

## Science 9 Exam Review Topics Covered

### Cells and Reproduction Unit

#### Section 5.1 The Microscope and Cell Theory pg 140-141

- Cell Discoveries
  - o Important people (Hooke, Leuwenhoek, Brown)
  - o Cell Theory
- Microscopes
  - o Compound Light vs SEM vs TEM
  - o Label Diagram of Microscope
  - o Match parts of microscope to function

#### Section 5.2 Cells the Basic Unit of Life pg 142-143

- Plant Cells vs Animal cells
- Structure and Function of the Plant and Animal Cell
  - o Be able to label all structures
  - o Be able to give the functions of each structure
- Movement of the cell
  - o Flagella vs Cilia

#### Section 5.4 The Importance of Cell Division pg 148- 149

#### Section 5.5 Cell Division pg 150-153

- What is the cell cycle
- Be able to explain the process of Mitosis including all the phases
- Be able to recognize the diagrams to represent each stage of mitosis

#### Section 5.8 Reproduction and Cell Division pg 159 -161

- The difference between asexual and sexual reproduction
- The types of asexual reproduction (binary fission, fragmentation etc) know and be able to explain

#### Section 6.1 DNA: The genetic Material pg 176- 278

- Chromosomes, DNA
  - o Where are they found and What is their function
- Be able to explain and identify a diagram of DNA Replication
- Be able to explain what DNA fingerprinting is

#### Section 6.2 DNA, Mutations and Cancer pg 180-181

- Mutations: What causes them?
- Cancer
  - What is it?
  - What causes it?
  - How are these cells different than regular cells?
  - How can it be prevented?

#### Section 6.5 Regeneration pg 186-187

- What is regeneration and how is it different from fragmentation?
- What are humans able and not able to regenerate?
- What organisms are good at regeneration?
- What are stem cells? Where are they found? How are they different than specialized cells?

#### Section 6.6 Transplants pg 188-189

- Explain the process
- What organs can/cannot be used
- What is the controversy surrounding using pig's organs in humans

#### Section 6.9 Cloning pg 194-195

- What is it?
- How can it be done in plants? In animals
- Why is dolly unique?
- Be able to explain briefly how cloning occurs in plants and animals
- Are you for or against cloning (be able to support your choice)

## **Chemistry Unit**

### Section 1.1 Chemicals and Safety pg 14-15

- WHMIS and HHPS symbols
- Lab Safety Rules
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### Section 1.2 Properties of Matter pg 16-19

- Physical vs Chemical Properties
  - o Differences between them
  - o Identify a chemical and physical property from a description

### Section 1.7 Physical and Chemical Changes pg 28-30

- Differences between them
- Identify a chemical or physical change from a description

### Section 1.9 Corrosion pg 34-35

- What reacts during corrosion?
- How does a corrosion reaction happen?
- Why is corrosion so damaging?
- How can corrosion be prevented?

### Section 1.11 Combustion pg 38,39

- What is the chemical equation for combustion?
- Fire Triangle
- Fossil Fuels

### Section 2.1 Models of Matter: The Particle Theory

- The four parts to the particle theory
- Classifying mixtures as pure substances, mixture, solution etc)
- The difference between atom, elements, molecules and compounds
- Different molecules of the same elements

### Section 2.7 Chemical Symbols and Formulas pg 58,59

- What chemical symbols represent what elements?
- Name chemicals given a formula

### Section 3.3 Inside the atom pg 87-89

- What are the three subatomic particles? And their charges and location?
- Write standard atomic notation
- Determine atomic number, mass number, proton, neutron and electron number based on information about an atom
- Be able to draw Bohr Diagrams of elements and ions
- What is an ion? How and why do ions form?

### Section 4.4 Groups of Elements pg 110-113

- Understand the periodic table and how it is organized into rows and columns
- Identify the various groups on the periodic table

## **Electricity Unit**

### Section 9.2 The electrical nature of matter pg 272-273

- Electrostatics
- Law of Electric Charges

### Section 9.3 Charging by Friction pg 274-275

- How objects become charged by friction?
- What charges the objects receive?
- Example
- The electrostatics series.

### Section 9.5 Transferring charge through contact pg 278-279

- How it happens?
- What charges the objects receive?
- Example

### Section 9.6 Insulators and Conductors pg 280-281

- What are they?
- Examples of each?

Section 9.7 Discharging Electrically Charged Objects pg 282-283

- What is discharging?
- Methods used to discharge.

Section 9.8 Induction pg 285-287

- How objects become charged by induction?
- What charges the objects receive?
- Example

Section 10.2 Electricity and Electric Circuits

- Parts of an electric circuit
- How electricity flows through a circuit

Section 10.3 Electric Potential (Voltage) pg 302-303

- What is voltage?
- The symbol and units for voltage.
- The relationship it has with current and resistance

Section 10.7 Cells in Series and Parallel

- The difference between series and Parallel
- How to draw in series and parallel

Section 10.9 Electric Current pg 314-315

- What is electric current?
- The symbol and units for current.
- The relationship it has with voltage and resistance.

Section 10.10 Electrical Resistance and Ohms Law pg 316-317

- What is resistance?
- The symbol and units for resistance.
- Which circuit series or parallel provides the least resistance?
- The relationship it has with current and voltage.
- What is Ohms Law
- Be able to complete word problems with Ohms Law