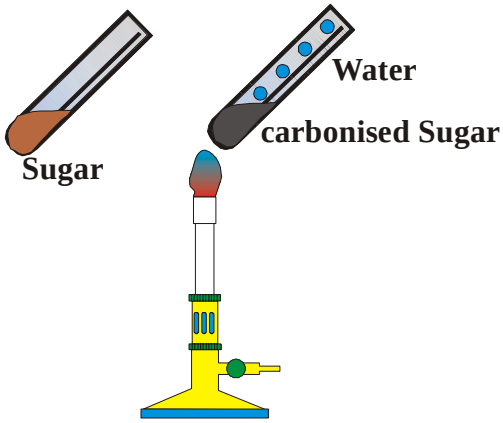
The nutrition science

1. The carbohydrates

The chemical compound of the carbohydrates:

Experiment: Sugar will heated in a test tube.

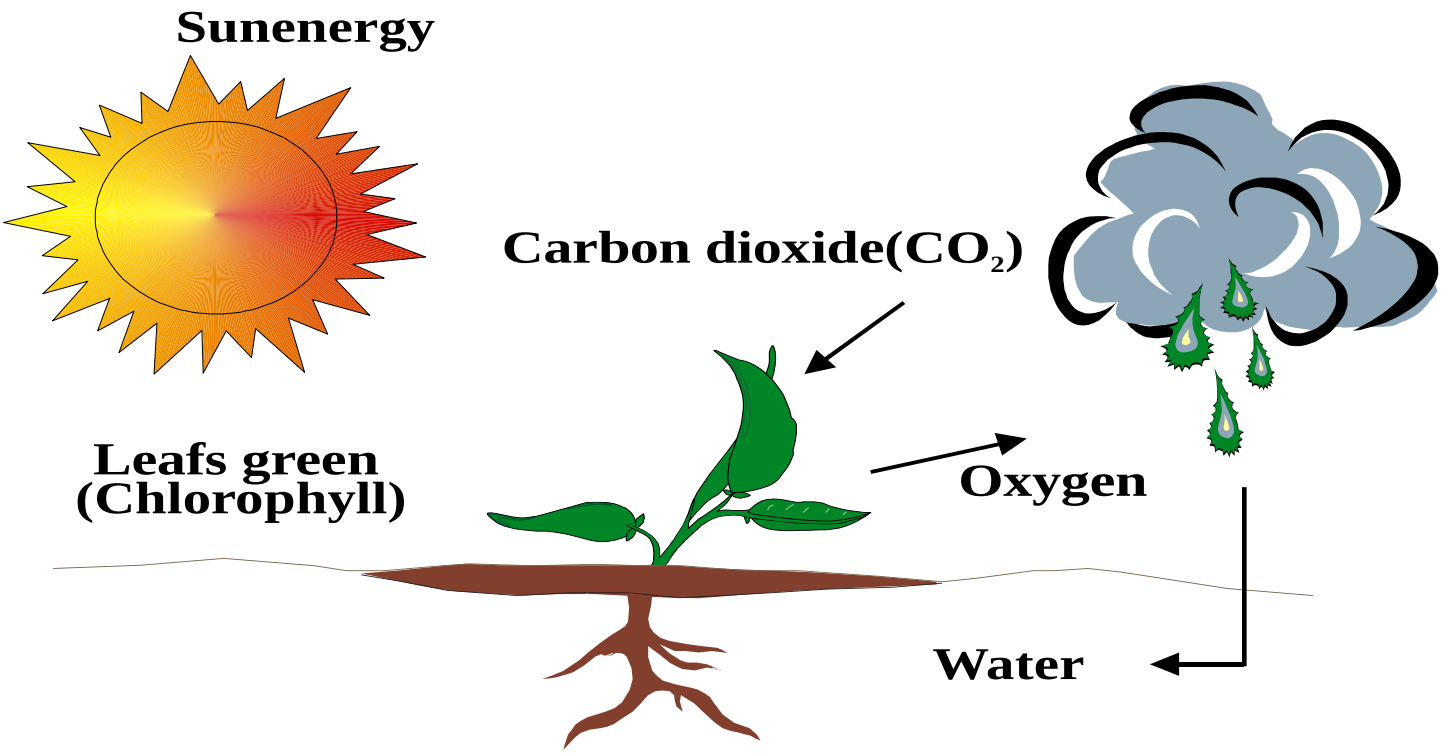


Observation		Result
1. The water steam is cast down on glass wall	⇨	Hydrogen (H) Oxygen (O)

Carbohydrates base on certain elements

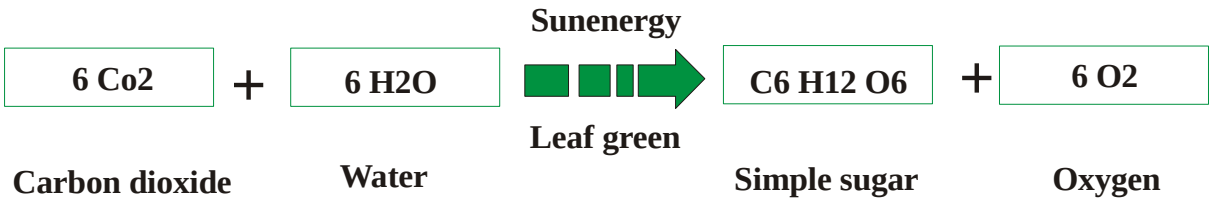
2. Sugar carbonised	⇨	Carbon (C)

