

## Content competencies

*These are content competencies that will be addressed in individual units over the course of the three terms.*

### **BIOLOGY**

#### **Bio 1.**

I can describe the structure of DNA and explain the role that it fulfills in the cell.

#### **Bio 2.**

I can identify and describe different types of gene mutations.

#### **Bio 3.**

I can identify and describe the stages of mitosis.

#### **Bio 4.**

I can describe the steps of the cell cycle.

#### **Bio 5.**

I can name and describe the different forms of asexual reproduction.

#### **Bio 6.**

I can make comparisons between asexual and sexual reproduction.

#### **Bio 7.**

I can identify and describe the stages of meiosis.

#### **Bio 8.**

I can differentiate between meiosis and mitosis.

#### **Bio 9.**

I can define gamete, zygote and embryo.

#### **Bio 10.**

I can describe reproductive technologies and explain why they are used.

### **CHEMISTRY**

#### **Chimie 1.**

I understand the evolution of atomic theory developed by Dalton, Thomson, Rutherford and Bohr.

#### **Chimie 2.**

I can draw Bohr models to represent atoms.

#### **Chimie 3.**

I can identify properties of elements using the periodic table.

#### **Chimie 4.**

I can identify ionic and covalent bonds and describe how they are formed.

#### **Chimie 5.**

I can write a chemical formula for an ionic compound if given its name.

#### **Chimie 6.**

I can write the name of an ionic compound if given its chemical formula.

### **PHYSICS**

#### **Phys 1.**

I understand the nature of electric charges and how they interact with insulators and conductors.

#### **Phys 2.**

I can explain how electric charges can be transferred through induction and conduction.

#### **Phys 3.**

I know what electrical potential energy is and how it's related to cells and batteries.

#### **Phys 4.**

I can demonstrate my understanding of electric current using analogies and diagrams

#### **Phys 5.**

I know the difference between a series circuit and a parallel circuit and how they affect voltage, current, and resistance.

#### **Phys 6.**

I can use Ohm's law to calculate voltage, current and resistance.

#### **Phys 7.**

I can draw and interpret electric schemas.

#### **Phys 8.**

I can calculate power using voltage and current.

#### **Phys 9.**

I can calculate energy consumption using information on power.

## *General Competencies*

These are general science competencies that will be revisited across multiple units throughout the entire year.

### Questioning

**Ques. 1.**

Make observations aimed at identifying their own questions about the natural world

**Ques. 2.**

Formulate multiple hypotheses and predict multiple outcomes

### Planning

**Plan. 1.**

Collaboratively and individually plan, select, and use appropriate investigation methods

**Plan. 2.**

Select and use appropriate equipment to collect and record data

**Plan. 3.**

Ensure that safety and ethical guidelines are followed in their investigations

### Analysis

**Analysis. 1.**

Seek and analyze patterns, including describing relationships between variables and identifying inconsistencies

**Analysis 2.**

Use knowledge of scientific concepts to draw conclusions that are consistent with evidence

**Analysis 3.**

Analyze cause and effect relationships

### Evaluating

**Eval. 1.**

Evaluate and seek to improve upon investigation methods, identifying possible sources of error and alternative explanations

**Eval. 2.**

Connect scientific explorations to careers in science

**Eval. 3.**

Consider social, ethical, and environmental implications of findings from their own and others' investigations

### Applying

**Appl. 1.**

Transfer and apply learning to new situations

**Appl. 2.**

Consider the role of scientists in innovation

### Communicating

**Comm. 1.**

Formulate physical or mental theoretical models to describe a phenomenon.

**Comm. 2.**

Communicate scientific ideas, claims, and information using appropriate scientific language and representations