

# Masters for transparencies

## 5.1 Term 1

materie en materialie

Eliminatie-reactie

- Dehidrohalogenering  
Hint: basis opgelos in etanol → Alleen + water + halidesout
- Dehidriering  
Hint: zwavelzuur → Alleen + water
- Ternaire kalking  
Toestand: heet temperatuur; heet druk; geen katalysator → Mengsel van alkeno vorm.
- Katalytische kalking  
Laag temperatuur; in katalysator; gematigde laag druk → Kort ketting alkeno vorm.

1.7.2.1 Dehidrohalogenering

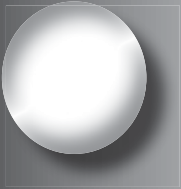
Reaktievoorstand:  
Temperatuur: Word sterk verhit;  
Toestand: Stank bakken; NaOH of KOH in suiver etanol opgelos; warm etanolose NaOH of KOH.  
Produkt: Alleen + water +

$\begin{array}{c} \text{---C---C---} \\ | \quad | \\ \text{H} \quad \text{Y} \end{array}$

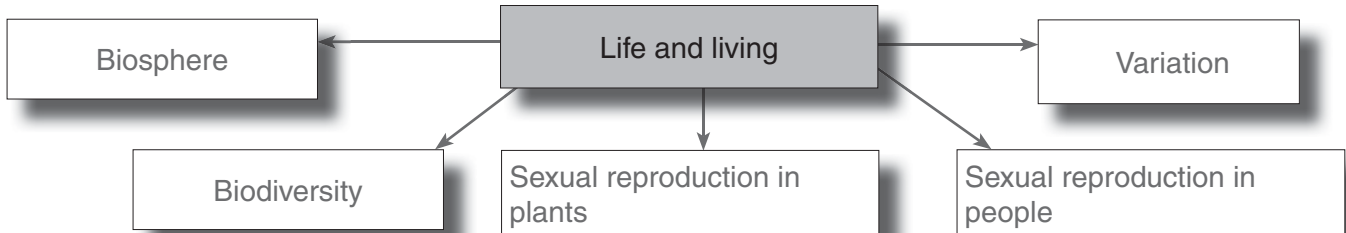
Voorbeelde:

$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H---C---C---H} \\ | \quad | \\ \text{H} \quad \text{Br} \\ \text{bromostaan} \end{array} + \text{Na---O} \xrightarrow[\Delta]{\text{stom}} \begin{array}{c} \text{H} \quad \quad \text{H} \\ \quad \quad \quad \backslash \quad / \\ \quad \quad \quad \text{C} = \text{C} \\ \quad \quad \quad / \quad \backslash \\ \text{H} \quad \quad \quad \text{H} \\ \text{eteen} \end{array} + \text{Na---Br} + \text{H---O}$

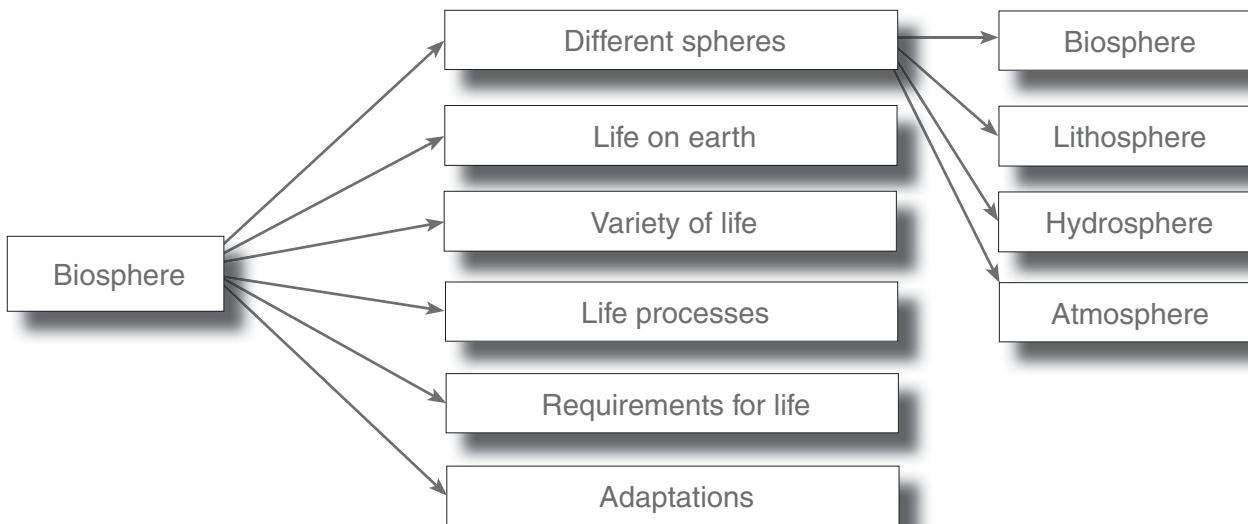
126 CHEMIE voorbereidingsjaar - Graad 12 Doe Bolesia



# TERM 1: LIFE AND LIVING



## UNIT 1 BIOSPHERE



### 1.1 Different spheres

- Biosphere (plants and animals)
- Lithosphere (land)
- Hydrosphere (water)
- Atmosphere (air)





See if you can identify each sphere.



### 1.1.1 Biosphere

The biosphere is the part of the earth in which all life exists.

Each of the spheres can be seen in the photos below.





### 1.1.2 Lithosphere

The lithosphere is the hard outer layer of the earth.



#### Quick facts

Photosynthesis is the process whereby green plants produce starch.

