Year 7

Term 1

7A-Cells, Tissue and systems
The fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling life processes to be performed more effectively.

7C –Muscles and bones
7C builds up on the teachings of 7A. It goes further to teach the organs, organ system and fitness. Breathing, circulatory, skeletal and muscles system are taught in more depth leading to the effect of drugs on the body.

Term 2

7G – Particle Model
This is an introduction to matter as solid, liquid and gases. This topic also includes the scientific investigation skills – aim, hypothesis, prediction, method, observation, conclusion and evaluation.

7I/8K -Energy/Energy Transfer
In 7I pupils investigate the different amount of energy in food. How energy is stored and transferred is linked to the law of conservation of energy. It also includes the different types of energy resources. 8K builds on the concept of energy and it explores the different ways energy is transferred. Convection, conduction and radiation are explained using daily life examples.

7K – Forces
This topic explores the concepts of forces and their effects further. More experiment opportunities to investigate friction, speed and air resistance are embedded in the teachings.

Term 3

7H+ 8F-Atoms, Elements & Molecules (Introduction to periodic table)
7H goes further on theparticle model and explains the differences between atoms, molecules, elements and compounds. A simple model of the atom consisting of the nucleus and electrons. 8F develops the further the concept of atoms with chemical and physical changes. It explores the modern Periodic Table, showing elements arranged in order of atomic number. Students study the position of elements in the Periodic Table in relation to their atomic structure.

Term 4

7J – Electricity
7J introduces series and parallel circuits. Electrical safety and electricity flow models are applied. There are opportunities for building circuits using ammeter and voltmeter.

To access KS3 science on line text books-
https://www.pearsonactivelearn.com/
Other useful website:
https://www.bbc.co.uk/bitesize/subjects/zng4d2p;
www.samlearning.com
Revision guides: Available on parent pay

7B-Reproduction
This topic explores the growing up process in animals and human beings. What happens during puberty and adolescence as well as gestation period in different mammals? Internal and external fertilisation is also taught.

Revision & End Of Year Exam

Term 5

7E-Mixture and separation
Students develop and build on their KS2 material unit knowledge. Solution, solvent, solute, mixtures and separation techniques are the main concepts and key words applied to explore and apply. Pupils have the opportunity to experiment with the different separation methods.

7F- Acid and Alkali
7F provides more opportunities for pupils to experiment with acid, alkali and indicators. Students study the pH scale, neutralisation and their applications.

Term 6

7D -Ecosystem
7D looks at variation within and between species. It also builds on adaptation of plants and animals in different climate. Ecosystem and human impact on ecosystem is introduced

Year 7

Year 7 Curriculum Plan

Autumn 1

Introduction to Science and Investigative Skills

7A-Cells, Tissue and systems
The fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling life processes to be performed more effectively.

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7C builds up on the teachings of 7A. It goes further to teach the organs, organ system and fitness. Breathing, circulatory, skeletal and muscles system are taught in more depth leading to the effect of drugs on the body.

