January 11th, 2021

Year 10 GL Assessment - Science, English, and Maths Progress Tests – February 1st – 3rd 2021

Information for Parents

Dear Parents

We provide some additional notes and guidance for you to support your child in preparation for the forthcoming Progress Tests (February 1st -3rd). **These notes include details of the main areas tested which have been covered during lessons during Years 9 and 10.** For Year 10 students, the tests are important because they will provide valuable information to indicate their potential in IGCSE and AS level exams.

The Progress Tests measure students' knowledge, understanding and application of the core subjects:

English: focuses on grammar, punctuation and spelling, and on reading comprehension, using age-appropriate fiction and information texts.

Maths: assesses key aspects of Maths appropriate to the age of the pupil including Mental Maths.

Science: measures two dimensions of science learning, understanding of science content, and 'working scientifically' (application of skills).

A link is provided to an explanatory video:

https://www.gl-assessment.co.uk/videos/introduction-to-gl-assessment/

A useful booklet about the Progress Tests can be found below.

https://www.gl-assessment.co.uk/media/205577/ptseries_assessment_overview1.pdf

Summaries of the main areas to be tested can be found below.

Please do not hesitate to contact the school if further clarification or detail is required.

Yours faithfully

Head of Secondary

Year 10 GL Assessment Progress Tests

Aspects of the National Curriculum in England for KS2 and KS3 relevant to PTS14. **Science, English and Maths Progress Tests – February 2021**

Biology

Genetics and evolution, interactions and interdependencies, material cycles and energy, structure and function of living organisms. Analysis and evaluation, experimental skills and investigations, scientific attitudes.

Objectives covered in lessons
• The structure and functions of the human skeleton, to include support, protection, movement and making blood cells; including the measurement of force exerted by different muscles • The impact of exercise, asthma and smoking on the human gas exchange system (respiration) • The importance of bacteria in the human digestive system • Levels of organisation: from cells to tissues to organs to systems to organisms • The functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts • The process of anaerobic respiration in humans and micro-organisms, including fermentation, and word equations for aerobic and anaerobic respiration. • DNA - genetic information • Ecosystems – how changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction • Organisms in an ecosystem, including food webs and insect pollinated crops • Photosynthesis - The reactants and products of photosynthesis, and a word summary for photosynthesis • Plants reproduction, including flower structure, wind and insect pollination, fertilization, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.

Links to revision material

Skeletal and muscular systems - https://www.bbc.com/bitesize/guides/zpkq7ty/revision/1

Respiration - https://www.bbc.com/bitesize/guides/zq349j6/revision/1

Health - https://www.bbc.com/bitesize/guides/zy2hpv4/revision/1

Digestive system - https://www.bbc.com/bitesize/guides/z9pv34j/revision/1

Cells to systems - https://www.bbc.com/bitesize/guides/z9hyvcw/revision/1

Evolution, extinction and biodiversity - https://www.bbc.com/bitesize/guides/zw9jq6f/revision/1

DNA - https://www.bbc.com/bitesize/guides/zp7thyc/revision/1

Food chains and food webs - https://www.bbc.com/bitesize/guides/zq4wjxs/revision/1

Photosynthesis - https://www.bbc.com/bitesize/guides/zpwmxnb/revision/1

Links to revision material

Plant reproduction - https://www.bbc.com/bitesize/guides/zs7thyc/revision/1

Chemistry

The Periodic Table, Earth and atmosphere, atoms elements and compounds, the particulate nature of matter, pure and impure substances, energetics, chemical reactions, materials, measuring, analogies and evaluation, experimental skills and investigations.

Objectives covered in lessons
• The Periodic Table: periods and groups; metals and non-metals • Elements - physical and chemical properties of different elements • Recycling metals - Earth as a source of limited resources and the importance of recycling • Atoms, elements and compounds • The carbon cycle • Extracting metals - Using carbon to displace metals from their metal oxides • Particle model - Changes of state in terms of the particle model and diffusion in terms of the particle model • Separating techniques - simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography • Energy in reactions - Exothermic and endothermic chemical reactions (heat given out and taken in) • Variable - Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate • Science equipment - use appropriate techniques, apparatus, and materials in scientific investigation • Astronomy - Structure of the Earth • What catalysts do to a reaction • Neutralisation - reactions of acids with alkalis to produce a salt plus water

Links to revision material

Atoms, elements and compounds - https://www.bbc.com/bitesize/guides/zt2hpv4/revision/3

The periodic table - https://www.bbc.com/bitesize/guides/z84wjxs/revision/1

Metals and extraction - https://www.bbc.com/bitesize/guides/zqwmxnb/revision/1

Impact of human activity - https://www.bbc.com/bitesize/guides/zt6sfg8/revision/3

Fossil fuels (Carbon cycle) - https://www.bbc.com/bitesize/guides/z27thyc/revision/2

Physical changes - https://www.bbc.com/bitesize/guides/zc9q7ty/revision/8

Solids, liquids and gases - https://www.bbc.com/bitesize/guides/z2wmxnb/revision/1

Separating mixtures - https://www.bbc.com/bitesize/guides/zgvc4wx/revision/1

Types of reaction - https://www.bbc.com/bitesize/guides/zqd2mp3/revision/3

How Science Works - https://www.bbc.com/bitesize/guides/zcxp6yc/revision/1

Links to revision material

The Earth - https://www.bbc.com/bitesize/guides/zysbgk7/revision/1

(Catalysts) Types of reaction - https://www.bbc.com/bitesize/guides/zqd2mp3/revision/3

Acids and bases - https://www.bbc.com/bitesize/guides/zyn3b9q/revision/1

The pH scale and neutralization - https://www.bbc.com/bitesize/guides/z89jq6f/revision/1

Physics

Motion and forces, electricity and electromagnetism, energy, matter, space physics, waves. Experiential skills and investigations, scientific attitudes, analysis and evaluation.

