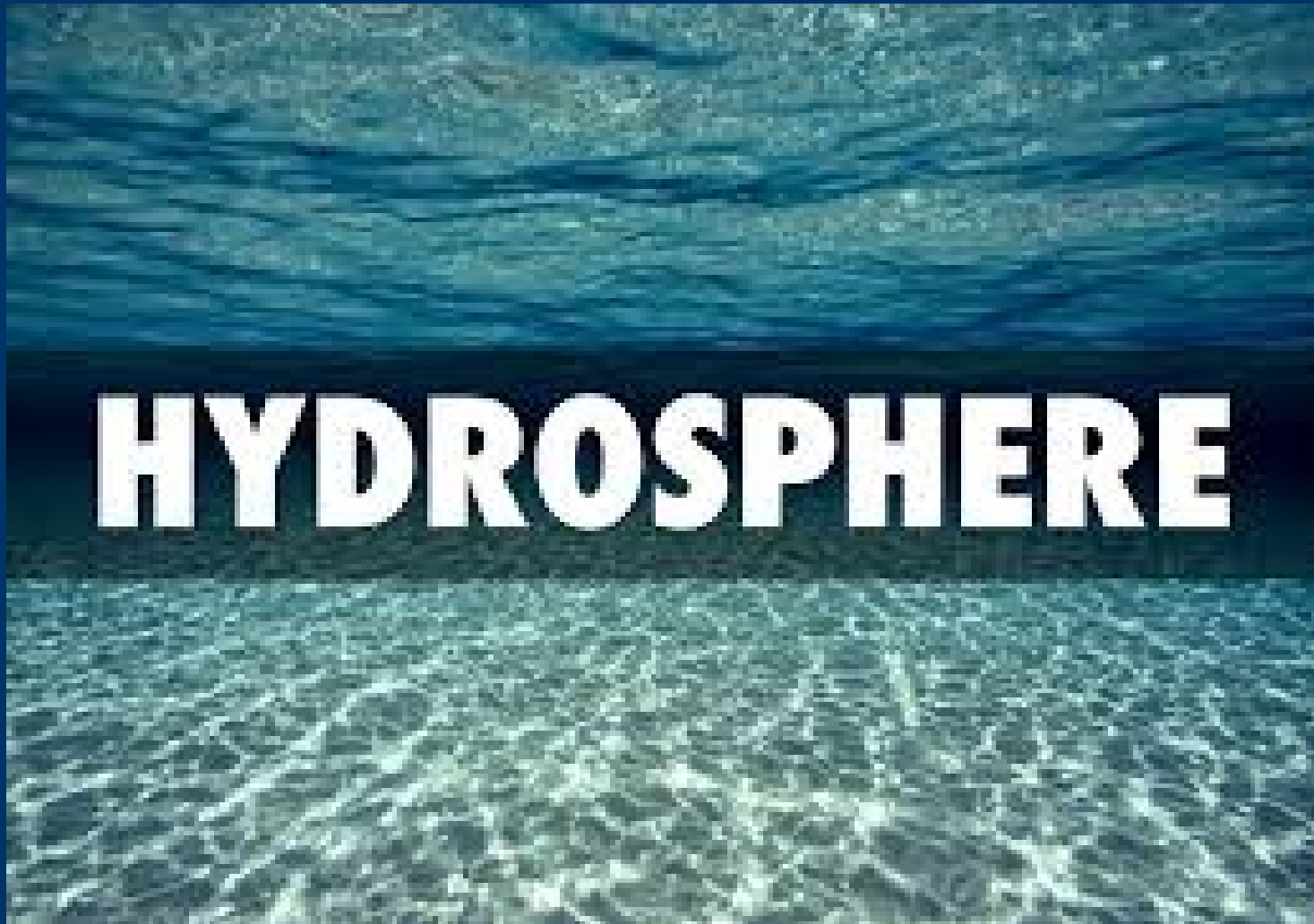


“THE LIQUID PART OF THE EARTH”



“THE LIQUID PART OF THE EARTH”

1. THE HYDROSPHERE

Three quarters of the Earth is covered with water. This water is called Hydrosphere.

