

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
- Types of Microscopes
 - o Compound Light vs SEM vs TEM

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
 - o Be able to tell the difference between plant and animal cells
- 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)
 - o Know names and be able to explain

Section 6.1 DNA: The genetic Material pg 176- 278

- Chromosomes, DNA
 - o Where are they found
 - o 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
 - o What causes them
 - o Cancer
 - What is it
 - What causes it
 - How can it be prevented

Section 6.5 Regeneration pg 186-187

- What is regeneration
- 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?

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?

Ecosystem Unit (from Grade10 Text)

Section 1.1 The Silence of the Frogs

- What is causing the death of frogs?
- How can these deaths be prevented?
- Know the classification of organisms based on feeding (consumer vs producer vs decomposer etc)

Section 1.2 Endangered Species pg 14-15

- Classification System for Endangered Species
- Examples of animals that fit the various classifications in Canada

Section 1.5 Ecology pg 22-23

- Abiotic vs Biotic
- Ecosystem vs Community vs Population vs Organism
- Ecotone

Section 1.8 Comparing Ecosystem pg 28-29

- Be able to compare natural and artificial ecosystems
- Know which types of ecosystems have high biodiversity and which have low

Section 1.11 Following Energy Movement in Ecosystems

- Food Chains vs Food Webs vs Food Pyramids
- Be able to identify organisms in a food chain or web as carnivore, omnivore, herbivore, primary consumer, secondary consumer, decomposer, producer etc)
- Law of Thermodynamics

Section 1.2 Roles in Ecosystems pg 40-41

- Difference between a niche and a habitat
- How organisms can live in the same habitat, but develop their own niche (i.e warbler species, owls vs hawks)
- Invasive Species

Space Unit

13.1 What can we see in the sky? (pages 400-402)

- Constellations
- Planets vs Stars

13.3 Effects of Planetary Motion (pages 404-405)

- Rotation vs Revolution
- Reasons for the Seasons

13.14 A closer look at the planets (pages 424 – 427)

- Know important facts about each planet
- Be able to put planets in the solar system in order

13.15 Other objects in the solar system (pages 430 – 433)

- Natural Satellites (Moons)
- Asteroids
- Meteors vs Meteoroids vs Meteorites
- Comets

13.12 Probes to The Planets (pages 422)

- Why they are sent?
- Why are they unmanned?
- Examples of those sent (just know 1st and important facts about inner and outer probes)

14.11 Galaxies and Star Clusters (pages 461-462)

- What is a galaxy?
- What galaxy do we live in?
- Andromeda Galaxy (our closest neighbor)

14.7 The Sun an important Star (pages 452-453)

- Facts about the sun
- Why is the sun important?