



HORNCHURCH
HIGH SCHOOL
EXCELLENCE FOR ALL

Year 9

KNOWLEDGE
IS
POWER

KNOWLEDGE ORGANISER

HALF TERM 2

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English

Key Term	Definition
DAFORREST	Direct address, alliteration, facts, opinions, rhetorical questions, repetition, exaggeration, statistics, triplets
Allusion	A reference to another text
Anecdote	A story about a real incident or person
Emotive Language	Word choices intended to get an emotional reaction
Hyperbole	An extreme exaggeration
Juxtaposition	Two things being close together that contrast
Anaphora	Repetition of a phrase at the beginning of a sentence
Hypophora	When a question is asked then directly answered by the speaker
Anadiplosis	The last word or phrase is repeated to begin the next
Simile	A comparison between two things, usually using the words 'as' or 'like'

Maths

Key Term	Definition	
Ratio		
Ratio	Compares two or more numbers size to each other	
Simplifying	Cancel down to get into its simplest form	
Sharing into a ratio	Share the total amount into the ratio by working out one part first.	
Indices		
Indices	Is a power, plural for index	
Rules of indices	Base numbers have to be the same to use the rules of indices	
When you multiply you add the powers	When you divide you subtract the powers	Brackets multiply the powers
$a^m \times a^n = a^{m+n}$	$a^m \div a^n = a^{m-n}$	$(a^m)^n = a^{m \times n}$
Anything to the power of zero is one	Fractional power-numerator power, denominator root	Negative power means find the reciprocal
$a^0 = 1$	$a^{\frac{n}{m}} = (\sqrt[m]{a})^n$	$a^{-n} = \frac{1}{a^n}$
Standard Form		
Standard Form	Is a way to write really big or really small numbers	
Standard Form notation	Number between 1 and $9.9 \times 10^{\text{jumps}}$	
Area and Perimeter		
Perimeter	The distance around the outside of a shape	
Area	The amount of space inside a shape	
Percentages		
Percentage change	The percentage increase or decrease - (difference/original) *100	
Reverse percentages	Working backwards to find the original amount after an increase or decrease	
Averages and the range		
Mean	sum of data ÷ number of pieces of data	
Mode	Most common	
Median	Middle, when the data is in order	
Range	Largest value - smallest value	

Science– Cellular Organisation

Key Term	Definition
Tissue	A group of specialised cells with a similar structure and function
Organ	A collection of different tissues working together to carry out specific functions
Organ system	A group of organs that work together to carry out specific functions
Digestive system	Organ system where food is digested and absorbed
Enzymes	Biological catalysts, using proteins
Simple sugars	Small carbohydrate units, for example glucose
Lipids	Include fats and oils, and are found in foods such as butter, olive oil, and crisps. They are made of carbon, hydrogen and oxygen
Fatty acids	Part of the structure of a lipid molecule
Glycerol	Part of the structure of a lipid molecule
Proteins	Molecules that contain carbon, hydrogen, oxygen and nitrogen and are made of long chains of amino acids. They are used for building the cells and tissues of the body and to form enzymes
Amino acids	Molecules made up of carbon, hydrogen and oxygen and nitrogen that are the building blocks of proteins
Denatured	The breakdown of the molecular structure of a protein so it no longer functions
Active site	The site on an enzyme where the reactants bind
Metabolism	The sum of all the reactions taking place in a cell or the body of an organism
Amylase	Enzyme that speeds up the digestion of starch into sugars
Lipase	Enzymes that speed up the breakdown of lipids into fatty acids and glycerol
Protease	Enzymes that speed up the breakdown of proteins into amino acids
Bile	Neutralises stomach acid to give a high pH for the enzymes from the pancreas and small intestine to work well. It is not an enzyme
Plasma	The clear yellow liquid part of the blood that carries dissolved substances and blood cells around the body
Red blood cells	Biconcave cells that contain the red pigment haemoglobin and carry oxygen around the body in the blood
White blood cells	Blood cells involved in the immune system of the body. They engulf pathogens and make antibodies and antitoxins
Platelets	Fragments of cells in the blood that play a vital role in the clotting mechanism of the blood