Autumn 2

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Spring 1

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Spring 2

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Summer 1

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Summer 2

Revision & End Of Year Exam

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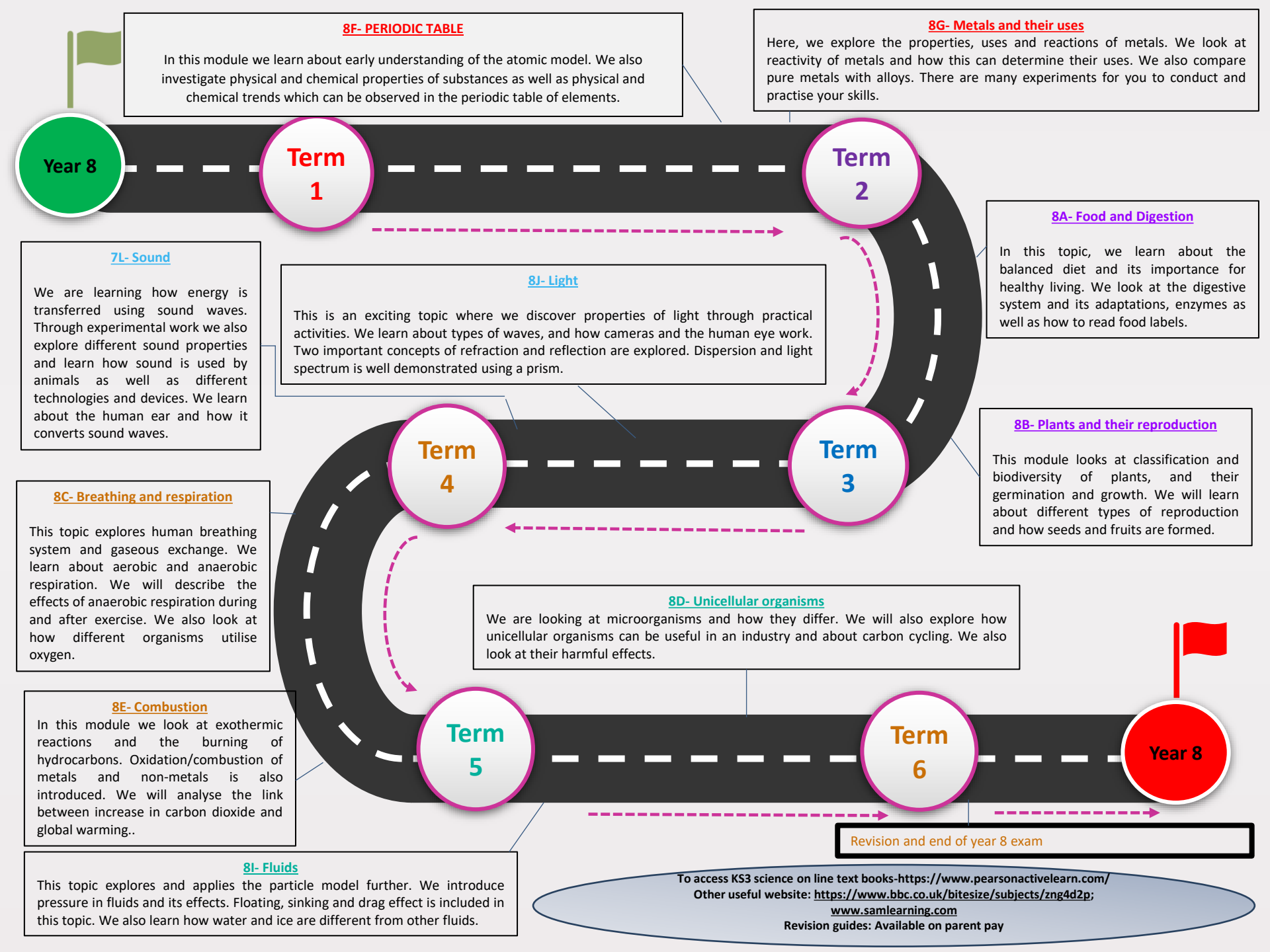
Revision guides: Available on parent pay


8F- PERIODIC TABLE
In this module we learn about early understanding of the atomic model. We also investigate physical and chemical properties of substances as well as physical and chemical trends which can be observed in the periodic table of elements.
8G- Metals and their uses
Here, we explore the properties, uses and reactions of metals. We look at reactivity of metals and how this can determine their uses. We also compare pure metals with alloys. There are many experiments for you to conduct and practise your skills.
Year 8
Term 1
Term 2
8A- Food and Digestion
In this topic, we learn about the balanced diet and its importance for healthy living. We look at the digestive system and its adaptations, enzymes as well as how to read food labels.
7L- Sound
We are learning how energy is transferred using sound waves. Through experimental work we also explore different sound properties and learn how sound is used by animals as well as different technologies and devices. We learn about the human ear and how it converts sound waves.
8J- Light
This is an exciting topic where we discover properties of light through practical activities. We learn about types of waves, and how cameras and the human eye work. Two important concepts of refraction and reflection are explored. Dispersion and light spectrum is well demonstrated using a prism.
Term 4
Term 3
8B- Plants and their reproduction
This module looks at classification and biodiversity of plants, and their germination and growth. We will learn about different types of reproduction and how seeds and fruits are formed.
8C- Breathing and respiration
This topic explores human breathing system and gaseous exchange. We learn about aerobic and anaerobic respiration. We will describe the effects of anaerobic respiration during and after exercise. We also look at how different organisms utilise oxygen.
8D- Unicellular organisms
We are looking at microorganisms and how they differ. We will also explore how unicellular organisms can be useful in an industry and about carbon cycling. We also look at their harmful effects.
8E- Combustion
In this module we look at exothermic reactions and the burning of hydrocarbons. Oxidation/combustion of metals and non-metals is also introduced. We will analyse the link between increase in carbon dioxide and global warming..
Term 5
Term 6
Year 8
Revision and end of year 8 exam
8I- Fluids
This topic explores and applies the particle model further. We introduce pressure in fluids and its effects. Floating, sinking and drag effect is included in this topic. We also learn how water and ice are different from other fluids.
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Revision guides: Available on parent pay

