

# Do Now (5 min)

## 1-27-11

1. What is an **ion**
2. What are the **two types of chemical bonds**?
3. Describe what happens during each type of bond.
4. What is a **molecule**?
5. What is a **compound**?

# The Chemicals in Cells

1-27-11

# 1-26-11 Agenda

1. Do Now (5 min)
2. Objectives (2.5 min)
3. **Finish** Radioactive Isotopes (5 min)
4. Organic vs. Inorganic (5 min)
5. Inorganic Chemicals In Cells (20 min)
6. Current Events Articles
7. Closing (2.5 min)
8. Exit Slip (5 min)
9. Participation Grades (5 min)

## Objectives (3 min)

- Content (The objectives you'll master today)
- **SWBAT:**
  1. *List the most common organic and inorganic substances in cells*
  2. *Describe the purpose of the most common organic and inorganic substance in cells*
- Language (How you will master the objectives)
- **By:**
  1. *Writing notes based on the PowerPoint*

## Finish Radioactive Isotopes (5 min)

Objective: SWBAT: *Explain the two major ways atoms bond to form molecules and compounds by drawing atomic models and discussing the topic in class*

Together, lets read, p. 32

# Organic vs. Inorganic (5 min)

Objective: SWBAT: *List and describe the purpose of the most common organic and inorganic chemicals in cells by taking notes based on the PowerPoint*

Chemicals that are used in any of your metabolic processes: (body processes) can be divided into two categories.

## Organic Substances:

-substances that **do not** contain C (carbon)

## Inorganic Substances:

-substances that **do** contain C (carbon) and H (hydrogen)

-usually dissolve in H<sub>2</sub>O (water) to release **ions**

# Inorganic Chemicals in Cells (10 min)

Objective: SWBAT: *List and describe the purpose of the most common organic and inorganic chemicals in cells by taking notes based on the PowerPoint*

## The 4 Most Common [Inorganic](#) Substances in Cells

### H<sub>2</sub>O (Water)

- most abundant chemical in humans
- Responsible for approx. 2/3 to ¾ of a humans weight
- The most major component of blood
  - Helps carry substances around the body
- Many things dissolve in H<sub>2</sub>O (Water)
- Can absorb and transfer heat from muscle movement



# Inorganic Chemicals in Cells (10 min)

Objective: SWBAT: *List and describe the purpose of the most common organic and inorganic chemicals in cells by taking notes based on the PowerPoint*

## The 4 Most Common [Inorganic](#) Substances in Cells

### O<sub>2</sub> (Oxygen)

- enters the body through the respiratory organs (lungs)
- Connects to blood cells → transported around the body
- Used to release the energy stored in sugar (*glucose*) molecules → energy used to “power” the cell





# Inorganic Chemicals in Cells (10 min)

Objective: SWBAT: *List and describe the purpose of the most common organic and inorganic chemicals in cells by taking notes based on the PowerPoint*

## The 4 Most Common **Inorganic** Substances in Cells

### CO<sub>2</sub> (Carbon Dioxide)

- a waste product of **cellular respiration**: (the break down of sugar (*glucose*) into a usable form)
- Released through exhaling
- Plants need this to survive!
- Created by burning things
  - a **greenhouse gas**: (a gas that contributes to global warming)



# Inorganic Chemicals in Cells (10 min)

Objective: SWBAT: *List and describe the purpose of the most common organic and inorganic chemicals in cells by taking notes based on the PowerPoint*

## The 4 Most Common [Inorganic](#) Substances in Cells

### Inorganic Salts

-Some inorganic salts are:

- Sodium ( $\text{Na}^+$ )
- Chlorine ( $\text{Cl}^-$ )
- Potassium ( $\text{K}^+$ )
- Calcium ( $\text{Ca}^{+2}$ )
- etc...

-Used to transport substances in/out of cells

-Used to contract/expand muscles

-Used to send nerve impulses



# Closing/**HW** (5 min)

- Did you master the following objectives?

Content (The objectives you'll master today)

**SWBAT:**

1. *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Language (How you will master the objectives)

**By:**

1. *Drawing atomic models*
  - a) *Writing notes based on the PowerPoint*

## Exit Slip (5 min)

1. What is the difference between **organic** and **inorganic** substances?
2. What are the **4 most common inorganic substances** in the human body?
  3. What **purpose** does each of those substances serve?

# Participation Grades (5 min)

- Each day **YOU** will decide the grade you deserve...Though, I reserve the right to change these.
- Your 5-point daily participation grade is based on CLA's core-values:
  - CLA Students are S.M.A.R.T.
    - S = Self-Controlled
    - M = Motivated
    - A = Accountable
    - R = Respectful
    - T = Timely
  - One point for each core-value
    - (5 points possible each day)
- What do you deserve today?