

Connecting Exponential Growth/Decay to the Arizona Science Standard

Selections from the Arizona Science Standard addressing exponential function.

Strand 3: Science in Personal and Social Perspectives

Concept 3: Human Population Characteristics

Analyze factors that affect human populations.

High School:

PO 1. Analyze social factors that limit the growth of a human population, including:

- affluence
- education
- access to health care
- cultural influences

PO 2. Describe biotic (living) and abiotic (nonliving) factors that affect human populations.

PO 3. Predict the effect of a change in a specific factor on a human population.

Strand 4: Life Science

Concept 3: Populations of Organisms in an Ecosystem

Analyze the relationships among various organisms and their environment.

Grade 7:

PO 4. Evaluate data related to problems associated with population growth (e.g., overgrazing, forest management, invasion of non-native species) and the possible solutions

High School:

PO 3. Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.

Strand 5: Physical Science

Concept 1: Structure and Properties of Matter

Understand physical, chemical, and atomic properties of matter.

High School:

PO 5. Describe the properties of electric charge and the conservation of electric charge.

Concept 3: Transfer of Energy

Understand that energy can be stored and transferred.

Grade 6:

PO 4. Explain how thermal energy (heat energy) can be transferred by:

- conduction
- convection
- radiation

Concept 4: Chemical Reactions

Investigate relationships between reactants and products in chemical reactions.

High School:

PO 11. Predict the effect of various factors (e.g., temperature, concentration, pressure, catalyst) on the equilibrium state and on the rates of chemical reaction.

Strand 6: Earth and Space Science

Concept 2: Energy in the Earth System (Both Internal and External)

Understand the relationships between the Earth's land masses, oceans, and atmosphere.

High School:

PO 8. Describe how radioactive decay maintains the Earth's internal temperature