YEAR 8 CURRICULUM PLAN

Autumn 1

8F- PERIODIC TABLE

In this module we learn about early understanding of the atomic model. We also investigate physical and chemical properties of substances as well as physical and chemical trends which can be observed in the periodic table of elements. We learn how the modern shape of the periodic table has developed over the years.

8G- Metals and their uses

Here, we explore the properties, uses and reactions of metals. We look at reactivity of metals and how this can determine their uses. We also compare pure metals with alloys. There are many experiments for you to conduct and practise your skills.

Autumn 2

8A- Food and Digestion

In this topic, we learn about the balanced diet and its importance for healthy living. We look at the digestive system and its adaptations, enzymes as well as how to read food labels.

8B- Plants and their reproduction

This module looks at classification and biodiversity of plants, and their germination and growth. We will learn about different types of reproduction and how seeds and fruits are formed.

Spring 1

8J- Light

This is an exciting topic where we discover properties of light through practical activities. We learn about types of waves, and how cameras and the human eye work. Two important concepts of refraction and reflection are explored. Dispersion and light spectrum is well demonstrated using a prism.

7L- Sound

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Spring 2

8C- Breathing and respiration

This topic explores human breathing system and gaseous exchange. We learn about aerobic and anaerobic respiration. We will describe the effects of anaerobic respiration during and after exercise. We also look at how different organisms utilise oxygen.

8D- Unicellular organisms

We are looking at microorganisms and how they differ. We will also explore how unicellular organisms can be useful in an industry and about carbon cycling. We also look at their harmful effects.

Summer 1

8I- Fluids

This topic explores and applies the particle model further. We introduce pressure in fluids and its effects. Floating, sinking and drag effect is included in this topic. We also learn how water and ice are different from other fluids.

8E- Combustion

In this module we look at exothermic reactions and the burning of hydrocarbons. Oxidation/combustion of metals and non-metals is also introduced. We will analyse the link between increase in carbon dioxide and global warming. We will learn about fire safety and different extinguisher types.

