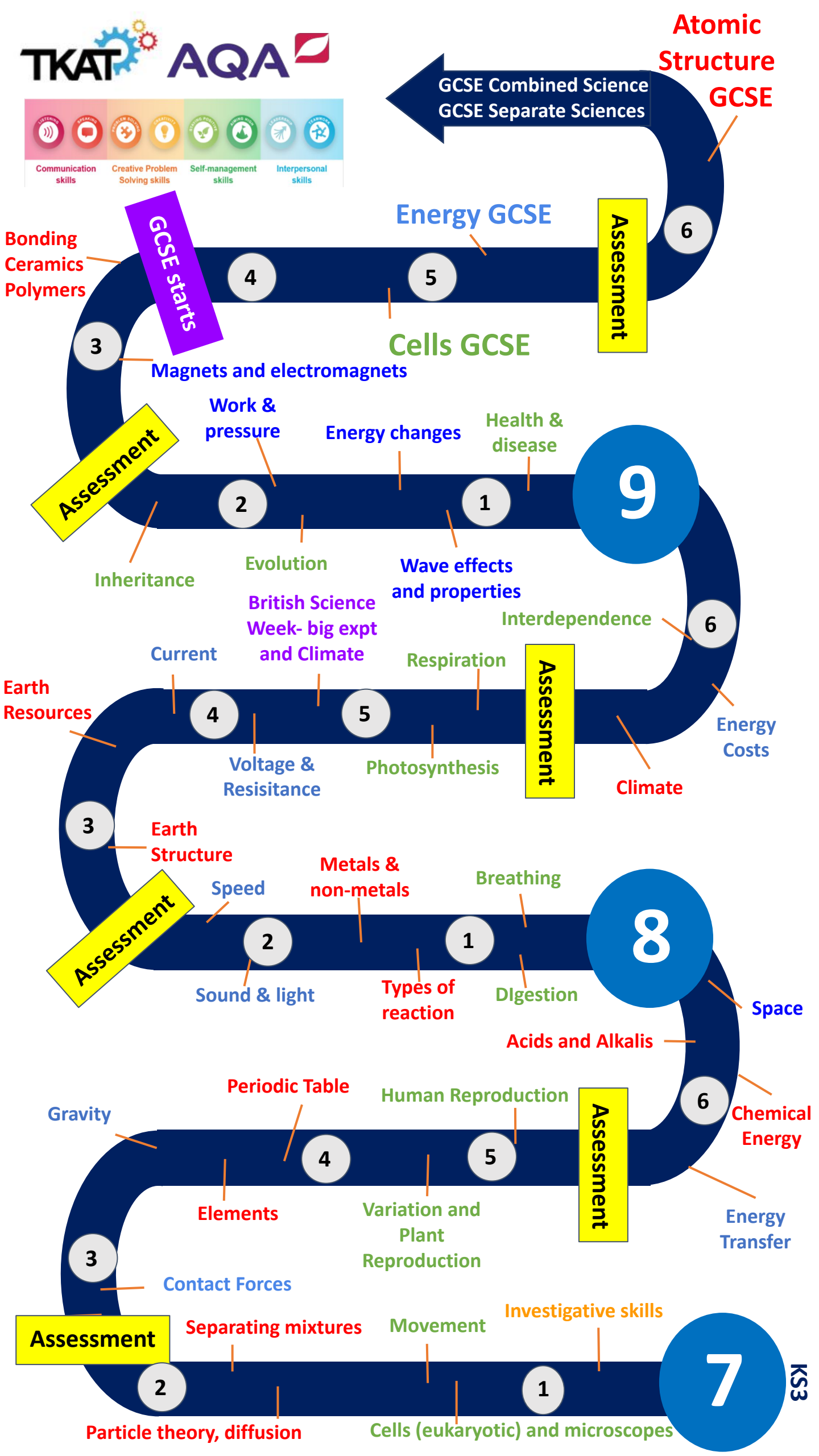
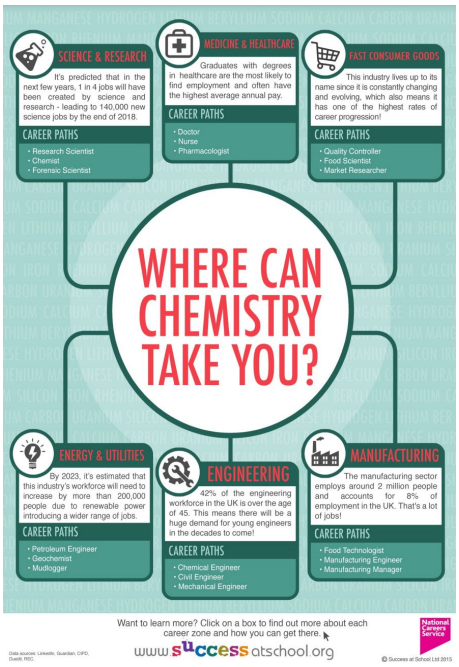
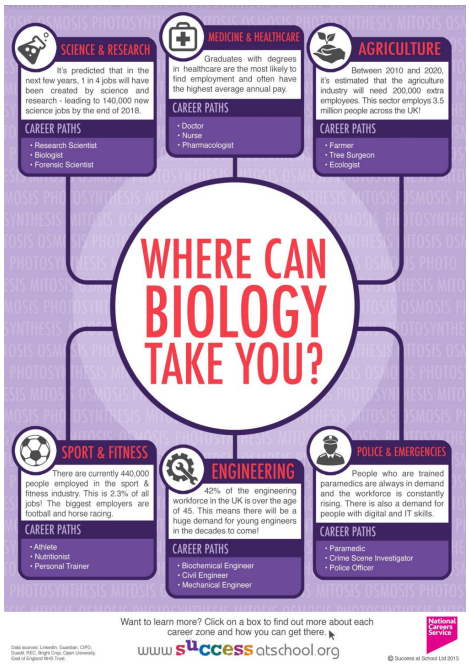