#### Examples

Earthworms can be found in loam soil, but not in sand.

Quiver trees grow in sandy soil.

Klipspringers and hyraxes live in rocky areas.

### 1.1.3 Hydrosphere

The hydrosphere is all water in different forms on earth.

The hydrosphere includes the following:

- Oceans
- Rivers
- Lakes
- Underground water
- Ice at the Poles
- Moisture in the air

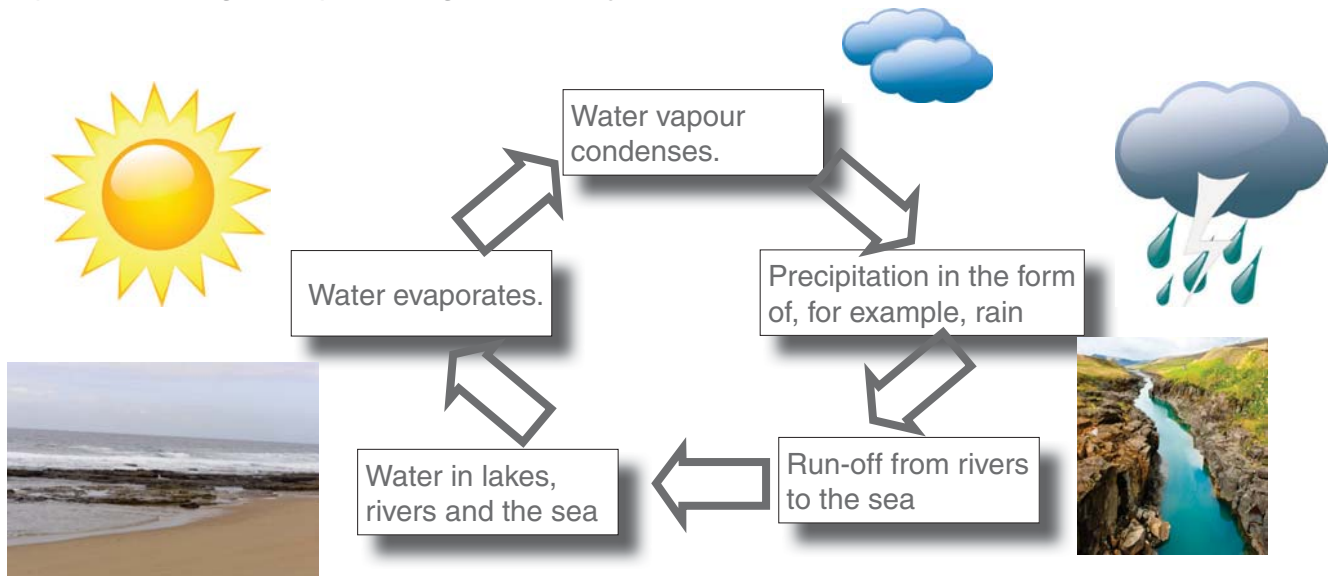


#### Quick facts

Water is the only substance that occurs naturally as solid, liquid and gas.



Simplified flow diagram representing the water cycle:



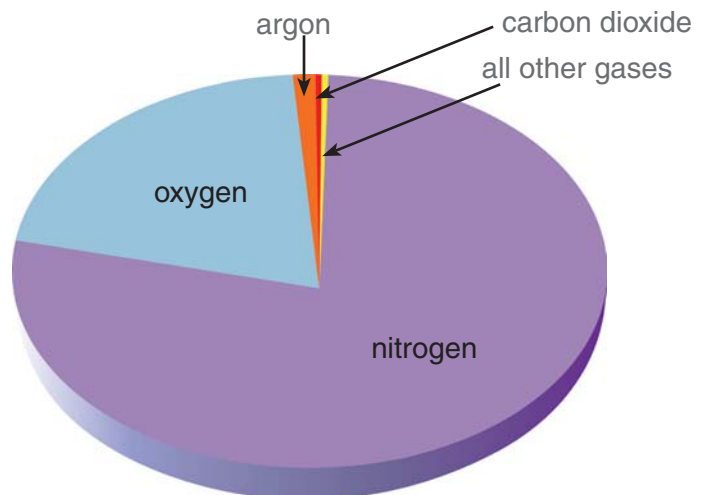
### 1.1.4 Atmosphere

The atmosphere of the earth is a layer of gases around the planet.

Dry air contains:

- nitrogen,
- oxygen,
- argon,
- carbon dioxide and other gases (neon, helium, methane, krypton and hydrogen).
- Air also contains a certain amount of water vapour. This is water molecules that occur in the form of a gas in the atmosphere.

Composition of the earth's atmosphere



The atmosphere protects life on earth by:

- absorbing harmful ultraviolet rays from the sun.
- keeping the heat of the sun inside the atmosphere so the temperature on earth can remain warm.
- decreasing fluctuations in temperatures between day and night.



## Exercise 1: Page 20

1 Describe each of the following terms:

1.1 Biosphere

**The part of the earth in which all life exists.**

1.2 Lithosphere

**The hard outer layer of the earth and the mantle that is found just below the crust.**

1.3 Hydrosphere

**Water that is found above and under the earth's surface, as well as in the form of water vapour in the atmosphere.**

1.4 Atmosphere

**A layer of gases found around the planet.**

2. Name the sphere that is represented by each number on the sketch below.



1. Atmosphere
2. Hydrosphere
3. Lithosphere

3 Give two examples of water in each of the following states as it occurs in nature on earth.

3.1 Solid

**Solid: Ice, snow, hail, frost (any two examples)**