Summer 2

Revision and end of year 8 exam

Periodic table and chemical equations practice

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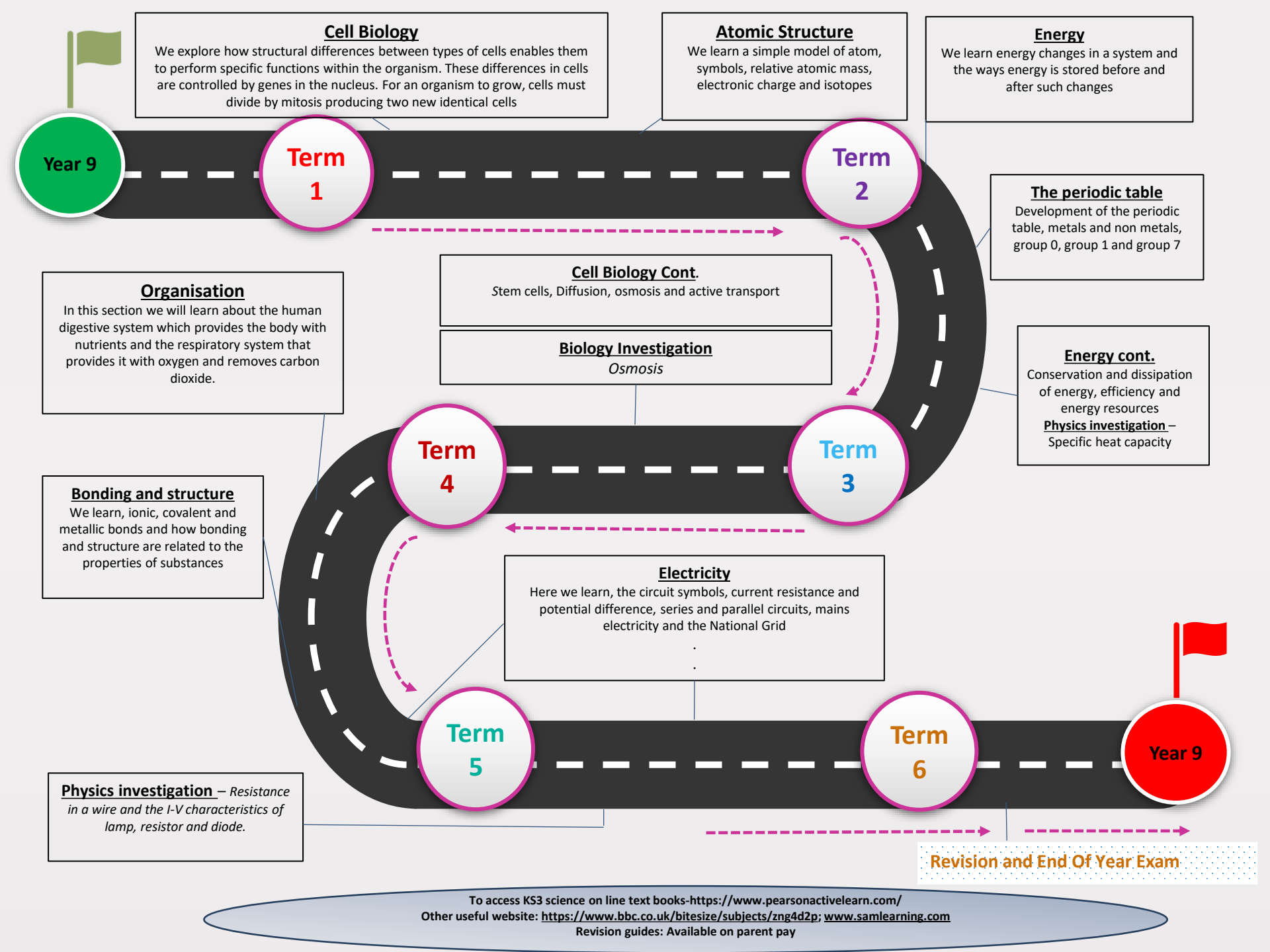
Cell Biology
We explore how structural differences between types of cells enables them to perform specific functions within the organism. These differences in cells are controlled by genes in the nucleus. For an organism to grow, cells must divide by mitosis producing two new identical cells
Atomic Structure
We learn a simple model of atom, symbols, relative atomic mass, electronic charge and isotopes
Energy
We learn energy changes in a system and the ways energy is stored before and after such changes
Year 9
Term 1
Term 2
The periodic table
Development of the periodic table, metals and non metals, group 0, group 1 and group 7
Organisation
In this section we will learn about the human digestive system which provides the body with nutrients and the respiratory system that provides it with oxygen and removes carbon dioxide.
Cell Biology Cont.
Stem cells, Diffusion, osmosis and active transport
Biology Investigation
Osmosis
Energy cont.
Conservation and dissipation of energy, efficiency and energy resources
Physics investigation – Specific heat capacity
Term 4
Term 3
Bonding and structure
We learn, ionic, covalent and metallic bonds and how bonding and structure are related to the properties of substances
Electricity
Here we learn, the circuit symbols, current resistance and potential difference, series and parallel circuits, mains electricity and the National Grid
Term 5
Term 6
Year 9
Physics investigation – Resistance in a wire and the I-V characteristics of lamp, resistor and diode.
Revision and End Of Year Exam
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Year 9 Curriculum

Autumn 1

Cell Biology
We explore how structural differences between types of cells enables them to perform specific functions within the organism. These differences in cells are controlled by genes in the nucleus. For an organism to grow, cells must divide by mitosis producing two new identical cells.