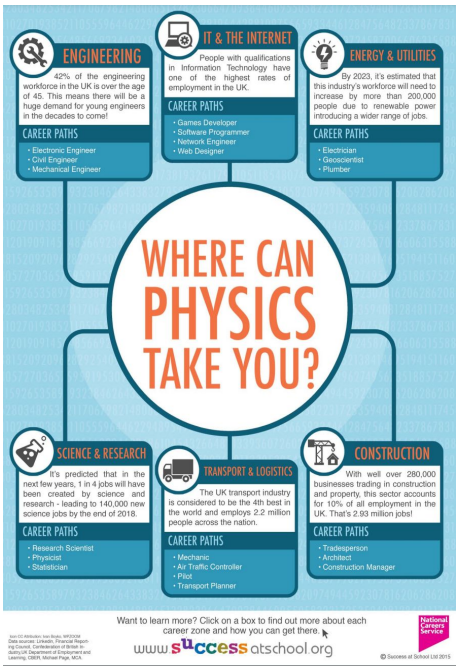
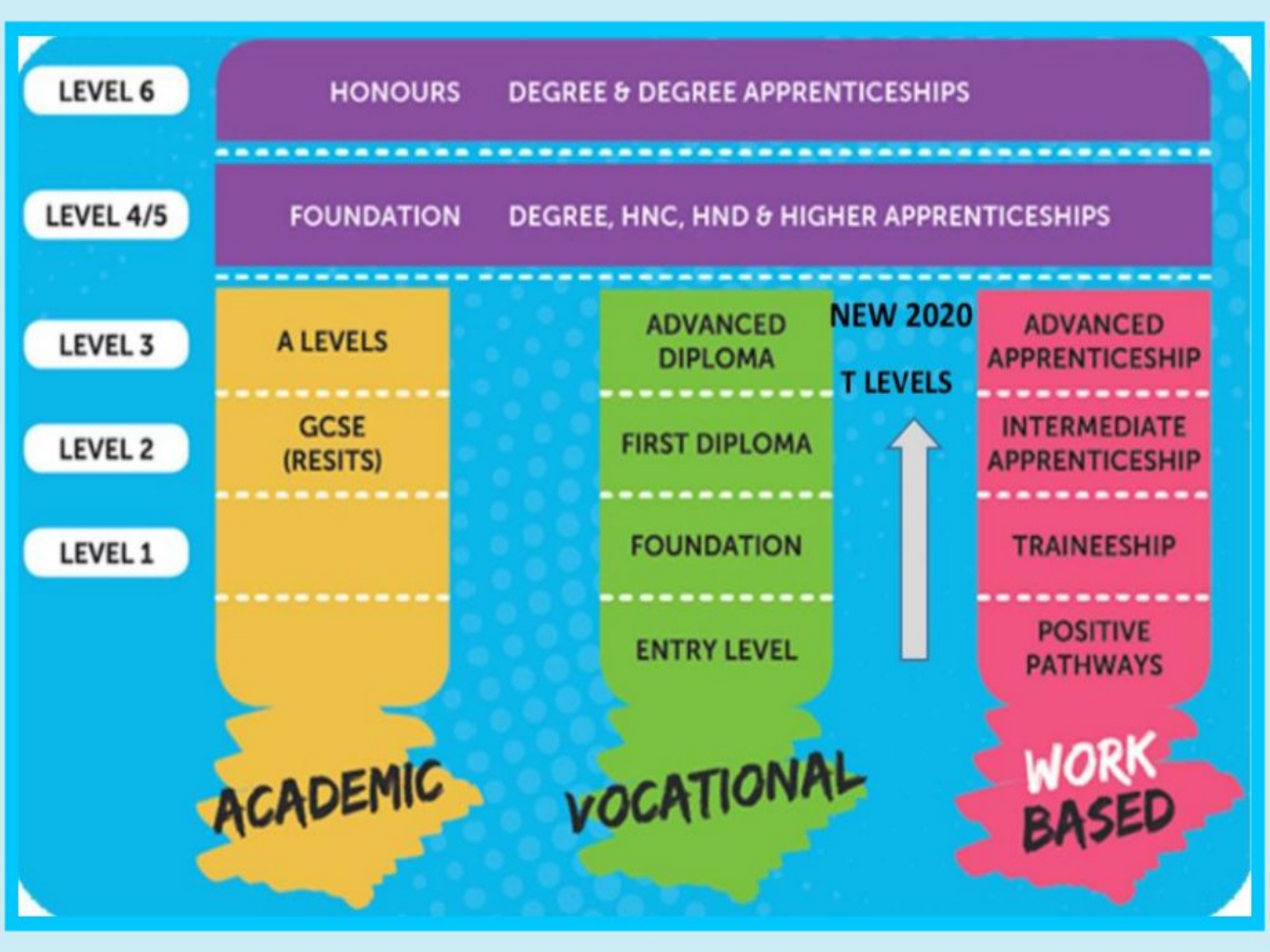

