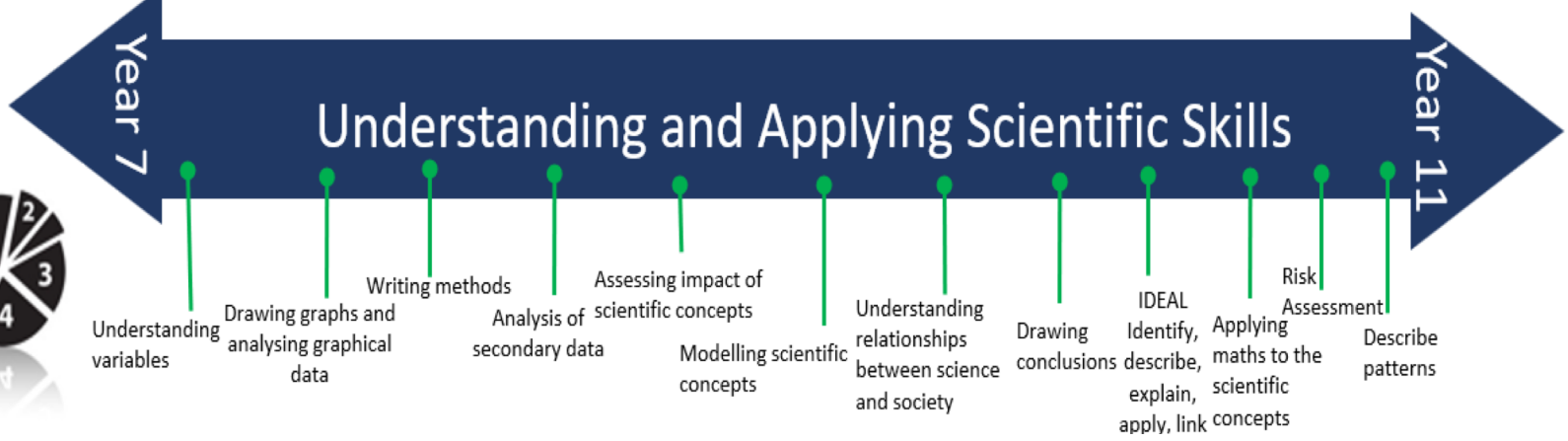
YEAR 11 GCSE Biology Learning Journey

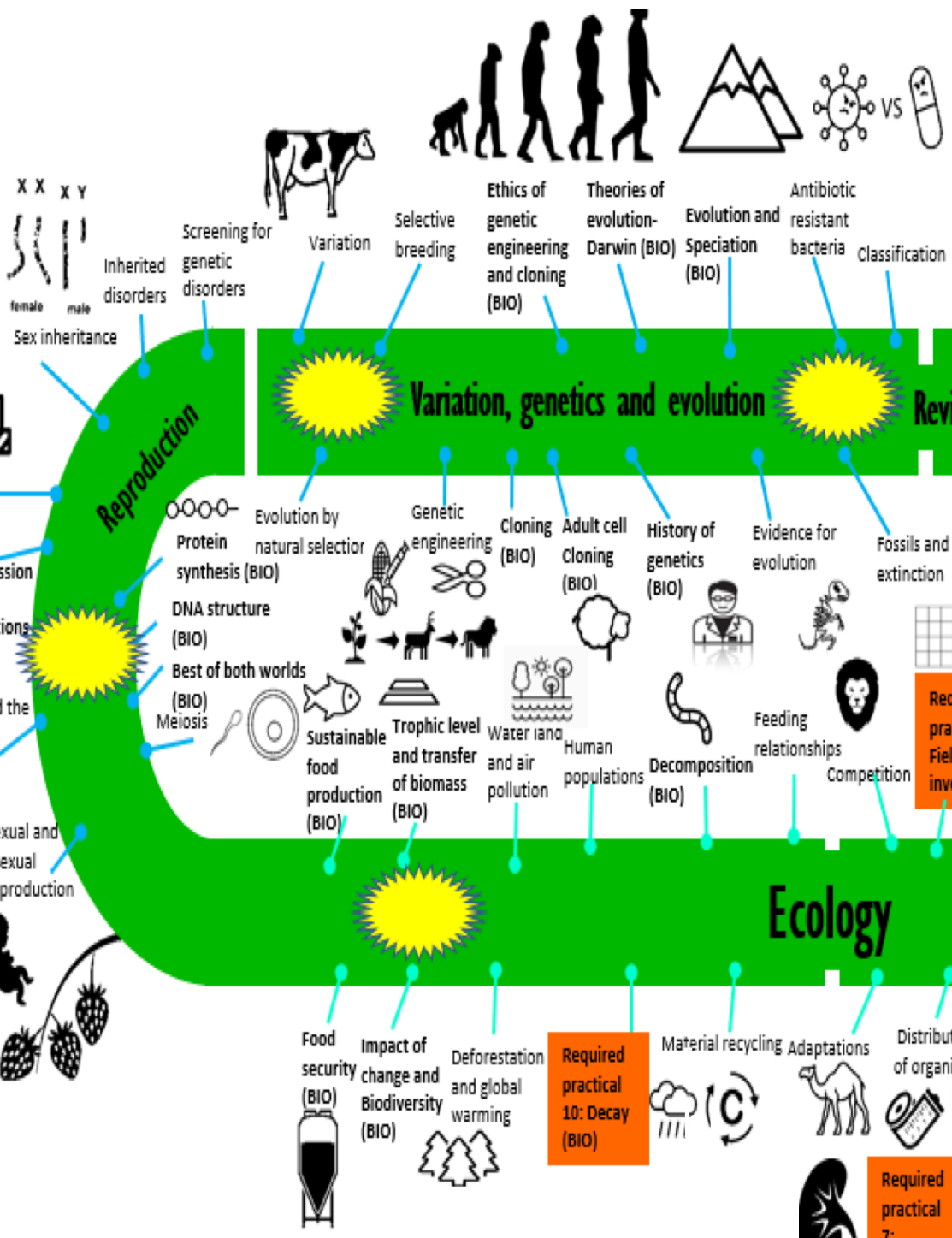
(Triple Science)

Featherstone High School



Target Grade





CROSS-CURRICULAR LINKS

Body systems	PE	Health and disease	History
Reproduction	PSHE	Data analysis	Mathematics
Health & Lifestyle	PSHE	Photosynthesis	Chemistry
C, N and H_2O cycle	Geography	Diffusion & Osmosis	Chemistry

Biology Learning Journey Y7-Y11

(Triple Science)

Featherstone High School

Year 7

Understanding and Applying Scientific Skills

Year 11

Understanding variables
Drawing graphs and analysing graphical data
Writing methods
Analysis of secondary data
Assessing impact of scientific concepts
Modelling scientific concepts
Understanding relationships between science and society
Drawing conclusions
IDEAL Identify, describe, explain, apply, link
Applying maths to the scientific concepts
Risk Assessment
Describe patterns

Target Grade

YEAR 11

Reproduction
Sex inheritance
Inherited disorders
Screening for genetic disorders
Genetic inheritance
Gene expression and mutations (BIO)
DNA and the genome
Protein synthesis (BIO)
DNA structure (BIO)
Best of both worlds (BIO)
Meiosis
Sexual and asexual reproduction

Variation, genetics and evolution
Variation
Selective breeding
Ethics of genetic engineering and cloning (BIO)
Theories of evolution- Darwin (BIO)
Evolution and Speciation (BIO)
Antibiotic resistant bacteria
Classification
Evolution by natural selection
Genetic engineering
Cloning (BIO)
Adult cell Cloning (BIO)
History of genetics (BIO)
Evidence for evolution
Fossils and extinction