Atomic Structure
We learn a simple model of atom, symbols, relative atomic mass, electronic charge and isotopes

Autumn 2

Energy
We learn energy changes in a system and the ways energy is stored before and after such changes

Cell Biology Cont.
*S*tem cells, Diffusion, osmosis and active transport

Spring 1

The periodic table
Development of the periodic table, metals and non metals, group 0, group 1 and group 7

Biology Investigation
Osmosis

Energy cont.
Conservation and dissipation of energy, efficiency and energy resources
Physics investigation – Specific heat capacity

Spring 2

Organisation
In this section we will learn about the human digestive system which provides the body with nutrients and the respiratory system that provides it with oxygen and removes carbon dioxide.

Bonding and structure
We learn, ionic, covalent and metallic bonds and how bonding and structure are related to the properties of substances

Summer 1

Electricity
Here we learn, the circuit symbols, current resistance and potential difference, series and parallel circuits, mains electricity and the National Grid

Summer 2

Revision and End Of Year Exam

Physics investigation – Resistance in a wire and the I-V characteristics of lamp, resistor and diode.

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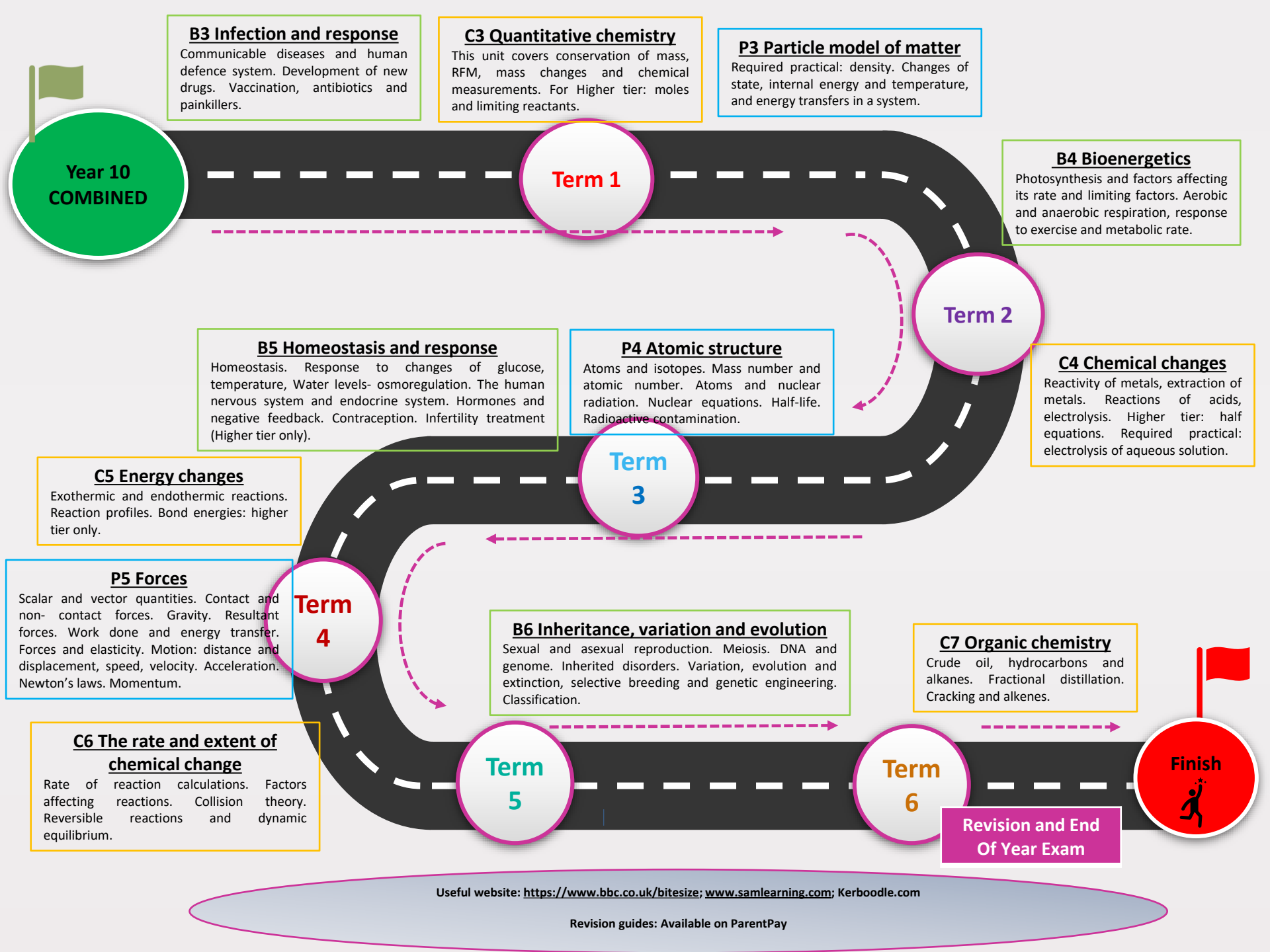
Year 10 COMBINED
B3 Infection and response
Communicable diseases and human defence system. Development of new drugs. Vaccination, antibiotics and painkillers.
C3 Quantitative chemistry
This unit covers conservation of mass, RFM, mass changes and chemical measurements. For Higher tier: moles and limiting reactants.
P3 Particle model of matter
Required practical: density. Changes of state, internal energy and temperature, and energy transfers in a system.
Term 1
B4 Bioenergetics
Photosynthesis and factors affecting its rate and limiting factors. Aerobic and anaerobic respiration, response to exercise and metabolic rate.
Term 2
C4 Chemical changes
Reactivity of metals, extraction of metals. Reactions of acids, electrolysis. Higher tier: half equations. Required practical: electrolysis of aqueous solution.
