Assessment Map 2019-20

TCAT standardised tests

Yr 7-9 EPS2 & 4 (Title of assessment: TCAT test)

Department: **Science.**

EPS	Year 7	Year 8	Year 9	Year 10	Year 11
2	**Focus:** Cells & Movement Separating mixtures Particles Magnetism Earth Chemical Reactions **Structure:** **1-hour paper consisting of approximately 45 short and long answer questions** **Knowledge and skills assessed:** Structure and components of animal and plant cells How different mixtures can be separating, using named scientific equipment The particle model of solids, liquids and gases Fundamentals of magnetism including the identification of the poles and explaining why materials attract or repel How resources are recycled and the impact of human activity on global warming How to identify a chemical reaction through colour changes, temperature changes etc. as well as constructing basic word equations	**Focus:** Digestion Periodic Table Electromagnets Breathing **Structure:** **1-hour paper consisting of approximately 45 short and long answer questions** **Knowledge and skills assessed:** Explain what a healthy diet consists of Explain the effects of an unbalanced diet Identify the organs involved in digestion Identify metals & non-metals on the periodic table and describe their characteristics Describe patterns in the periodic table Describe how ceramics and composites are formed Explain how polymers are useful Describe how a magnet works Explain the pattern of the field lines around a magnet Explain how an electromagnet works and how to investigate the strength of an electromagnet Explain equilibrium Describe how objects can be stretched and compressed Investigate Hooke's Law Calculate pressure in solids and liquids	**Focus:** Cells to systems Plants Molecules Trends Energy transfers Matter **Structure:** **1-hour paper consisting of approximately 45 short and long answer questions** **Knowledge and skills assessed:** Identify, label and describe the structure and function of the main organelles in animal, plant and bacterial cells Describe how large multicellular organisms are organised into various levels of specialisation. Describe how the carbon dioxide needed for photosynthesis moves from the outside of the leaf to the inside by using diffusion. Describe how gas exchange happens in the alveoli of the lungs. Describe the structure of the heart, identifying the main parts. Describe the structure and function of the 4 components of the blood; red blood cells, white blood cells, plasma, and platelets. Explain how transplants, artificial pacemakers, artificial hearts, stents and statins can be used to treat issues caused by lifestyle choices.	**Focus:** **Structure:** **Knowledge and skills assessed:**	**Focus:** **Structure:** **Knowledge and skills assessed:**

			Describe the structure of a plant, including the organs Explain how water reaches the leaves of the plant Explain the role of a guard cell Investigate how the colour of light affects photosynthesis Describe plant diseases Identify elements of the periodic table Describe metals, non-metals are their ions Explain the difference between elements, compounds and mixtures Identify and describe the noble gases, group 1 metals and the halogens Describe displacement reactions with word/symbol equations Work done and energy changes on deformation. Temperature difference between two objects leading to energy transfer from the hotter to the cooler one, through contact (conduction), radiation or convection. Use of insulators. Processes involving energy transfers including Energy as a quantity that be quantified and calculated Comparing the starting with the final conditions of a system Melting, freezing, evaporation, sublimation and condensation. Similarities and differences, including density differences, between solids, liquids and gases. Calculate density of an object. Brownian motion in gases. The difference between chemical and physical changes. Atoms and Molecules as particles.		

4	**Focus:** Forces Reproduction Ecology Electricity **Structure:** **1-hour paper consisting of approximately 45 short and long answer questions** **Knowledge and skills assessed:** How to construct basic force diagrams using arrows and using Newtons as the unit Explain what is meant by a balanced force Label the main parts of the male and female reproductive systems Explain fertilisation Describe how a foetus develops Explain the effects of smoking and alcohol on pregnancy Describe menstruation Construct basic food webs Explain the effects of toxins on food webs Describe fertilisation in flowering plants Explain how and why seeds are dispersed Explain fruit formation Identify basic electrical components Explain how energy is transferred in a circuit Explain series and parallel circuits	**Focus:** Waves Ecosystems Genes Reactions Energy **Structure:** **1-hour paper consisting of approximately 45 short and long answer questions** **Knowledge and skills assessed:** Explain how sound travels and uses of sound Explain reflection and refraction of light Describe the structure of the human eye Compare longitudinal and transverse waves Describe aerobic and anaerobic respiration Explain how sport affects respiration Describe fermentation Describe photosynthesis Explain how water moves through a plant Explain the importance of minerals in plants Investigate the effect of light intensity on photosynthesis Explain natural selection Explain the importance of biodiversity Explain extinction Describe the role of chromosomes Model inheritance using Punnett squares/ genetic crosses Describe exothermic and endothermic reactions Describe combustion Describe the uses of fuels Explain thermal decomposition Describe how work is calculated Explain thermal energy	**Focus:** Disease Healthy lifestyles Metals Separating techniques Acids Energy in the home Electricity fundamentals Structure: 1-hour paper consisting of approximately 45 short and long answer questions **Knowledge and skills assessed:** Names and distinguishing features of bacteria, viruses and fungi. Names of diseases caused by different pathogens. Routes of transmissions including water, air, food, physical contact, sexual contact, animal vectors. Mechanisms to reduce the transmission of pathogens The development of the vaccine by Edward Jenner. Introduction of a version of the disease is sufficient to allow the body to create white blood cells so if the disease is introduced at a later date the body can defend itself. Drugs must go through a series of trials before being available to the public. Antibiotics stop the growth of bacterial cells which means we can recover from infection. Viruses can't be stopped by antibiotics as they are in host cells. Describe the effects of different types of drugs on the body including stimulants, depressants, hallucinogens and painkillers.		

		Describe conduction, convection & radiation	Suggest how damage to one organ can affect other body systems. Describe and explain patterns in the reactivity of metals Explain how various metals can be extracted Recall the reactivity series Explain how acids react with metals with word/symbol equations Describe how to use chromatography, distillation, filtration & crystallisation as separation techniques Identify acids and alkalis on the pH scale Explain the process of neutralisation using word/symbol equations Describe the process in making a soluble salt Explain where energy in the home comes from Measure energy in joules Calculate the energy efficiency of various items Recall electrical component symbols Explain the difference between series and parallel Describe how to measure the voltage and current of components Explain how to calculate the resistance of an electrical component **Knowledge of all previous topics should be studied in preparation for the end of the transition to GCSE period after Easter**		
6	**<u>Focus:</u>** Genetics Entirety of year 7 lessons **<u>Structure:</u>**	**<u>Focus:</u>** Earth Entirety of year 8 lessons **<u>Structure:</u>**			

	1-hour paper consisting of approximately 45 short and long answer questions **<u>Knowledge and skills assessed:</u>** Knowledge of all previous topics should be studied in preparation for the end of year exam	**1-hour paper consisting of approximately 45 short and long answer questions** **<u>Knowledge and skills assessed:</u>** Knowledge of all previous topics should be studied in preparation for the end of year exam			