Revision for GCSE Exams

Exams & Post – 16 Destination

Ecology
Food security (BIO)
Impact of change and Biodiversity (BIO)
Deforestation and global warming
Required practical 10: Decay (BIO)
Material recycling
Adaptations
Distribution of organisms
Communities
Thermoregulation
Sustainable food production (BIO)
Trophic level and transfer of biomass (BIO)
Water and air pollution
Human populations
Decomposition (BIO)
Feeding relationships
Competition
Required practical 9: Field investigations
Abiotic and Biotic factors

Response and Homeostasis
Human kidney and treatments
Required practical 8: Plant Responses (BIO)
Plant hormones and their uses (BIO)
Infertility treatments
Hormones in Human reproduction
Contraception
Negative feedback
Diabetes
Controlling blood glucose
Endocrine system
Problems with the eye (BIO)
The Brain (BIO)
Structure and function of the nervous system
Balanced diet and Digestive system
Growth and differentiation
Cell division
Exchanging materials
Required practical 2: Osmosis in plants
Osmosis
Diffusion
Prokaryotes and Eukaryotes
Required practical 1: Microscopy
Active Transport
Cell Specialisation
Animal and Plant cells
Stem cells and Dilemmas
Plant Hormones
Selection in plants
Natural Selection
Decomposers and carbon
Bacteria
Microscopic Fungi
Anaerobic Respiration
Getting Oxygen
Aerobic Respiration
Muscles and Breathing
Pollination
Classification and biodiversity
Required practical 3: Food tests
Tissues and organs in animals
Making digestion efficient
The heart
Helping the heart
Tissues and organs in plants
Evaporation and transpiration in plants
Required practical 5: Microbiology (BIO)
Diseases caused by Fungi and Protists
Bacterial diseases
Human defence responses
Vaccinations
Discovery and development of drugs
Antibiotics and Painkillers
Plant diseases (BIO)
Viral infections
Pathogens and disease
Health and disease
Transport systems in plants
Breathing and gas exchange
Blood vessels
Blood
Required practical 4: Enzymes; rates of reaction
Photosynthesis
Using photosynthesis
Response to exercise
Metabolism
Rate of photosynthesis
Required practical 6: Rate of Photosynthesis
Aerobic respiration
Anaerobic respiration
Homeostasis
Required practical 7: Reaction time
Reflex action
Structure of the eye (BIO)
Alcohol and other carcinogens
Smoking and risk of disease
Cancer
Non communicable disease
Producing and using Monoclonal antibodies (BIO)

Y10 Sci

Disease

Y9 Bio

Bioenergetics

Tissues, organs and organ systems

Homeostasis and Response

Cell Biology

YEAR 10

YEAR 8

Plants and reproduction
Types of reproduction
Fertilisation and dispersal
Effects of the Environment
Variation
Classification and biodiversity
Pollination

Breathing and respiration
Gas exchange system
Comparing gas exchange
Muscles and Blood
Muscles and Breathing
Aerobic Respiration
Getting Oxygen
Anaerobic Respiration

Unicellular Organisms
Unicellular or multicellular
Protists
Microscopic Fungi
Bacteria

Genetics and Evolution
DNA
Genes and extinction
Natural Selection
Decomposers and carbon

Plant growth
Plant adaptations
Growing crops
Plant Hormones
Selection in plants

Cells, Tissues, Organs, Systems
Cells
Tissues
Organs
Organ Systems
Microscopes
Life processes
Animal and Plant cells