P4 Atomic structure
Atoms and isotopes. Mass number and atomic number. Atoms and nuclear radiation. Nuclear equations. Half-life. Radioactive contamination.
B5 Homeostasis and response
Homeostasis. Response to changes of glucose, temperature, Water levels- osmoregulation. The human nervous system and endocrine system. Hormones and negative feedback. Contraception. Infertility treatment (Higher tier only).
Term 3
C5 Energy changes
Exothermic and endothermic reactions. Reaction profiles. Bond energies: higher tier only.
P5 Forces
Scalar and vector quantities. Contact and non- contact forces. Gravity. Resultant forces. Work done and energy transfer. Forces and elasticity. Motion: distance and displacement, speed, velocity. Acceleration. Newton's laws. Momentum.
Term 4
B6 Inheritance, variation and evolution
Sexual and asexual reproduction. Meiosis. DNA and genome. Inherited disorders. Variation, evolution and extinction, selective breeding and genetic engineering. Classification.
C7 Organic chemistry
Crude oil, hydrocarbons and alkanes. Fractional distillation. Cracking and alkenes.
C6 The rate and extent of chemical change
Rate of reaction calculations. Factors affecting reactions. Collision theory. Reversible reactions and dynamic equilibrium.
Term 5
Term 6
Revision and End Of Year Exam
Finish
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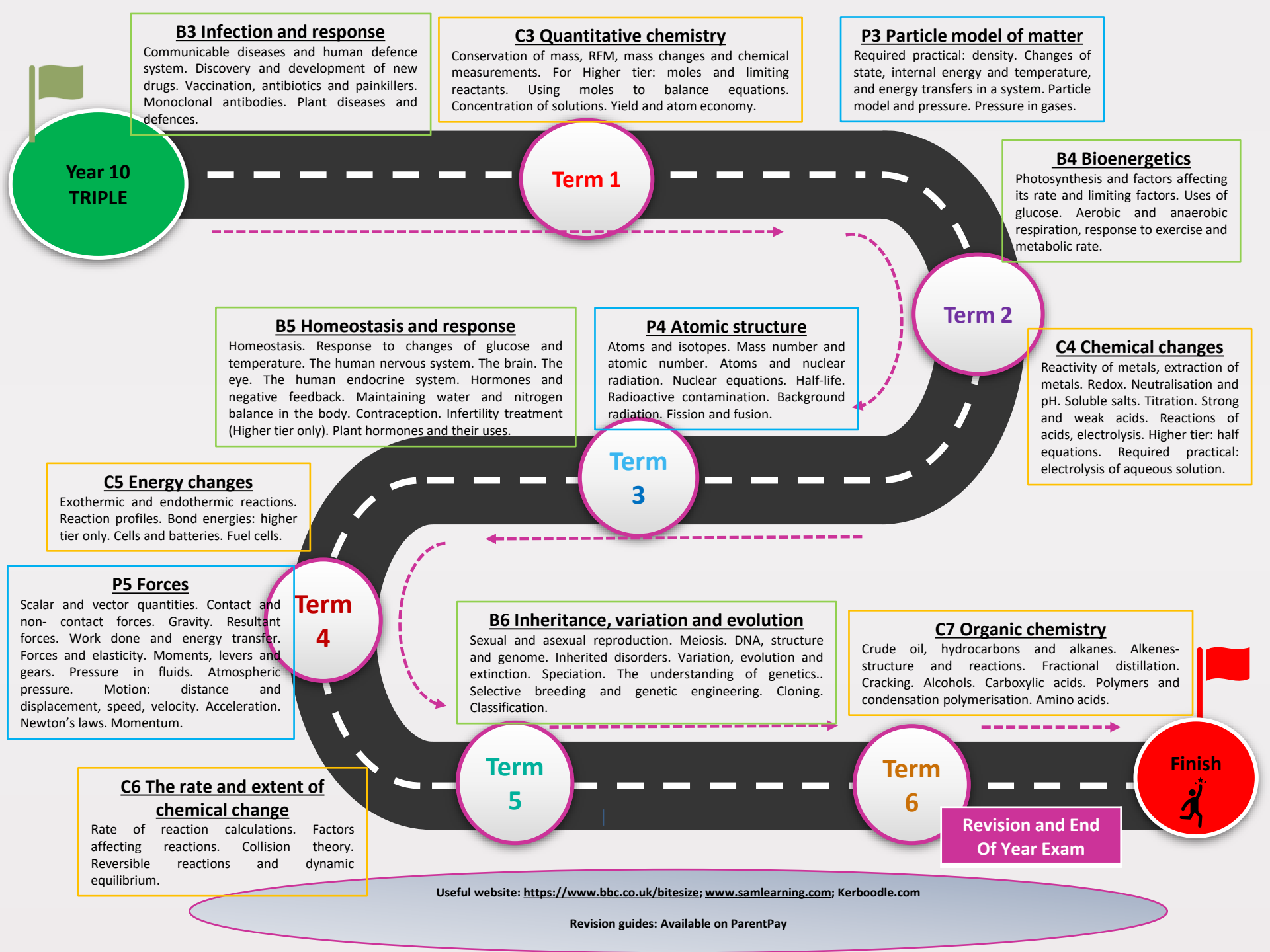
Year 10
TRIPLE
B3 Infection and response
Communicable diseases and human defence system. Discovery and development of new drugs. Vaccination, antibiotics and painkillers. Monoclonal antibodies. Plant diseases and defences.
C3 Quantitative chemistry
Conservation of mass, RFM, mass changes and chemical measurements. For Higher tier: moles and limiting reactants. Using moles to balance equations. Concentration of solutions. Yield and atom economy.
P3 Particle model of matter
Required practical: density. Changes of state, internal energy and temperature, and energy transfers in a system. Particle model and pressure. Pressure in gases.
Term 1
B4 Bioenergetics
Photosynthesis and factors affecting its rate and limiting factors. Uses of glucose. Aerobic and anaerobic respiration, response to exercise and metabolic rate.
