

7th Grade Science

Curriculum Overview (2015 - 2016):

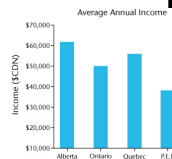
The 7th grade science curriculum focuses on concepts of scientific investigation, chemistry, and physical sciences. Impact of science technology and human activity on society is integrated throughout the curriculum.

FIRST QUARTER

SCIENTIFIC INVESTIGATION/SKILLS

- Scientists
- Safety
- Scientific Tools
- Types of Data (Qualitative, Quantitative)
- Measurements
 - Length, Mass
 - Volume, Temperature, Time

- Parts of an Experiment
 - data tables, IV, DV,
 - controls, multiple trials
- Graphing / Analyzing Data
- Scientific Process



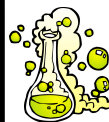
SECOND QUARTER

PHYSICAL & CHEMICAL PROPERTIES OF MATTER

- Mass and Volume
- Elements/Compounds/Mixture
- Kinetic Theory of Matter
- Solids/Liquids/Gases
- Physical/Chemical Properties of Matter
- Separation of Mixtures



PHYSICAL & CHEMICAL CHANGES IN MATTER



- Physical Changes in Matter
- Chemical Changes in Matter
- Conservation of Mass

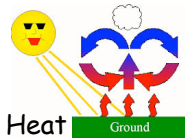
ENERGY TRANSFORMATIONS

- Energy Transformations
 - KE/PE, Chemical, Solar, Mechanical,
 - Electrical, Thermal, Sound, Light
- Evidence of Energy Transformations
- Conservation of Energy

THIRD QUARTER

THERMAL ENERGY

- Thermal Energy
- Method of Heat Transfer
- Conductors/Insulators of Heat
- Color and Heat Absorption



ELECTRICITY

- Interaction of Charges
- Current in a Circuit
- Conductors/Insulators of Electricity
- Series/Parallel Circuits
- Resistance in a Circuit



WAVES

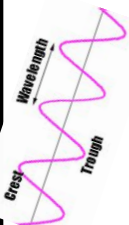
- Waves Properties (frequency/amplitude)

SOUND

- Loudness and Pitch
- Speed of Sound

LIGHT

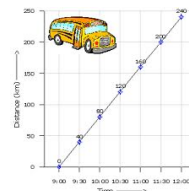
- EM Spectrum (Sources)
- Visible Light
- Light and Matter
- Reflection & Mirrors
- Light & Surfaces
- Refraction & Lenses
- Colors and Light



FOURTH QUARTER

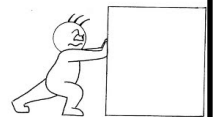
MOTION

- Types of Motion
- Calculation of Speed ($S = d/T$)
- Interpreting Motion Graphs



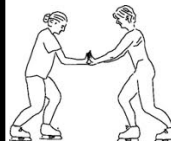
FORCES

- Types of Forces
- Measuring Forces
- Gravitational Force
 - (Distance/Mass/Weight)



NEWTON'S LAWS OF MOTION

- First Law and Inertia
 - (Balanced/Unbalanced Forces)
- Second Law ($F = m \times a$)
- Third Law (Action/Reaction)



SIMPLE MACHINES

- Work ($F \times d$)
- Types of Simple Machines
- Mechanical Advantage
 - (evaluate designs)
- Efficiency

