**SUSTAINABILITY**

**Biosphere**: The zone of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in which we live.

**Sustainability**: To meet our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the ability of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ generations to meet their needs.

We have to consider 3 areas:

-A sustainable solution to meeting energy needs would require that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ not be used faster than they can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and doesn’t \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the environment

-It should ensure that people’s\_\_\_\_\_\_\_\_\_\_\_ are not compromised, nor are those of future generations

-it should not threaten \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ traditions or social institutions of future generations

**Water – Earth is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Water**

-WORLD: \_\_\_\_\_\_\_\_\_\_\_ Salt Water; \_\_\_\_\_\_\_\_\_\_\_ Frozen or Underground; \_\_\_\_\_\_\_\_ Lakes, Streams.

-Canada has about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the world’s fresh water!

Freshwater is acquired from:

**Surface water 🡪** (\_\_\_\_\_\_\_\_\_\_\_\_\_\_, streams, lakes, \_\_\_\_\_\_\_\_\_\_\_\_\_, snowfields)

**Aquifers 🡪** (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water, table water)

Pros 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than surface water, easily accessible, less costly than storing)

Cons 🡪 slow to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(seeps through porous rock)

**Water Facts:**

* Over the next 20 years, the average supply of water worldwide, per person, is expected to drop by a third
* There are more than \_\_\_\_\_\_\_\_\_\_\_ million people who \_\_\_\_\_\_\_\_\_\_\_\_\_ each year from illnesses caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water supplies
* Over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of people in Africa suffer from water-related diseases
* Worldwide water consumption has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in the last 50 years
* A child in a developed country uses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ more water than his/her counterpart in the developing world
* Many people believe that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the next century will be over water

**Ecological Footprint**

**“Carrying Capacity”** 🡪 the # of people the Earth can support without using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ faster than the planet can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ them.

**“Ecological Footprint”🡪** determines the amount of productive\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_area it takes to provide the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ consumed by an individual or a population (includes farmland, fishing areas, forests, lakes and aquifers, disposal areas, area necessary to provide energy and jobs)

1992 –**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Earth Summit Conference: Harmonize \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Encourage \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ development. (Agenda 21)

**OZONE LAYER DEPLETION**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (Chlorofluorocarbons) from refrigerators and aerosol cans were released into the atmosphere in abundance through the 50s – 80s.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attaches itself to the \_\_\_\_\_\_\_\_\_\_\_ in ozone, \_\_\_\_\_\_\_\_\_ up the ozone layer.

This layer protects our earth from harmful \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ radiation from the sun.

The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, signed in 1987, was a fairly successful international agreement that limited the use of CFCs.

**CLIMATE CHANGE – GLOBAL WARMING**

**3 gases responsible for keeping our climate habitable = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Carbon dioxide** 🡪 produced mainly through the burning of fossil fuels

**Methane** 🡪 produced by cattle grazing and rice cultivation

**Nitrous Oxide** 🡪 produced through deforestation

**Short Wave Radiation** enters the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as it is reflected as **Long Wave Radiation** by those 3 gases.

**Effects 🡪** overall Earth’s temperature has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by 1o in the last 100 years

* Polar ice caps are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, sea levels will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Oceans temperatures have changed, altering \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ecosystems
* Oceans temperatures have increased, creating stronger and more frequent \_\_\_\_\_\_\_\_\_\_ and typhoons
* New \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ have developed; Others are expanding
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1997 – **\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_**: Reduce \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ emissions.

**Agriculture and Soil**

When a wilderness area is converted to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, entire ecosystems can \_\_\_\_\_\_\_\_\_\_\_\_.

When land is tilled, moisture escapes and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is lost.

To compensate, farmers irrigate their land and use artificial fertilizers. In some cases this makes the soil too salty and infertile

**Chemicals** – the use of **pesticides** and **herbicides** often \_\_\_\_\_\_\_\_\_\_into nearby \_\_\_\_\_\_\_\_sources.

**Desertification** – the loss of moisture in soil can cause a permanent state of aridity, causing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to spread. The Sahel in Saharan Africa is continuing to spread south into the fertile areas of tropical grasslands due to the overuse of the land

**Genetically Modified Foods** 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are altered by having a spliced gene from another organism added into them.

-these crops can cost \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, use fewer pesticides and increase yield

-no long-term testing has been conducted, so \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_could be presented.