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Integrated II Learning outcomes

Intro to Science- Students will be able to:

* identify acids and bases using the pH scale
* Name the 6 characteristics of living things
* Define and give an example of:  
  o independent variable o hypothesis o controlled experiment  
  o law o theory  
  o dependent variable o prediction
* Apply the scientific method to a situation
* Judge whether appropriate safety precautions have been taken in hypothetical lab situations

Cells:

* Name the types of cells
* Explain the function of each organelle
* Construct a cell model
* Compare and contrast prokaryotic and eukaryotic cells
* Compare and contrast organelles of plant and animal cells
* Justify why prokaryotic cells are less complex but more successful at survival and reproduction

The cell cycle:

* Name the steps of the cell cycle
* Explain what happens in each phase
* Sketch each cell cycle phase
* Compare and contrast mitosis and meiosis
* Organize the phases of both mitosis and meiosis
* Summarize the process of mitosis and meiosis

Evolution:

* Name scientists who helped create the theory of evolution
* Distinguish between natural selection, genetic drift, mutation, and immigration/emigration
* Draw an organism evolving over time
* Infer how certain organisms acquired traits based on their environment
* Propose alternate theories of changing organisms
* Prove that natural selection results in evolution using an example

DNA:

* Name the 4 bases in DNA
* Explain which bases are complimentary
* Construct a DNA model
* Illustrate the process of DNA to protein
* Predict what would happen to DNA if mutations occur

Heredity:

* Explain how offspring acquire traits
* Explain the difference between dominant and recessive alleles
* Construct a pedigree
* Prove which offspring belong to which parents based on Punnett Squares

Energy flow:

* Name the percent of energy transferred between trophic levels
* Define a trophic level
* Explain the process of photosynthesis
* Explain the process of cellular respiration
* Relate photosynthesis to cellular respiration
* Relate consumers, producers, and decomposers
* Construct a food web

Classification:

* Name the levels of taxonomy
* List the 6 kingdoms
* Define and describe the process of taxonomy
* Put the 7 levels of taxonomy in order
* Classify given organisms under the correct kingdom

Human impact on the environment:

* List types of pollution
* Explain each type of pollution
* Graph the trend in human population growth
* Discuss how human impact causes pollution
* Construct methods to reduce pollution
* Predict the condition of the environment in the future if the population keeps growing exponentially