- This water can be liquid, solid or vapour.
- The origin of the Hydrosphere is water vapour from the volcanic activity at the beginning of the Earth's life, which after condensing and dropping originated the oceans.
- 97% of water is in the oceans.

3% of water is freshwater. (79% ice, 20% groundwater and 1% surface water)

“THE LIQUID PART OF THE EARTH”

1. THE HYDROSPHERE

- **Properties of water:**

- **Water is a very good solvent** and is used in many life functions. Ex.: **Blood** contains water and transports dissolved nutrients and **waste products**.

- **Water has a high thermal capacity** because it heats up and cools down slowly.

- **Water reaches its maximum density in liquid state at 4°C,** so ice floats in water. It is very important for aquatic living things.



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2. THE WATER CYCLE.

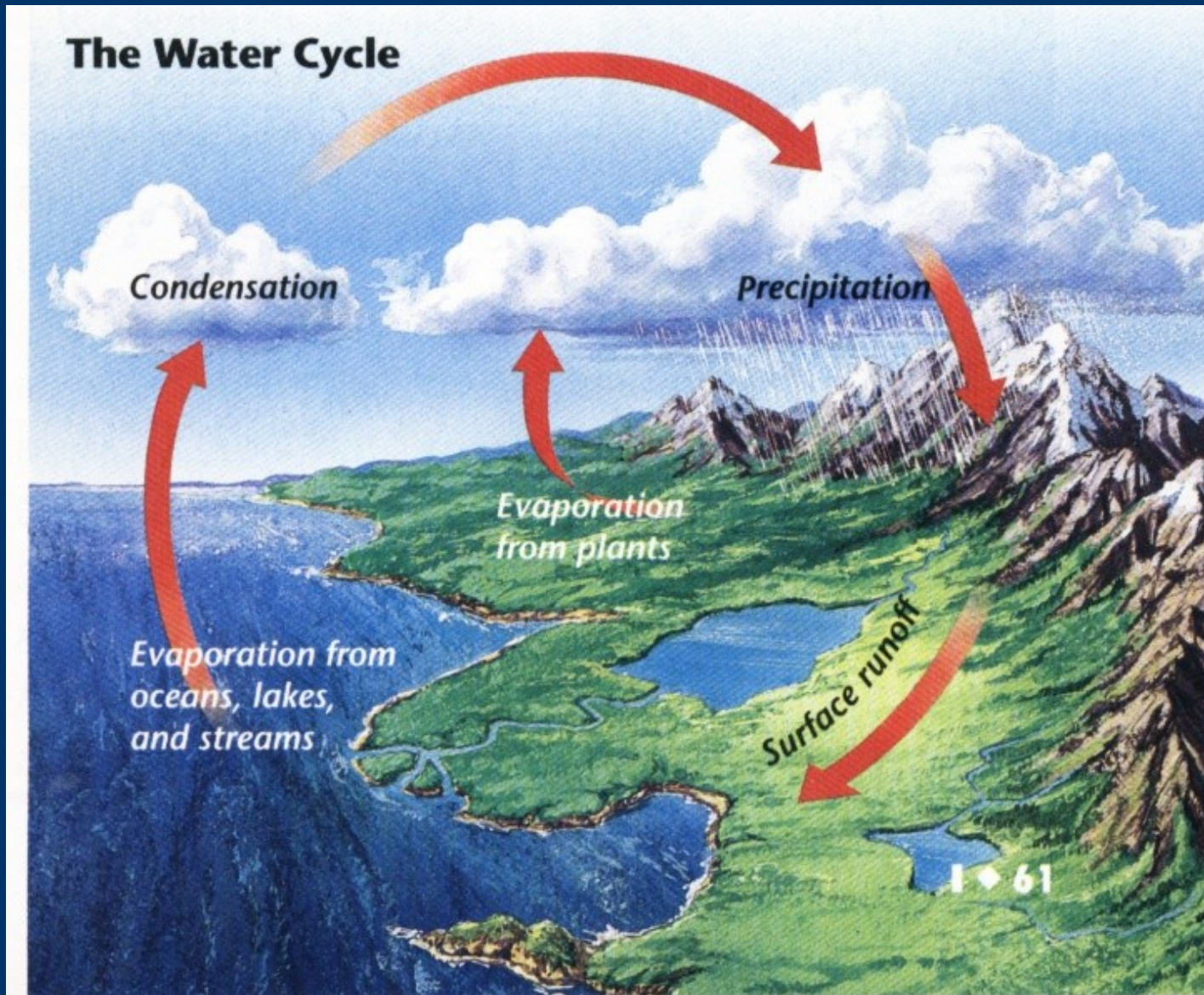
It is a continuous cycle in which water changes from water vapour in the atmosphere to liquid water on the Earth's surface and back to water vapor again.