TKAT
AQA
Communication skills
Creative Problem Solving skills
Self-management skills
Interpersonal skills
GCSE Combined Science
GCSE Separate Sciences
Atomic Structure GCSE
6
Assessment
Energy GCSE
5
Cells GCSE
4
GCSE starts
Bonding
Ceramics
Polymers
3
Magnets and electromagnets
Assessment
Work & pressure
Energy changes
Health & disease
2
1
9
Inheritance
Evolution
Wave effects and properties
6
Interdependence
British Science Week- big expt and Climate
Current
Respiration
Assessment
Earth Resources
4
5
Energy Costs
Voltage & Resisitance
Photosynthesis
Climate
3
Earth Structure
Metals & non-metals
Breathing
Speed
Assessment
2
1
8
Sound & light
Types of reaction
DIgestion
Space
Acids and Alkalis
6
Periodic Table
Human Reproduction
Gravity
Assessment
Chemical Energy
4
5
Elements
Variation and Plant Reproduction
Energy Transfer
3
Contact Forces
Assessment
Separating mixtures
Movement
Investigative skills
2
1
7
KS3
Particle theory, diffusion
Cells (eukaryotic) and microscopes

What next in Science?









TKAT AQA

Communication skills | Creative Problem Solving skills | Self-management skills | Interpersonal skills

Final Exams

Exam Prep and review

Mock Paper 2

17 Using resources

Req Prac- Purification of water samples
Ceramics, polymers and composities
Alloys as useful materials
Alternative methods of extracting metals HT ONLY
Life cycle assessment and recycling
Ways if reducing the use of resources
Waste water treatment
Potable water
Using the Earth's resources and sustainable development

24 Magnetism and Electromagnetism

Fleming's left-hand rule HT ONLY
Electromagnetism
Magnetic fields
Poles of a magnet
Transformers HT ONLY
Electric motors HT ONLY
Induced potential HT ONLY
Microphones HT ONLY
Uses of the generator effect HT ONLY

