# Exam Title: 2002400.Integrated Science I
# Courses Assessed by this Exam: Integrated Science I

**Key Vocabulary**: Abalone, acid precipitation, adaptation, agriculture, allele, analogous structures, anaerobic respiration, anaphase, ancestor, animal cell, Animalia, archaebacteria, artificial reefs, autotrophic, cellulose, bacterial, biomass, binary fission, carbon dioxide, cell division, cell membrane, cell membrane bilayer, cell theory, cell wall, central vacuole, cerebrum, chitin, chloroplast, chromosome, coal deposits, codominance, compound light microscope, consumer, convergent evolution, cytoplasm, cytosine, Darwin's theory of evolution, daughter cells, decomposer, deforestation, diploid cell, divergent evolution, DNA, ecosystem, electron microscope, embryonic development, embryos, endosymbiosis, Eubacteria, eukaryotic, evolution, exocytosis, filter feeders, flagella, food web, fossilize, Fungi, genetic information, genotype, genetic variation, geographic environments, glacial ice, Golgi bodies, global warming, Gulf of Mexico, heterozygous, heterotrophic, incomplete dominance, independent assortment, invertebrates, kelp, kingdom, landfills, law of segregation, metaphase, mitochondria, mitosis, multicellular, natural selection, nitrogen bases, nuclei, nucleic acid, nucleus, nuclear power plant, oil rigs, peptidoglycan, pesticide, phenotype, plankton, Plantae, plasma membrane, polygenic, population, predatory, prehensile tales, primates, probability, producer, prophase, Protista, scientific law, natural selection, nucleus, organelle, Phylum, plant cell, prokaryotic, regenerate, renewable fuel, solar energy, solar panel, species, telophase, theory, trophic level, unicellular, UV radiation, vacuole, vertebrates, zoologist.

**Student Tasks**:

- Be able to compare and contrast a prokaryotic and eukaryotic cell and give examples of organelles located in each
- Understand the cell theory and the history of its development including common misconceptions prior to its development
- Be able to compare and contrast a plant cell with an animal cell and give examples of organelles located in each.
- Understand the functions of various common organelles
- Understand the function of the plasma membrane/cell membrane
- Understand the process of mitosis and each individual phase involved in it
- Understand how the process of mitosis (and other asexual reproduction processes) supports life
- Understand the cell cycle, each of its phases, and the relative length of each phase
- Know Darwin's theory of evolution
- Understand common characteristics of various primate species
- Understand how genetics can be used to compare species with one another

- Differentiate between convergent and divergent evolution
- Differentiate between analogous and homologous structures
- Be familiar with the Endosymbiotic Theory
- Be able to identify the various kingdoms and identify characteristics of each kingdom
- Understand Mendelian genetics and the law of independent assortment and the law of segregation
- Differentiate between the various types of dominance (incomplete dominance, complete dominance, codominance)
- Be familiar with various arguments for and against the harvesting of natural resources and identify the potential negative effects on the environment (i.e. Global warming, pollution, bioaccumulation, deforestation)
- Be able to identify individual trophic levels on a food web or food chain
- Be able to identify likely effects of trophic levels if changes occur at a different level
- Be familiar with "ecofriendly" energy solutions