Ecosystems
Transfers in food chains
Effects on the Environment
Adaptation

Muscles and Bones
Drugs and sport
Muscles and Moving
Skeleton

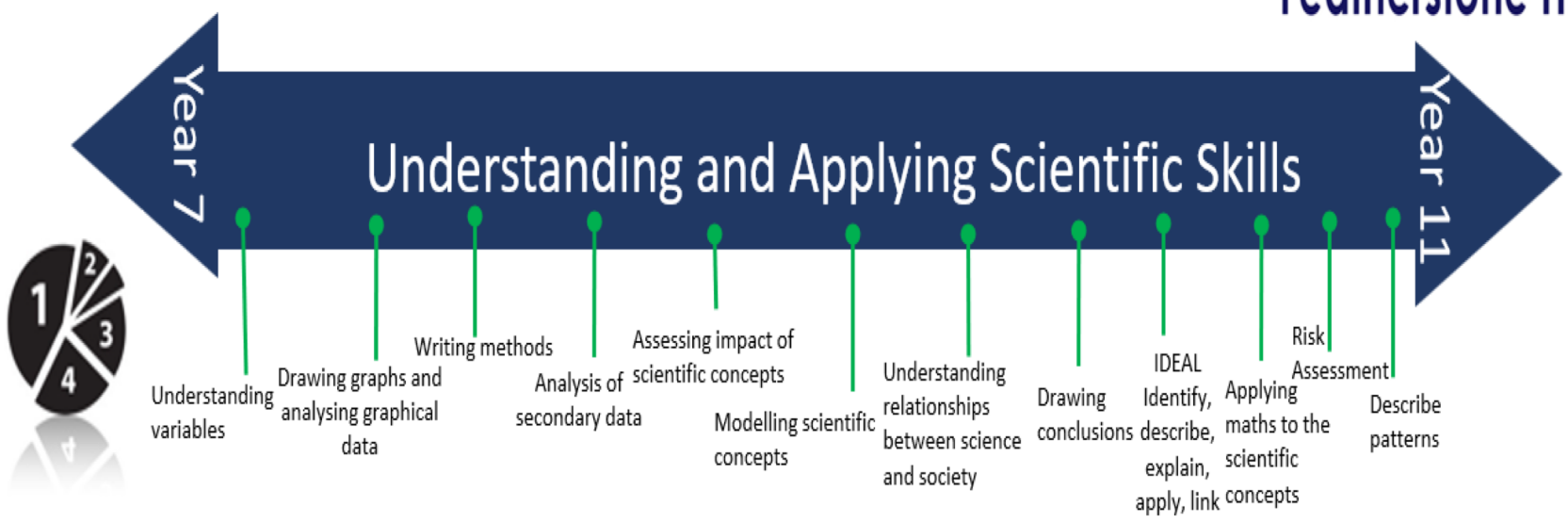
Reproduction in animals
Growing up
Becoming pregnant
Gestation and Birth
Animal sexual reproduction
Reproductive organs