16 Chem of the Atmos

The proportions of different gases in the atmosphere
The Earth's early atmosphere
How oxygen increased and Carbon dioxide decreased
Greenhouse gases
Global climate change
Human activities which contribute to an increase in greenhouse gases in the atmosphere
Atmospheric pollutants from fuels
Properties and effects of atmospheric pollutants
The carbon footprint and its reduction

7 Ecology

Req Prac- Population of a species in a habitat
Communities
Abiotic and biotic factors
Adaptations
Levels of Organisation
Pyramids of biomass and its transfer
Trophic Levels
Biodiversity
Maintaining Biodiversity
Global Warming
Deforestation
Land Use
Waste Management
How materials are cycled

Mock Paper 1

23 Waves

Properties of waves
Transverse and longitudinal waves
Req Prac- Frequency, wavelength and speed of waves in a ripple tank

15 Chemical Analysis

Req Prac- Chromatography (Calculating Rf)
Instrumental methods
Flame emission spectroscopy
Carbonates
Halides
Sulfates
Gas tests for Hydrogen, Oxygen, Carbon dioxide and Chlorine
Metal Hydroxides
Flame tests
Pure substances
Formulations
Chromatography
Uses and applications of electromagnetic waves
Properties of electromagnetic waves
Types of electromagnetic waves

6 Inheritance

Resistant Bacteria
Extinction
Classification
Genetic Engineering
Selective Breeding
Evolution
Genetic Inheritance
Inherited Disorders
Sex Determination
Variation
DNA and the genome
Meiosis
Sexual and asexual reproduction

11

Req Prac- Rates of reaction involving gas production and colour change/turbidity (focus on hypothesis)
Properties of hydrocarbons
Cracking and alkenes
Fractional distillation and petrochemicals
Crude oil, hydrocarbons and alkanes
Equilibrium
The effect of changing conditions on equilibrium HT ONLY
Calculating rates of reaction
Factors which affect the rates of chemical reactions
The effect of changing temperature, concentration and pressure on equilibrium HT ONLY
Collision theory and activation energy
Energy changes and reversible reactions
Reversible Reactions
Catalysts

14 Organic chemistry

Req Prac- Reaction TImes
Negative Feedback HT ONLY
Control of blood glucose conc.
Human Endocrine System
Human Nervous System Structure and Function
Homeostasis

22 Forces

Forces and electricity
Work Done and energy transfer
Resultant forces
Gravity
Contact and non-contact forces
Scalar and vector quantities
Distance and displacement
Distance-time graphs
Reaction times
Speed and velocity
Acceleration
Momentum is a property of moving objects HT ONLY
Stopping Distances
Factors affecting braking distances
Newton's Laws (3)
Conservation of momentum HT ONLY
Req Prac- Relationship between force and extension of a spring, Effect of force on acceleration

13 Rates of change

Req Prac- Prep of a pure, dry sample of soluble salt, Electrolysis (focus on hypothesis)
Representation of reactions at electrodes as ½ equations HT only
Electrolysis of aqueous solutions
Electrolysis of molten ionic compounds
The process of electrolysis
Soluble salts
Using electrolysis to extract metals
Reactions of acids with metals
The pH scale and neutralisation
Oxidation and reduction in terms of electrons HT ONLY

5 Homeostasis & Response

Hormones in human reproduction
Contraception
Use of hormones to treat infertility HT ONLY
Use of plant hormones HT only

Mock Paper 1

21 Atomic Structure

Nuclear equations
Half-lives and the random nature of radioactive decay
Radioactive contamination
Radioactive decay and nuclear radiation
The development of the model of the atom
LINKS to CHEMISTRY UNIT 8
Mass number, atomic number and isotopes
LINKS to CHEMISTRY UNIT 8
The structure of an atom
LINKS to CHEMISTRY UNIT 8

12 Energy changes

Req Prac- Rates of reaction involving gas production and colour change/turbidity (focus on hypothesis)
The energy change of reactions HT ONLY
Energy transfer during endo and exothermic reactions
Reaction Profiles

11 Chemical changes

Strong and weak acids HT ONLY
Metal Oxides
Neutralisation of acids and salts production
The Reactivity Series
Extraction of metals and reduction

4 Bioenergetics

Aerobic and anaerobic respiration
Response to exercise
Metabolism
Photosynthesis reaction
Rate of Photosynthesis
Use of glucose from photosynthesis
Req Prac- Effect of light intensity on rate of photosynthesis
Temperature changes in a system and specific heat capacity
Internal Energy
Changes of state and specific latent heat
Changes of state
Particle motion in gases
Density of materials