Objectives covered in lessons
• Forces - Using force arrows in diagrams, balanced and unbalanced forces • Change of state - the differences in arrangements, in movement and in closeness of particles explaining changes of state, shape and density. • Pressure in liquids, increasing with depth; upthrust effects, floating and sinking • Energy transfer - temperature difference between two objects leading to energy transfer from the hotter to the cooler one (convection), through contact (conduction) or radiation; also uses and examples of insulators • Other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels • Fuels and energy resources – fossil fuels, renewable and non-renewable resources • Static electricity - separation of positive or negative charges when objects are rubbed together: transfer of electrons, forces between charged objects • Electricity – voltage (potential difference), measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current • The seasons and the Earth's tilt, day length at different times of year, in different hemispheres • The light year as a unit of astronomical distance. • Light (reflection and refraction) - Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing. • How Science Works - accuracy, precision, repeatability, reproducibility and apply mathematical concepts and calculate results • Magnets and electromagnets - the magnetic effect of a current, electromagnets, D.C. motors (principles only) • Gravity force, weight = mass x gravitational field strength (g), on Earth g = 10 N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun • Colours and the different frequencies of light, white light and prisms, colour effects in absorption and diffuse reflection and the human eye

Links to revision materials

Forces - https://www.bbc.com/bitesize/guides/zttfyrd/revision/1

Physical changes - https://www.bbc.com/bitesize/guides/zc9q7ty/revision/8

Pressure - https://www.bbc.com/bitesize/guides/zssbgk7/revision/2

Energy stores and transfers - https://www.bbc.com/bitesize/guides/z99jq6f/revision/6

Fuels and energy resources - https://www.bbc.com/bitesize/guides/zggk87h/revision/1

Static electricity - https://www.bbc.com/bitesize/guides/zthyvcw/revision/1

Electric current and potential difference - https://www.bbc.com/bitesize/guides/zsfgr82/revision/1

Light waves - https://www.bbc.com/bitesize/guides/zq7thyc/revision/1

Links to revision materials

Electromagnetism and magnetism - https://www.bbc.com/bitesize/guides/z3g8d2p/revision/4

Astronomy and space science - https://www.bbc.com/bitesize/guides/z8wx6sg/revision/1

English

Skills and Objectives covered in lessons

Spelling, Punctuation and Grammar (Key Stage 3 Programme of Study: **Writing**)

• Plan, draft, edit and proof-read through: paying attention to accurate grammar, punctuation and spelling; applying the spelling patterns and rules set out in the key stage 1 and 2 programmes of study for English

• Plan, draft, edit and proof-read through: amending the vocabulary, grammar and structure of their writing to improve its coherence and overall effectiveness paying attention to accurate grammar, punctuation and spelling; applying the spelling patterns and rules set out in the key stage 1 and 2 programmes of study for English.

Grammar and Vocabulary (Key Stage 3 Programme of Study):

• Consolidate and build their knowledge of grammar and vocabulary through: extending and applying the grammatical knowledge set out in the English Key stage 1 and 2 Programmes of Study to analyse more challenging texts.

Reading (Key Stage 3 Programme of Study)

• Read critically through:

Knowing how language, including figurative language, vocabulary choice, Grammar, text structure and organisational features, presents meaning.

Reading Comprehension (Key stage 3 Programme of Study: Reading)

• Develop an appreciation and love of reading, and read increasingly challenging material independently through: reading a wide range of fiction and non-fiction, including in particular whole books, short stories, poems and plays with a wide coverage of genres, historical periods, forms and authors.
• Understand increasingly challenging texts through: learning new vocabulary, relating it explicitly to known vocabulary and understanding it with the help of context and dictionaries, making inferences and referring to evidence in the text, knowing the purpose, audience for and context of the writing and drawing on this knowledge to support comprehension

• Read critically through:

Knowing how language, including figurative language, vocabulary choice, grammar, text structure and organisational features, presents meaning
Studying setting, plot, and characterisation, and the effects of these.

Maths

Skills and Objectives covered in lessons

Fluency in Facts and Procedures

Students can:

- Recall mathematical facts, terminology and definitions (such as the properties of shapes);
- Recall number bonds and multiplication tables;
- Perform straightforward calculations.

Fluency in Conceptual Understanding

Students can:

- Demonstrate understanding of a mathematical concept in the context of a routine problem (e.g. calculate with or compare decimal numbers, identify odd numbers, prime numbers, multiples);
- Extract information from common representations, such as charts, graphs, tables and diagrams;
- Identify and apply the appropriate mathematical procedure or operation in a straightforward word problem (for example, knowing when to add, multiply or divide).

Mathematical Reasoning

Students can:

- Make deductions, inferences and draw conclusions from mathematical information;
- Construct chains of reasoning to achieve a given result;
- Interpret and communicate information accurately.

Problem Solving

Students can:

- Translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes;
- Make and use connections between different parts of mathematics;
- Interpret results in the context of the given problem;
- Evaluate methods used and results obtained;
- Evaluate solutions to identify how they may have been affected by assumptions made.