Term 2
B5 Homeostasis and response
Homeostasis. Response to changes of glucose and temperature. The human nervous system. The brain. The eye. The human endocrine system. Hormones and negative feedback. Maintaining water and nitrogen balance in the body. Contraception. Infertility treatment (Higher tier only). Plant hormones and their uses.
P4 Atomic structure
Atoms and isotopes. Mass number and atomic number. Atoms and nuclear radiation. Nuclear equations. Half-life. Radioactive contamination. Background radiation. Fission and fusion.
C4 Chemical changes
Reactivity of metals, extraction of metals. Redox. Neutralisation and pH. Soluble salts. Titration. Strong and weak acids. Reactions of acids, electrolysis. Higher tier: half equations. Required practical: electrolysis of aqueous solution.
Term 3
C5 Energy changes
Exothermic and endothermic reactions. Reaction profiles. Bond energies: higher tier only. Cells and batteries. Fuel cells.
P5 Forces
Scalar and vector quantities. Contact and non- contact forces. Gravity. Resultant forces. Work done and energy transfer. Forces and elasticity. Moments, levers and gears. Pressure in fluids. Atmospheric pressure. Motion: distance and displacement, speed, velocity. Acceleration. Newton's laws. Momentum.
Term 4
B6 Inheritance, variation and evolution
Sexual and asexual reproduction. Meiosis. DNA, structure and genome. Inherited disorders. Variation, evolution and extinction. Speciation. The understanding of genetics.. Selective breeding and genetic engineering. Cloning. Classification.
C7 Organic chemistry
Crude oil, hydrocarbons and alkanes. Alkenes- structure and reactions. Fractional distillation. Cracking. Alcohols. Carboxylic acids. Polymers and condensation polymerisation. Amino acids.
Term 5
Term 6
Finish
C6 The rate and extent of chemical change
Rate of reaction calculations. Factors affecting reactions. Collision theory. Reversible reactions and dynamic equilibrium.
Revision and End Of Year Exam
Useful website: https://www.bbc.co.uk/bitesize; www.samlearning.com; Kerboodle.com
Revision guides: Available on ParentPay