3 Infection & Response

Protist Diseases
Vaccination
Antibiotics and Painkillers
DIscovery and dev of drugs
Fungal Diseases
Bacterial Diseases
Viral Diseases
Communicable Diseases

20 Particle Model of Matter

Concentration of solutions
Conservation of mass and balanced chemical equations

10 Quantitative Chemistry

Relative Formula Mass
Amount of substances in equations HT ONLY
Moles HT ONLY
Mass changes when a reactant or product is a gas
Limiting reactants HT ONLY
Chemical measurements
Using moles to balance equations HT ONLY

Assessment

2 Organisation

Req Prac- Food Tests, Effect of pH on enzyme activity
Lifestyle/ Non-communicable disease
Cancer
Health Issues
Plant Tissues and Organ Systems
Human Digestive System
Principles- cell to organism
Blood
Heart and Blood Vessels
Coronary Heart Disease

9 Structure and Bonding

Covalent Bonding
Ionic Compounds
Chemical Bonds
Properties of metals and alloys
Properties of small molecules
Giant Covalent structures
Ionic Bonding
Graphene and fullerenes
Diamond and graphite
Metals as conductors
Metallic Bonding
Properties of Ionic Compounds
States symbols
States of Matter
Polymers

19 Electricity

Req Prac- Factors affecting the resistance of electrical circuits, Using circuits to investigate I-V characteristics
The National Grid
Energy transfers in everyday appliances
Series and Parallel Circuits
Resistors
Electric Fields
Current, resistance and potential difference
Direct and alternating potential difference
Mains Electricity
Power
Electrical charge and current
Current, potential difference and resistance

10

National and global energy resources
Efficiency
Energy transfers in a system
Energy changes in systems
Changes in energy
Energy stores and systems
Req Prac- Specific Heat Capacity

18 Energy

Mitosis and Cell Cycle
Stem Cells
Diffusion
Osmosis
Active Transport
Chromosomes
Microscopy
Cell Differentiation
Cell Specialisation
Animal and Plant Cells
Eukaryotes and Prokaryotes
Req Pracs- Using a microscope, Effect of antibiotic/septic on bacterial growth, Osmosis

8 Atomic Structure

Atoms, elements and compounds
Mixtures
Relative atomic mass
Size and mass of atoms
Development of the atom model
LINK to PHYSICS UNIT 21
Electronic structure
Development of the Periodic Table
Periodic Table
Groups 1, 7 and 0
Metals and non-metals

1 Cell Biology

9

Trilogy Science

Trilogy Science

9

- 1 Cell Biology
- 8 Atomic Structure
- 19 Electricity
- 9 Structure and Bonding
- 2 Organisation

10

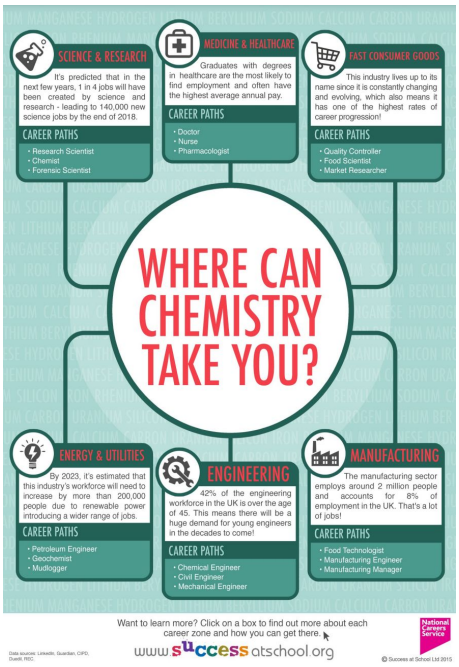
- 18 Energy
- 3 Infection & Response
- 10 Quantitative Chemistry
- 20 Particle Model of Matter
- 4 Bioenergetics
- 11 Chemical changes
- 12 Energy changes
- 21 Atomic Structure
- Mock Paper 1
- 5 Homeostasis & Response
- 13 Rates of change
- 22 Forces
- 14 Organic chemistry