YEAR 7

YEAR 10 GCSE Biology Learning Journey

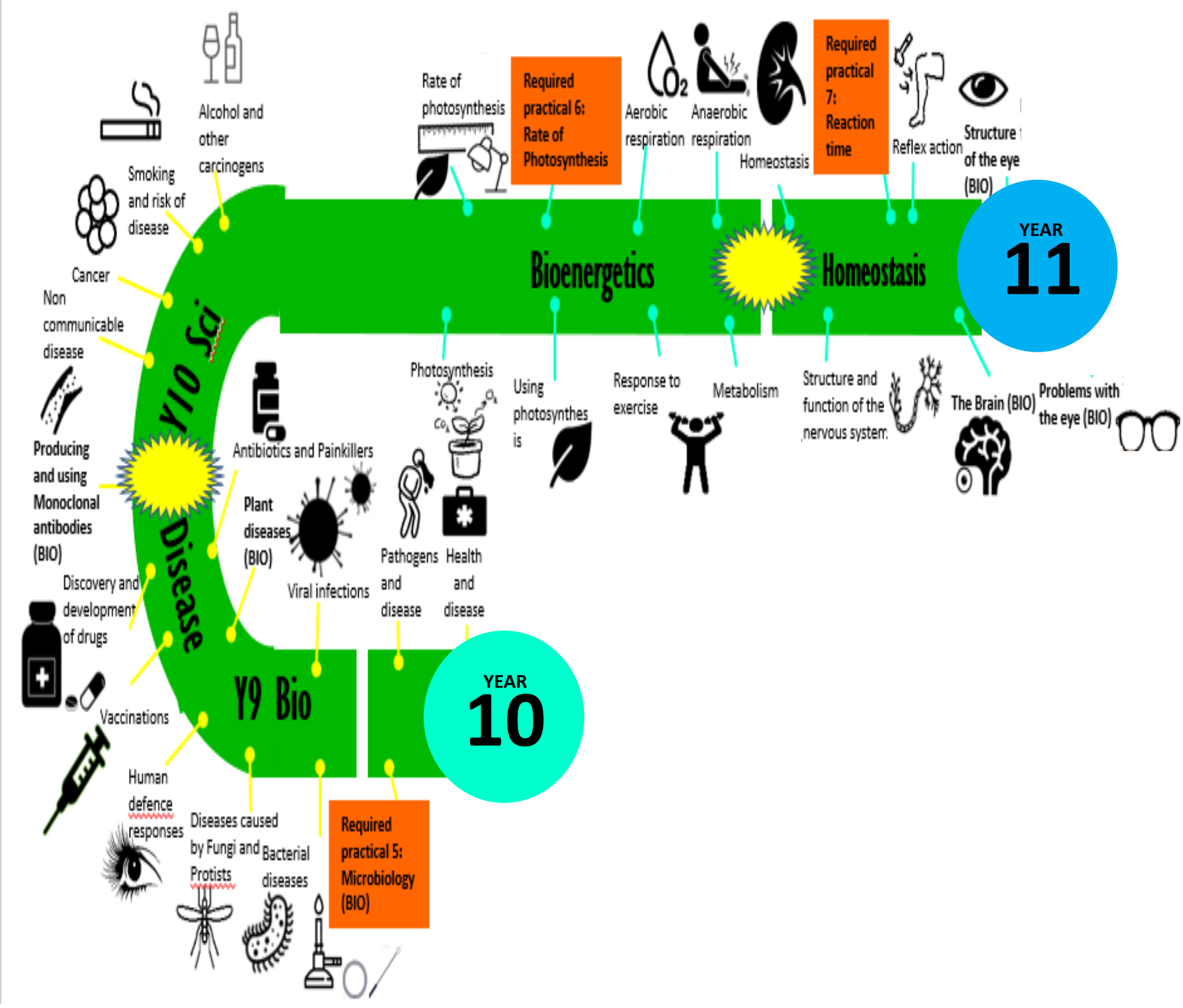
(Triple Science)

Featherstone High School



Target Grade





CROSS-CURRICULAR LINKS

Body systems	PE	Health and disease	History
Reproduction	PSHE	Data analysis	Mathematics
Health & Lifestyle	PSHE	Photosynthesis	Chemistry
C, N and H_2O cycle	Geography	Diffusion & Osmosis	Chemistry

Biology Learning Journey Y7-Y11

(Triple Science)

Featherstone High School

Year 7

Understanding and Applying Scientific Skills (Year 11)

- Understanding variables
- Drawing graphs and analysing graphical data
- Writing methods
- Analysis of secondary data
- Assessing impact of scientific concepts
- Modelling scientific concepts
- Understanding relationships between science and society
- Drawing conclusions
- IDEAL Identify, describe, explain, apply, link
- Applying maths to the scientific concepts
- Risk Assessment
- Describe patterns

Target Grade

Exams & Post – 16 Destination

YEAR 11

Reproduction
- Sex inheritance
- Inherited disorders
- Screening for genetic disorders
- Genetic inheritance
- Gene expression and mutations (BIO)
- DNA and the genome
- Protein synthesis (BIO)
- DNA structure (BIO)
- Best of both worlds (BIO)
- Meiosis
- Sexual and asexual reproduction

