



ORGANIC COMPOUNDS

ORGANIC – SCIENTIFIC DEFINITION

- “Of, or relating to, an organism”
- Something that comes from living things
- Does this match your definition?

6TH GRADE REVIEW

ELEMENTS AND COMPOUNDS

Element – the basic building blocks of matter; cannot be broken down or changed using chemical means; Each element is made of specific types of atoms

All of the known elements are shown on the Periodic Table of Elements

6TH GRADE REVIEW ELEMENTS AND COMPOUNDS

Compound – a substance made by chemically combining *two or more elements* to form a new and different substance; the bond cannot be broken by physical means

6TH GRADE REVIEW – ATOMS AND MOLECULES

Atom

The smallest piece of matter; different kinds of atoms make up different elements

Molecule

A structure made of more than one atom chemically bonded together

COMPOUNDS OR ELEMENT?

Element



O_2
(oxygen)



H_2
(hydrogen)

Element

Element



N_2
(nitrogen)



CO
(carbon monoxide)

Compound

Compound

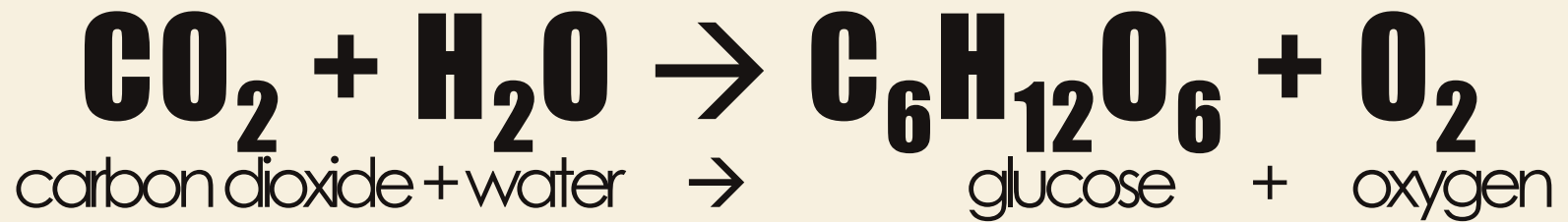


CO_2
(carbon dioxide)



H_2O
(water)

Compound



LOOK AT THIS CHEMICAL EQUATION. THIS REPRESENTS THE CHEMICAL REACTION INVOLVED DURING PHOTOSYNTHESIS.

- Which of these substances is a compound?
- Which of these substances is an element?
- Which of these substances is a molecule?
- Which elements make up the organic compound GLUCOSE?
- CO_2 , H_2O , $\text{C}_6\text{H}_{12}\text{O}_6$
- O_2
- All of them (a structure made of more than one atom of any kind chemically bonded together)
- Carbon, Hydrogen, Oxygen

LOOK AT THE PERIODIC TABLE

In your journal, write 5 elements that you think are the most common in the human body.

CHONPS

C

H

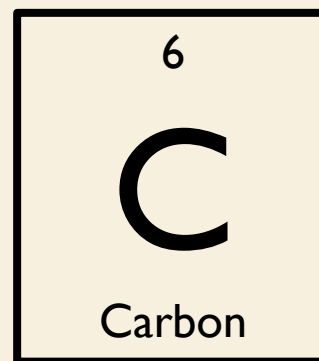
O

N

P

S

- Find each of these elements on the periodic table
- On page 4 in your journal, draw the element boxes for each of these elements. Include the **name, symbol, and atomic number** for each element.



CHONPS

C – Carbon

H – Hydrogen

O – Oxygen

N – Nitrogen

P – Phosphorus

S - Sulfur

- These elements are the elements that are found in **organic compounds** (compounds that living things are made of)
- At the top of your page, label these “ORGANIC ELEMENTS”
- Living things are made of many elements, but these are some of the most abundant

CARBON

- Carbon is a very special element, because it can form chemical bonds with up to 4 elements.
- Carbon compounds can have many different arrangements.
- Because it is so versatile, it forms the basis of all life.

ORGANIC COMPOUNDS

- Compounds that contain Carbon and can be involved in living processes.
- Organic Compound Types
 - Carbohydrates
 - Lipids
 - Proteins
 - Nucleic Acids

CARBOHYDRATES

- Organic Compound
- Sugars, starches, fibers
- Foods: fruits, grains, milk products, vegetables
- **CHO** – made of Carbon, Hydrogen, and Oxygen only
- **ENERGY!** Used by cells for energy!



