Altwood
Church of England School

Biology Curriculum Map

Year 7 — **Teach – Boost – Teach – Diagnosis – Therapy - Testing** — Year 11

Brief overview of subject Intent

Exam & Post – 16 Destination

YEAR 7

Adaptions, interdependence and Competition

- Distribution and Abundance
- CAP: Field investigations
- Competition in animals
- Competition in plants
- Adapt and survive
- Adaptations in animals
- Adaptations in plants
- The importance of communities
- Organisms in their environment

Organising and Ecosystem

- The carbon cycle
- Materials cycling
- Feeding relationships

Genetics and Evolution

- Types of reproduction
- More about genetics
- Inherited disorders
- Screening for genetic disorders
- Cell division in sexual reproduction
- DNA and inheritance
- Inheritance in action

Biodiversity and Ecosystems

- The Human Population Explosion
- Land and Water Pollution
- Air Pollution
- Deforestation and Peat Destruction
- Global Warming
- Maintaining biodiversity

YEAR 8

Plant structure and photosynthesis

- Tissues and organs in plants
- Transport systems in plants
- Making the most of photosynthesis
- Evaporation and Transpirations
- Factors affecting Transpiration
- Photosynthesis
- The rate of photosynthesis
- CAP: photosynthesis
- How plants use glucose

Cell division

- Stem cell dilemmas
- Stem cells
- Growth and differentiation
- Cell division

Communicable Diseases

- Health and disease
- Human defense responses
- Pathogens and disease
- Diseases caused by fungi and protists
- Preventing infections
- Viral diseases
- Bacterial diseases

Preventing and Treating Disease

- Antibiotics and painkillers
- Vaccination
- Discovering drugs
- Developing drugs

Non-communicable Diseases

- Non Communicable diseases
- Cancer
- Alcohol and other Carcinogens
- Diet, Exercise and Diseases
- Smoking and the Risk of Diseases

YEAR 9

Variation and Evolution

- More about extinction
- Antibiotic Resistance bacteria
- Classification
- New systems of classification
- Evidence of Evolution
- Fossils and Extinction

Reproduction

- Genetic engineering
- Selective breeding
- Evolution by natural selection
- Variation
- Ethics of genetic disorders

Hormonal Coordination and The Human Nervous System

- Infertility treatments
- The artificial control of fertility
- Hormones and the menstrual cycle
- Human reproduction
- The role of negative feedback
- Treating diabetes
- Control of Blood Glucose
- Principles of hormonal control
- Principles of homeostasis
- The structure and function of the human nervous system
- Reflex actions
- CAP: Reaction Times

YEAR 10

Cells and organisation

- Osmosis
- Diffusion
- CAP Microscopy
- Specialisation in plant cells
- Specialisation in animal cells
- Eukaryotic and prokaryotic cells
- The world of the microscope
- Animal and plant cells
- CAP Osmosis
- Exchanging materials
- Active transport
- Osmosis in plants

Organisation and the digestive system

- CAP enzymes
- Making digestion efficient
- Factors affecting enzyme action
- Catalysts and enzymes
- CAP Food Test
- Tissues and organs
- The human digestive system
- The chemistry of food
- How the digestive system works

The circulatory system and respiration

- Breathing and gas exchange
- Aerobic respiration
- The response to exercise
- Anaerobic respiration
- Metabolism and the liver
- The Blood
- The Blood vessels
- The Heart
- Helping the Heart

Organ systems

- Nutrients
- Enzymes
- Digestive system
- Smoking
- Breathing
- Gas exchange
- Food tests
- Healthy and unhealthy diets

YEAR 11

Inheritance

- Inheritance
- Natural Selection
- Extinction
- Variation
- Continuous and discontinuous

Ecosystems

- Ecosystems
- Food chains and webs
- The carbon cycle
- Climate change
- The earth and its atmosphere
- Igneous, Sedimentary and Metamorphic Rocks
- Adapting to change
- Disruption to food chains and webs
- Competition and Adaptation

Plants

- Plant minerals
- Leaves
- Photosynthesis
- Anaerobic respiration
- Chemosynthesis
- Aerobic respiration

YEAR 7

Introduction to Science

- Safety in Science
- Equipment & measuring
- Variables
- Bunsen Burners

Cells

- Unicellular organisms
- Movement of substances
- Diffusion
- Specialised cells
- Plant and animal cells
- Observing cells

Reproduction

- Sexual and asexual reproduction
- Seed dispersal
- Fertilisation and germination
- Fertilisation and implantation
- Adolescence
- Flowers and pollination
- The menstrual cycle
- Development of a fetus
- Reproductive Systems

Human Systems

- The eye and a camera
- Movement muscles
- Detecting sound
- Movement joints
- Skeleton
- Levels of organisation

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