Variation, genetics and evolution
- Variation
- Selective breeding
- Ethics of genetic engineering and cloning (BIO)
- Theories of evolution- Darwin (BIO)
- Evolution and Speciation (BIO)
- Antibiotic resistant bacteria
- Classification
- Evolution by natural selection
- Genetic engineering
- Cloning (BIO)
- Adult cell Cloning (BIO)
- History of genetics (BIO)
- Evidence for evolution
- Fossils and extinction

Revision for GCSE Exams

Ecology
- Sustainable food production (BIO)
- Trophic level and transfer of biomass (BIO)
- Water and air pollution
- Human populations
- Decomposition (BIO)
- Feeding relationships
- Competition
- Abiotic and Biotic factors
- Food security (BIO)
- Impact of change and Biodiversity (BIO)
- Deforestation and global warming
- Material recycling
- Adaptations
- Distribution of organisms
- Communities

Required practical 9: Field investigations

Required practical 10: Decay (BIO)

Response and Homeostasis
- Human kidney and treatments
- Thermoregulation
- Contraception
- Negative feedback
- Reflex action
- Structure of the eye (BIO)
- Homeostasis

Required practical 8: Plant Responses (BIO)

- Plant hormones and their uses (BIO)
- Infertility treatments
- Hormones in Human reproduction
- Diabetes
- Controlling blood glucose

YEAR 10

Y10 Sci

Disease
- Smoking and risk of disease
- Alcohol and other carcinogens
- Cancer
- Non communicable disease
- Producing and using Monoclonal antibodies (BIO)
- Antibiotics and Painkillers
- Plant diseases (BIO)
- Discovery and development of drugs
- Viral infections
- Vaccinations
- Human defence responses
- Diseases caused by Fungi and Protists
- Bacterial diseases

Bioenergetics
- Rate of photosynthesis
- Photosynthesis
- Using photosynthesis is
- Aerobic respiration
- Anaerobic respiration
- Response to exercise
- Metabolism

Required practical 6: Rate of Photosynthesis

Required practical 7: Reaction time

Y9 Bio

Tissues, organs and organ systems
- Pathogens and disease
- Health and disease
- Transport systems in plants
- Breathing and gas exchange
- Blood vessels
- Blood
- Structure and function of the nervous system
- The Brain (BIO)
- Problems with the eye (BIO)
- Balanced diet and Digestive system
- Growth and differentiation
- Cell division
- Exchanging materials

Required practical 4: Enzymes; rates of reaction

Required practical 2: Osmosis in plants

Cell Biology
- Osmosis
- Diffusion
- Prokaryotes and Eukaryotes

Required practical 5: Microbiology (BIO)

Required practical 3: Food tests

Required practical 1: Microscopy
- Evaporation and transpiration in plants
- Tissues and organs in plants
- Helping the heart
- The heart
- Making digestion efficient
- Tissues and organs in animals
- Stem cells and Dilemmas
- Active Transport
- Cell Specialisation
- Animal and Plant cells

YEAR 9

- Classification and biodiversity
- Pollination
- Muscles and Breathing
- Aerobic Respiration
- Getting Oxygen
- Anaerobic Respiration
- Microscopic Fungi
- Bacteria
- Decomposers and carbon
- Natural Selection
- Reactions in plants
- Plant products

YEAR 8

Plants and reproduction
- Types of reproduction
- Fertilisation and dispersal
- Variation

Breathing and respiration
- Gas exchange system
- Comparing gas exchange
- Muscles and Blood

Unicellular Organisms
- Unicellular or multicellular
- Protists
- Growing up
- Becoming pregnant

Genetics and Evolution
- DNA
- Genes and extinction
- Animal sexual reproduction

Plant growth
- Plant adaptations
- Growing crops
- Organ Systems
- Tissues
- Organs

Ecosystems
- Transfers in food chains
- Effects of the Environment
- Effects on the Environment
- Adaptation

Muscles and Bones
- Drugs and sport
- Muscles and Moving
- Skeleton

Reproduction in animals
- Gestation and Birth
- Reproductive organs

Cells, Tissues, Organs, Systems
- Cells
- Microscopes
- Life processes

YEAR 7