LIPIDS

- Organic compound
- Fats, waxes, oils
- Foods: oils, animal fats, milk products, nuts, fish
- **CHO** – made of Carbon, Hydrogen, and Oxygen only
- Make up cell parts, energy storage, help with cell-to-cell communication



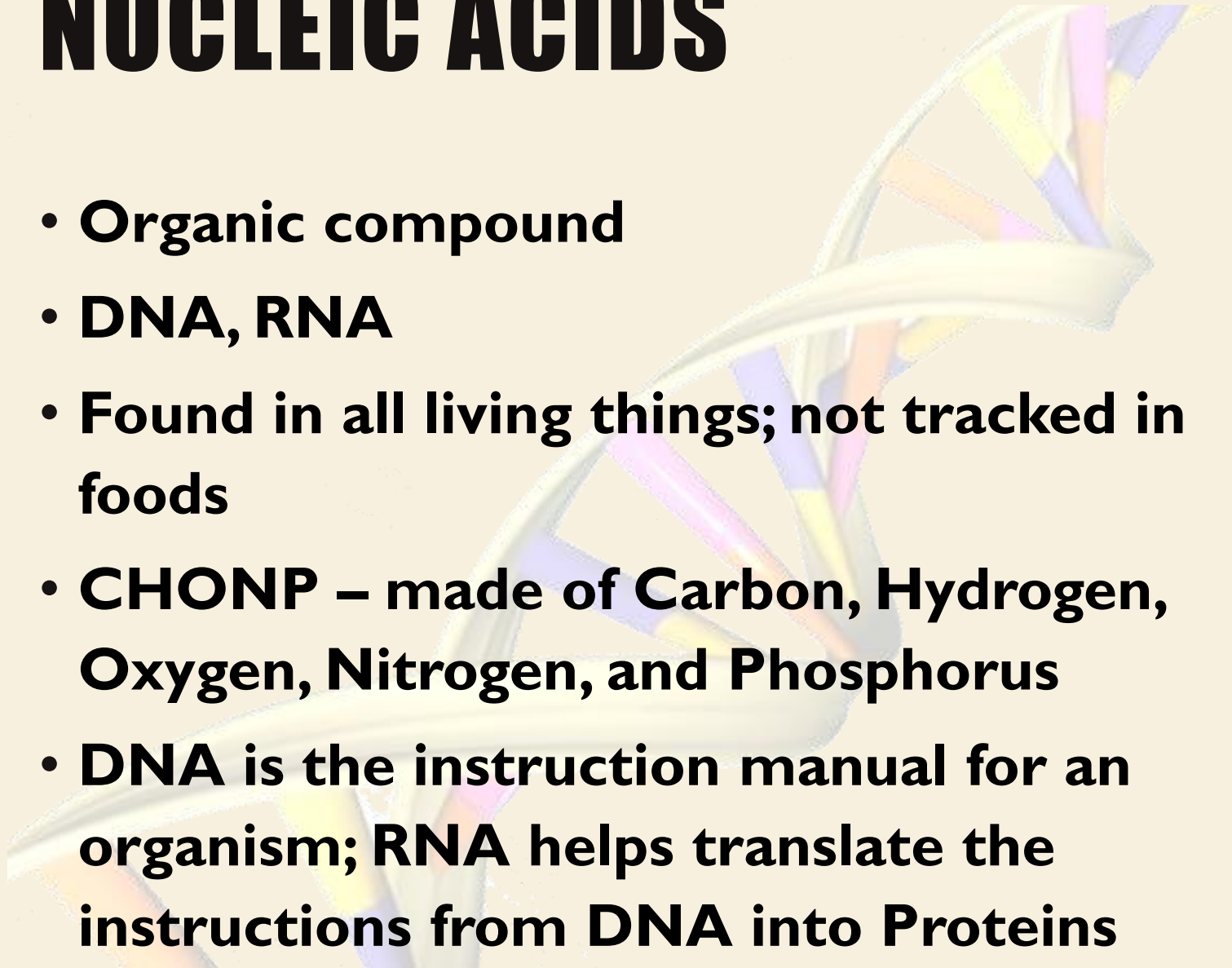
PROTEINS

- Organic compound
- Foods: meat, fish, beans, peas, eggs, soy, nuts, seeds, milk products
- CHONS – made of Carbon, Hydrogen, Oxygen and Nitrogen. Some also made with Sulfur
- SO MANY USES! Your body functions with proteins! Enzymes, antibodies, cell structures, hormones, molecule transport and storage throughout body



NUCLEIC ACIDS

- **Organic compound**
- **DNA, RNA**
- **Found in all living things; not tracked in foods**
- **CHONP – made of Carbon, Hydrogen, Oxygen, Nitrogen, and Phosphorus**
- **DNA is the instruction manual for an organism; RNA helps translate the instructions from DNA into Proteins**



ORGANIC COMPOUNDS RECAP

- **Carbohydrates** CHO ENERGY!
- **Lipids** CHO stores energy, cell parts
- **Proteins** CHONS structures, enzymes, hormones
- **Nucleic Acids** CHONP genetic material (DNA)