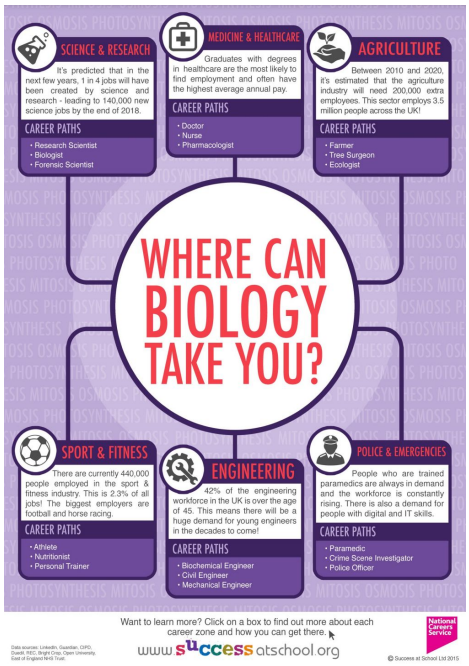
11

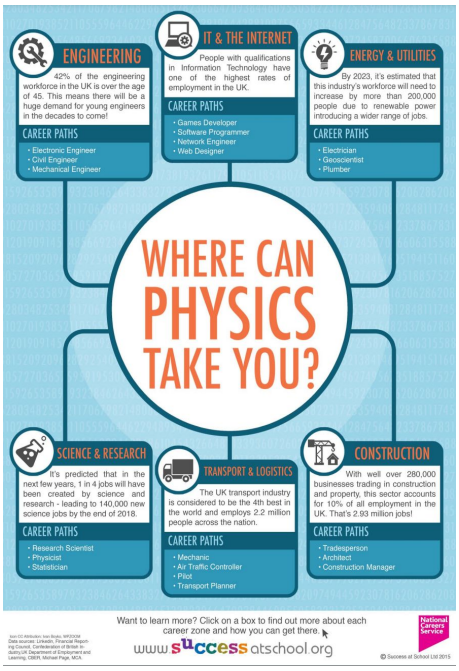
- 23 Waves
- 15 Chemical Analysis
- 6 Inheritance
- Mock Paper 1
- 7 Ecology
- 16 Chem of the Atmos
- 24 Magnetism and Electromagnetism
- 17 Using resources
- Mock Paper 2
- Exam Prep and review
- Final Exams