Year 11 COMBINED

B7 Ecology

Adaptations, interdependence and competition. Biotic and abiotic factors. Organisation of an ecosystem. Required practical: sampling. Cycling of materials. Biodiversity.

C8 Chemical analysis

Purity, formulations and chromatography. Tests for gases.

Term 1

P6 Waves

Transverse and longitudinal waves. Properties of waves. Electromagnetic spectrum and properties

Term 2

C9 Chemistry of the atmosphere

The composition and evolution of the Earth's atmosphere. Carbon dioxide and methane: human activities contributing to increase in greenhouse gases. Carbon footprint. Common pollutants.

NOVEMBER MOCK REVISION

P7 Magnetism and Electromagnetism

Permanent and induced magnetism. The motor effect. Electromagnetism. Fleming's left- hand rule: Higher Tier. Electric motors- Higher Tier.

Term 3

C10 Using resources

Using the Earth's resources. Potable water. Waste water treatment. Alternative methods of extracting metals- Higher Tier. Life cycle assessment and recycling.

Term 4

REVISION and EXAMS

MARCH MOCK REVISION

Term 5

Term 6

Finish

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Revision guides: Available on ParentPay

Year 11
TRIPLE

B7 Ecology

Adaptations, interdependence and competition. Biotic and abiotic factors. Organisation of an ecosystem. Required practical: sampling. Cycling of materials. Decomposition. Impact of environmental changes. Biodiversity. Waste management. Trophic levels. Pyramids of biomass and transfer. Food production and farming techniques.

C8 Chemical analysis

Purity, formulations and chromatography. Tests for gases. Tests for cations and anions. Instrumental methods.

P6 Waves

Transverse and longitudinal waves. Properties of waves. Reflection of waves. Sound waves. Electromagnetic spectrum and properties. Lenses. Visible light. Black body radiation.

Term 1

Term 2

P7 Magnetism and Electromagnetism

Permanent and induced magnetism. The motor effect. Electric motor. Loudspeaker. Induced potential, generator effect, microphones: Higher Tier. Transformers.

NOVEMBER MOCK REVISION

C9 Chemistry of the atmosphere

The composition and evolution of the Earth's atmosphere. Carbon dioxide and methane: human activities contributing to increase in greenhouse gases. Carbon footprint. Atmospheric pollutants from fuels.

Term 3

C10 Using resources

Using the Earth's resources. Potable water. Waste water treatment. Alternative methods of extracting metals- Higher Tier. Life cycle assessment and recycling. Corrosion and its prevention. Alloys. The Haber process. Fertilisers.

Term 4

P8 Space physics

Our solar system. The life cycle of a star. Red- shift.

REVISION and EXAMS

Term 5

Term 6

Finish

MARCH MOCK REVISION

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