The full process has four steps:

- The Sun evaporates the Earth's water in the oceans. The water changes into vapour, **vaporisation**.
 - Through **transpiration**, plants also release water vapour into the atmosphere.
 - Humid air rises, cools and forms clouds. Water changes from vapour to liquid, **condensation**. (Sometimes vapour condenses into ice crystals).
 - Water returns to the Earth's surface in the form of rain, snow or hail, **precipitation**, and finally flows into the oceans and seas.
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2. THE WATER CYCLE.



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3. THE EARTH'S FRESHWATER RESERVES.

Only 3% of the full water in the Earth is freshwater. It can be found in different forms:

- **Rivers and Torrents:** These both forms are water with flows along a riverbed, but in rivers the volume of water is more or less fix and the torrents are seasonal.
 - **Glaciers:** They are large amount of ice with flows slowly.
 - **Valley or Alpine glaciers:** They start in high mountain areas.
 - **Continental glaciers (Polar icecaps):** They are enormous blocks of ice that cover entire regions.
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“THE LIQUID PART OF THE EARTH”

3. THE EARTH'S FRESHWATER RESERVES.

- **Lakes and Pools:** They are depressed areas of the ground fill with water.
- **Groundwater:** Some of the water from precipitation or meltin accumulates when it reaches **impermeable** rocks and forms **aquifers**.

Water is esed by human beings for agriculture, livestock, domes-
tic, commercial and industrial.

Water is distributed very unevenly around the planet. There is
very little precipitation in most of Spain and there are often pe-
riods of **drought**. **This means we all have to think ways to save
water.**

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3. THE EARTH’S FRESHWATER RESERVES.

- Rivers:



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- **Torrents:**



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3. THE EARTH’S FRESHWATER RESERVES.

- Lakes and Pools:



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- **Valley glaciers:**



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3. THE EARTH’S FRESHWATER RESERVES.

- **Continental glaciers:**



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3. THE EARTH’S FRESHWATER RESERVES.

- Groundwater:



“THE LIQUID PART OF THE EARTH

4. THE WATER WE DRINK.

Our freshwater comes from lakes, rivers and groundwater.

- **Reservoir** are built to make more efficient use of river water.
 - **Wells** are built to extract groundwater.
 - Sometimes we **desalinate** seawater.
 - Water for human consumption undergoes a **purification process** to eliminates **impurities** and pathogenic **microorganisms**.
 - **Wastewater treatment** is different and consist of treating urban sewage in **wastewater-treatment plants** so we can use the water again.
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“THE LIQUID PART OF THE EARTH

4. THE WATER WE DRINK.

- THE PROBLEM OF POLLUTION:

Water can be polluted by sewage (**blackwater or faecal water**), by **agricultural activity** or by **industrial wastes**.

Acid rain is caused by the emission of certain pollutants into the atmosphere, and harms all living things.

- Groundwater quality depend of:

- The infiltrations of chemical substances. Ex. Nitrates.

- Seawater intrusions into aquifers because of overexploitation of aquifers.

- Waste material dissolved in water filters down into the ground.

“THE LIQUID PART OF THE EARTH

4. THE WATER WE DRINK.

- **THE PROBLEM OF POLLUTION**

- **River pollution:**

- River pollution is produced by urban, agricultural and industrial wastes.

- **Other important sources of pollution are:**

- The maintenance and cleaning of oil tankers.

- The direct **dumping** of wastes into rivers.

- Factories that send their wastes through pipes into the sea.

