

# NATURAL SCIENCE MYSTERIES

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## SCOPE AND SEQUENCE

### CHAPTER 1

Key topics: states of matter, animal kingdom overview, liquid and weight measurements, substance reactions, protons, electrons, neutrons, atomic theory, Bohr Model, Planetary model, natural and artificial, symbols, Mendeleev, element families and periods, atomic number and mass, metal and noble gas families, covalent and ionic, adhesion and cohesion, element symbols and numbers, acids, bases, and Litmus paper

### CHAPTER 2

Key topics: Metric methods and systems, origin of the calendar, time, measurement standards of Galileo, Fahrenheit and Celsius, speed of light, Discoveries by: Olaus Roemer, Benjamin Franklin and Andre Ampere; place value, exponents, application of science, base units, surface areas, clocks, measurement, scales, states of matter, Fahrenheit and Kelvin scales, carbon dioxide, Sun, water and wind currents, logic and experiments

### CHAPTER 3

Key topics: pitch, loudness and vacuum, reflection and refraction, convex and concave lenses, mediums of sound, human eyes, conduction, convection and radiation, fuels, compounds, atoms, mixtures, formulas, protons, electrons, neutrons, atomic numbers, alloys, covalent and ionic bonds, photography, first four elements discovered, *Periodic Table of the Elements*, Chemical families, Noble gases, PH and acids, chemical reactions, atomic weight, isotopes and models, solar cells and batteries, voltage, lightening, lithosphere, hydrosphere and troposphere

### CHAPTER 4

Key topics: cells—structure and function; Pasteur’s experiments, Fungi kingdoms, amoebas, parameciums, diseases caused by protozoa, pioneers in discovery of bacteria, basic plant kingdoms, diffusion and osmosis, ferns, gymnosperms and angiosperms, edible and non-edible roots, stems and leaves, discovery of Velcro, John Ray, seed germination, pollination and dispersion; animal kingdom divisions—vertebrates and invertebrates, mollusks and arthropods, crustaceans and arachnids; poisonous insects

### CHAPTER 5

Key topics: fish and other vertebrates, amphibians, climate zones, Darwin and Agassiz, salamanders, snakes, lizards and turtles, crocodiles, alligators, birds, mammals, kangaroos and other marsupials: opossums and placental mammals; bats, whales, rodents and carnivores