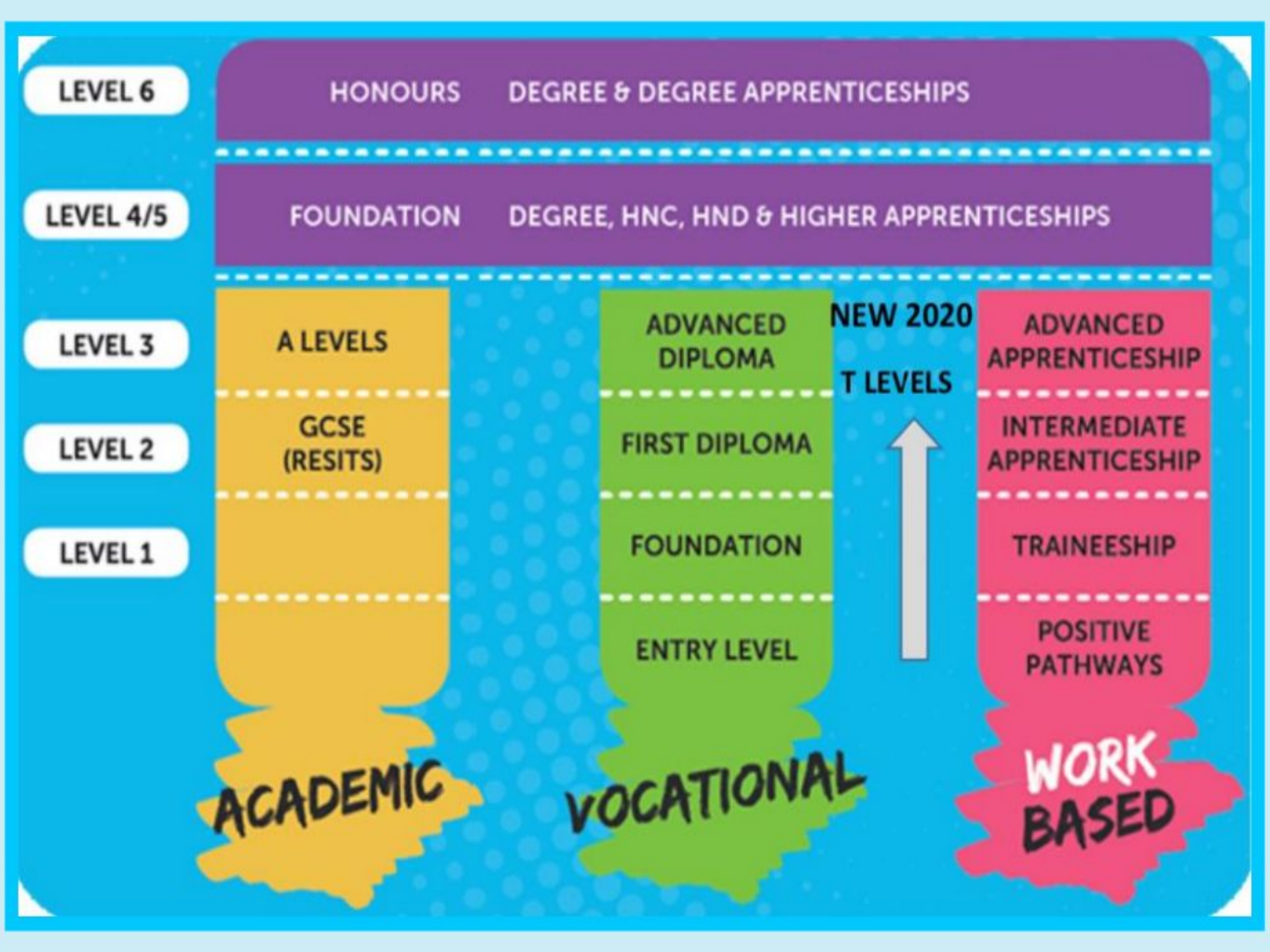
Assessment

What next in Science?









Science & Maths

1	Arithmetic and numerical computation
a	Recognise and use expressions in decimal form
b	Recognise and use expressions in standard form
c	Use ratios, fractions and percentages
d	Make estimates of the results of simple calculations

2	Handling data
a	Use an appropriate number of significant figures
b	Find arithmetic means
c	Construct and interpret frequency tables and diagrams, bar charts and histograms
h	Make order of magnitude calculations

3	Algebra
a	Understand and use the symbols: =, <, <<, >>, >, ∝ , ~
b	Change the subject of an equation
c	Substitute numerical values into algebraic equations using appropriate units for physical quantities

4	Graphs
a	Translate information between graphical and numeric form
b	Understand that $y = mx + c$ represents a linear relationship
c	Plot two variables from experimental or other data
d	Determine the slope and intercept of a linear graph
e	Draw and use the slope of a tangent to a curve as a measure of rate of change

5	Geometry and trigonometry
b	Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects
c	Calculate areas of triangles and rectangles, surface areas and volumes of cubes

Skills to get grades

We have taken the Ofqual grade descriptors and reorganised them into the four threads covered by the statements. The wording has remained unchanged.

OFQUAL Grade descriptors				
	Knowledge and understanding	**Use of mathematics**	**Data analysis**	**Evaluation of experimental methods**
Grades 8 and 8-8 Candidates will be able to	Demonstrate **relevant and comprehensive** knowledge and understanding and apply these **correctly to both** familiar and unfamiliar contexts using accurate scientific terminology	Use a **range of** mathematical skills to perform **complex** scientific calculations	**Critically analyse** qualitative and quantitative data to draw logical, well-evidenced conclusions	**Critically evaluate** and refine methodologies, and judge the validity of scientific conclusions
Grades 5 and 5-5 Candidates will be able to	Demonstrate **mostly accurate** and appropriate knowledge and understanding and apply these **mostly** correctly to familiar and unfamiliar contexts, using **mostly** accurate scientific terminology	Use appropriate mathematical skills to perform **multi-step** calculations	**Analyse** qualitative and quantitative data to draw plausible conclusions supported by some evidence	**Evaluate** methodologies to suggest improvements to experimental methods, and comment on scientific conclusions
Grades 2 and 2-2 Candidates will be able to	Demonstrate **some** relevant scientific knowledge and understanding using limited scientific terminology	Perform **basic** calculations	Draw **simple conclusions** from qualitative or quantitative data	Make **basic comments** relating to experimental methods