

NCERT SYLLABUS FOR SCIENCE

GRADE 8

Chapter 1: CROP PRODUCTION AND MANAGEMENT

Key Concepts:

- Introduction to Agriculture
- Types of Crops
- Agricultural Practices
 - Preparation of Soil
 - Sowing
 - Adding Manure and Fertilisers
 - Irrigation- Traditional Methods of Irrigation and Modern Methods of Irrigation
 - Protection from Weeds
 - Harvesting
 - Storage
- Food from Animals

Chapter 2: MICROORGANISMS: FRIEND AND FOE

Key Concepts:

- Introduction to Microorganisms and its types
- Where do Microorganisms Live?
- Useful Microorganisms
 - Making of Curd and Bread
 - Commercial Use of Microorganisms
 - Medicinal Use of Microorganisms- Antibiotics and Vaccines
 - Microorganism in Increasing Soil Fertility
 - Microorganism in Cleaning the Environment
- Harmful Microorganisms
 - Disease-causing Microorganism in Humans
 - Disease-causing Microorganism in Animals
 - Disease-causing Microorganism in Plants
 - Food Poisoning
- Food Preservation
- Nitrogen Fixation
- Nitrogen Cycle

Chapter 3: SYNTHETIC FIBRES AND PLASTICS

Key Concepts:

- Introduction to Fibres
- What are Synthetic Fibres?

- Types of Synthetic Fibres
 - Rayon
 - Nylon
 - Polyester and Acrylic
- Characteristics of Synthetic Fibres
- Plastics
- Plastics as Materials of Choice
- Plastics and the Environment

Chapter 4: MATERIALS– METALS AND NON-METALS

Key Concepts:

- Introduction to Materials Around Us
- Physical Properties of Metals and Non-metals
 - Lustre
 - Malleability
 - Ductility
 - Sonorous
 - Conduction of Heat and Electricity
- Chemical Properties of Metals and Non-metals
 - Reaction with Oxygen
 - Reaction with Water
 - Reactions with Acids
 - Reactions with Bases
 - Displacement Reactions
- Uses of Metals and Non-metals
- Metalloids

Chapter 5: COAL AND PETROLEUM

Key Concepts:

- Introduction to Natural Resources- Inexhaustible and Exhaustible
- Fossil Fuels
- Coal
 - Story of Coal
 - Coke
 - Coal Tar
 - Coal Gas
- Petroleum
 - Formation of Petroleum
 - Refining of Petroleum
- Natural Gas
- Conservation of Natural Resources

Chapter 6: COMBUSTION AND FLAME

Key Concepts:

- What is Combustion?
 - Combustion
 - Comparison between Combustible and Non-combustible Substances
 - Ignition Temperature
 - Inflammable Substances
- How Do We Control Fire?
- Types of Combustion
- Flame
- Structure of a Flame
- What is a Fuel?
- Fuel Efficiency
- Adverse Effects of Combustion on Our Environment

Chapter 7: CONSERVATION OF PLANTS AND ANIMALS

Key Concepts:

- Introduction to the Idea of Conservation
- Deforestation and Its Causes
- Consequences of Deforestation
- Conservation of Forest and Wildlife
 - Protected Areas- Wildlife Sanctuary, National Park, Biosphere Reserve
- Biosphere Reserves in India
- Flora and Fauna
- Endemic Species
- Wildlife Sanctuary
 - Difference between a Zoo and a Wildlife Sanctuary
 - Insitu and Exsitu Conservation
- National Park
 - Endangered Animals
 - Reasons for Extinction
- Red Data Book
- Migration
- Recycling of Paper
- Reforestation

Chapter 8: CELL- STRUCTURE AND FUNCTIONS

Key Concepts:

- Discovery of the Cell
- The Cell- The Basic Unit of Life

- Organisms show Variety in Cell Number, Shape and Size
 - Unicellular and Multicellular Organisms
 - More about Egg cells
- Cell Structure and Function
 - Structural Organisation of Multicellular Organisms
- Parts of the Cell
 - Cell Wall
 - Cell Membrane
 - Cytoplasm
 - Nucleus
 - Cell Organelles
- Types of Cells
 - Prokaryotic Cell and Eukaryotic Cell
- Comparison of Plant and Animal Cells

Chapter 9: REPRODUCTION IN ANIMALS

Key Concepts:

- Comparison of Plant and Animal Cells
- Modes of Reproduction
- Sexual Reproduction
 - Male Reproductive Organs
 - Female Reproductive Organs
 - Fertilisation
 - Types of Fertilisation
 - Development of Embryo
 - Viviparous and Oviparous Animals
 - Growth and Metamorphosis
- Asexual Reproduction
 - Budding
 - Binary Fission
- Cloning- Story of Dolly, the Clone

Chapter 10: REACHING THE AGE OF ADOLESCENCE

Key Concepts:

- Adolescence and Puberty
- Changes at Puberty
 - Increase in Height
 - Change in Body Shape
 - Voice Change

- Increased Activity of Sweat and Sebaceous Glands
- Development of Sex Organs
- Reaching Mental, Intellectual and Emotional Maturity
- Secondary Sexual Characters
- Role of Hormones in Initiating Reproductive Function
- Reproductive Phase of Life in Humans
- How is the Sex of the Baby Determined?
- Hormones other than Sex Hormones
- Role of Hormones in Completing the Life History of Insects and Frogs
 - Reproductive Health
 - Nutritional Needs of the Adolescents
 - Personal Hygiene
 - Physical Exercise
 - Myths and Taboos; Dos and Don'ts
 - Adolescent Pregnancy
- Say 'NO' to Drugs

Chapter 11: FORCE AND PRESSURE

Key Concepts:

- Force- A Push or a Pull
- Forces are due to an Interaction
- Exploring Forces
- A force can Change the State of Motion
- Force can Change the Shape of an Object
- Contact Forces
 - Muscular Force
 - Friction
- Non-contact Forces
- Magnetic Force
- Electrostatic Force
- Gravitational Force
- Pressure
- Pressure Exerted by Liquids and Gases
- Atmospheric pressure
 - Atmospheric Pressure on Metallic Hemispheres

Chapter 12: FRICTION

Key Concepts:

- Force of Friction
- Factors Affecting Friction

- Friction: A Necessary Evil
- Increasing and Reducing Friction
- Wheels Reduce Friction
- Fluid Friction

Chapter 13: SOUND

Key Concepts:

- Introduction to Sound
- Sound is Produced by a Vibrating Body
 - Different Musical Instruments
- Sound Produced by Humans
- Sound Needs a Medium for Propagation
- We Hear Sounds through Our Ears
- Amplitude, Time Period and Frequency of a Vibration
 - Loudness and Pitch
- Audible and Inaudible Sounds
 - Infrasound and Ultrasound
- Noise and Music
- Noise Pollution
 - Adverse Effects of Noise Pollution
 - Measures to Limit Noise Pollution
 - Hearing Impairment

Chapter 14: CHEMICAL EFFECTS OF ELECTRIC CURRENT

Key Concepts:

- Introduction to Conductors and Insulators
- Do Liquids Conduct Electricity?
 - Detection of Electrical Conduction by Bulbs
 - LED Bulbs
 - Detection of Electrical Conduction by Magnetic Needle
 - Pure Water Doesn't Conduct Electricity
- Chemical Effects of Electric Current
 - Electrodes
 - Electrolysis
- Electroplating
- Process
- Uses
- Effects on the Environment

Chapter 15: SOME NATURAL PHENOMENA

Key Concepts:

- Lightning
 - The Sparks that the Greeks Knew About
- Charging by Rubbing
- Types of Charges and Their Interaction
- Transfer of Charge
- The Story of Lightning
- Lightning Safety
 - Finding a Safe Place
 - Dos and Don'ts during a Thunderstorm
 - Lightning Conductors
- Earthquakes
 - What is an Earthquake?
 - What Causes an Earthquake?
 - Measurement of an Earthquake
 - Protection against Earthquakes

Chapter 16: LIGHT

Key Concepts:

- What makes Things Visible?
- Laws of Reflection
- Regular and Diffused Reflection
- Reflected Light can be Reflected Again
- Multiple Images
 - Kaleidoscope
- Sunlight- White or Coloured
- Structure of Human Eyes
- Care of the Eyes
- Visually Impaired Persons Can Read and Write
- What is the Braille System
 - Story of Helen A. Keller

Chapter 17: STARS AND THE SOLAR SYSTEM

Key Concepts:

- Introduction to Astronomy
- The Moon
 - Phases of the Moon
 - The Moon's Surface
 - Landing on the Moon

- The Stars
- Constellations
 - Ursa Major
 - Pole Star
 - Orion
 - Sirius
 - Cassiopeia
- The Solar System
 - The Sun
 - The Planets
 - Astronomy in Ancient India
 - Mercury
 - Venus
 - The Earth
 - Mars - Mangalayaan
 - Jupiter
 - Saturn
 - Uranus and Neptune
- Some Other Members of the Solar System
 - Asteroids
 - Comets - Superstition about the Comets
 - Meteors and Meteorites - Meteor Showers
 - Artificial Satellites

Chapter 17: POLLUTION OF AIR AND WATER

Key Concepts:

- Air Pollution
- How Does Air Get Polluted?
- Case Study- The Taj Mahal
- Greenhouse Effect
- Global Warming
- Measures to Control Air Pollution
- Water Pollution
- How Does Water Get Polluted?
- Case Study- Ganga Action Plan
- Potable Water and Purification of Water
- Measures to Control Water Pollution