The Photo Synthesis



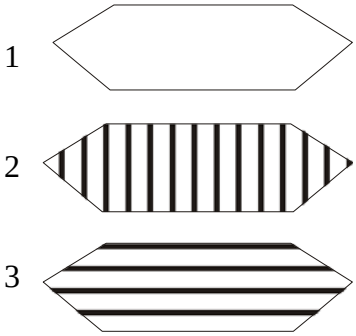
To build the carbohydrates, the plant needs carbon dioxide from the air and water from the soil. The necessary energy she gets from through the sunlight, which will catch from the leaf green (Chlorophyll). During this process, oxygen will emit to the air

The formula from the carbohydrates for the structure in the plant:

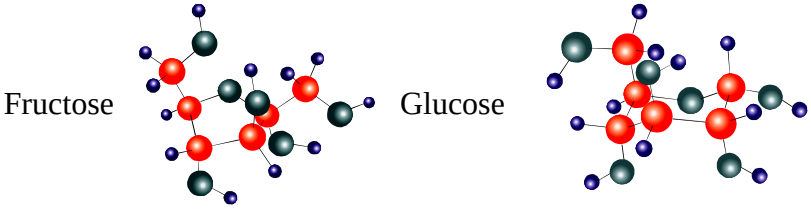


The kinds of sugar

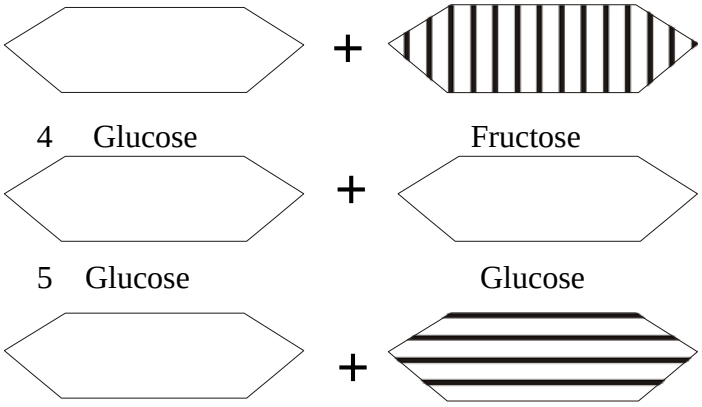
1. The simple sugar



	Kind of sugar	Deposits
1	Glucose	Fruits and honey
2	Fructose	Fruits and honey
3	Galactose	Fruits and honey



2. The double sugar



	Kind of sugar	Deposits
4	Saccharine	Sugar cane and Sugar beet
5	Maltose	Grain and beer
6	Lactose	Milk and dairies

3. Multi sugar

Multi sugar base on 100-5000 molecules of simple sugar

Kind of sugar	Deposits
Starch	Grain, grain products, potatoes and pulse
Glycogen	Liver and muscles
Cellulose	Wood, truss stays from plants
Dextrin	Create during heating of starch (For example while baling bread)
Pectin	Especially for unripe fruits (apples)

The sense for the human body:

- Carbohydrates are energy materials (1g KH liefert 17,2 kj)
- Carbohydrates are reservoir substances (Glycogen in the liver and muscles)
- Carbohydrates, playing also an important part to build up bones and saliva
- Cellulose is also ballast substance
- 5-7g per kg body weight or 50-55% from the whole energy demand should come from the carbohydrates

The characters and the sense for the practise

Carbohydrates	Character	Application / Sense
Glucose	☑ Few sweat ☑ Water attractive ☑ Water soluble ☑ Easy to digest	Preservatives for the making of jams and jelly's
Fructose	☑ Fermentable ☑ Very sweat	Manufacturing of alcoholic beverages
Sugar cane or sugar beet	☑ Sweat ☑ Water soluble ☑ Hygroscope ☑ Caramelising	To sweeten of certain dishes, as preservative, for caramel and to colouring foods
Maltose or malt sugar	☑ Few sweat ☑ Water soluble	To make beer and malt candies
Starch	☑ Tasteless ☑ Pouring in water ☑ Not soluble in cold water ☑ Get sticky on 70°C	For the preparation of bakeries, desserts and to bound soups and sauces
Dextrin	☑ Few sweat ☑ Soluble in water	To get roast and aroma substances, for the making of crusts and browning
Cellulose	☑ Tasteless ☑ Not digestible ☑ Water soluble	Ballast material, stimulating for the intestine (Peristaltic)
Glycogen	☑ Sweetish ☑ Water soluble	Reservoir in the liver and muscles
Pectin	☑ Tasteless ☑ Get jelly shade after cooking with sugar and fruit acids	For the making of jams and jellies as well as cake icings