Science– Cellular Organisation

Key Term	Definition
Urea	The waste product formed by the breakdown of excess amino acids in the liver
Haemoglobin	The red pigment that carries oxygen around the body in the red blood cells
Arteries	Blood vessels that carry blood away from the heart. They usually carry oxygenated blood and have a pulse
Veins	Blood vessels that carry blood towards the heart. They usually carry deoxygenated blood and have valves to prevent the backflow of blood
Capillaries	The smallest blood vessels. They run between individual cells and have a wall that is only one cell thick
Double circulatory system	The circulation of blood from the heart to the lungs is separate from the circulation of blood from the heart to the rest of the body
Coronary arteries	The blood vessels that supply oxygenated blood to the heart muscle
Atria	The upper chambers of the heart
Vena cava	The large vein that brings deoxygenated blood from the body into the heart
Pulmonary vein	The large blood vessel that carries oxygenated blood from the lungs back to left atrium of the heart
Ventricles	Lower chambers of the heart that contract to force blood out of the heart
Pulmonary artery	The large blood vessel that takes deoxygenated blood from the right ventricle of the heart to the lungs
Aorta	The artery that leaves the heart from the left ventricle and carries oxygenated blood to the body
Statins	Drugs used to lower blood cholesterol levels and improve the balance of HDLs to LDLs in the blood
Carcinogens	Agents that cause cancer or significantly increase the risk of developing cancer
Tumour	A mass of abnormally growing cells that forms when cells do not respond to the normal mechanisms that control growth and when control of the cell cycle is lost
Benign tumour	Growths of abnormal cells, that are contained in one area, usually within a membrane, and do not invade other tissues
Malignant tumour	Invade neighbouring tissues and spread to different part of the body in the blood where they form secondary tumours. They are also known as cancers
Xylem	The non-living transport tissue in plants that transports water from the roots to the leaves and the shoots
Phloem	The living transport tissue in plants that carries dissolved food (sugars) around the plant

Science

Key Term	Definition
Work	The energy transferred by a force. Work done (joules,J) = force (newtons, N) x distance moved in the direction of the force (metres, m)
Useful energy	Energy transferred to where it is wanted in the way that it is wanted
Wasted energy	Energy that is not usefully transferred
Dissipation of energy	The energy that is not usefully transferred and stored in less useful ways
Efficiency	Useful energy transferred by a device ÷ total energy supplied to the device
Power	The energy transformed or transferred per second. The unit of power is the watt (W)
Thermal conductivity	Property of a material that determines the energy transfer through it by conduction
Specific heat capacity	Energy needed to raise the temperature of 1kg of a substance by 1 ^o C
Specific latent heat of fusion	Energy needed to melt 1kg of a substance with no change of temperature
Specific latent heat of vaporisation	Energy needed to boil away 1kg of a substance with no change of temperature
Biofuel	Any fuel taken from living things or recently living materials, such as animal waste
Renewable energy	Energy from natural sources that is always being replenished so it never runs out
Carbon neutral	A biofuel from a living organism that takes in as much carbon dioxide from the atmosphere as is released when the fuel is burned
Nuclear fuel	Substance used in nuclear reactors that releases energy due to nuclear fission
Nucleus	Tiny positively charged object composed of protons and neutrons at the centre of every atom
Reactor core	The thick steel vessel used to contain fuel rods, control rods and the moderator in a nuclear fission reactor
Geothermal energy	Energy that comes from energy released by radioactive substances deep within the Earth

Spanish—Work

Spanish	English	Spanish	English
Soy...	I am	Creative/a	Creative
Camero/a	A waiter	Independiente	Independent
Cocinero/a	A cook	inteligente	Intelligent
Dependiente/a	A shop assistant	Organizado/a	Organised
Jardinero/a	A gardener	Paciente	Patient
Limpiador(a)	A cleaner	Práctico/a	Practical
Peluquero/a	A hairdresser	Responsable	Responsible
Recepcionista	A receptionist	Serio/a	Serious
Tengo que...	I have to...	Sociable	Sociable
Contester al teléfono	Answer the phone	Trabajador(a)	Hard working
Ayudar a los clientes	Help the customers	Me gustaría ser...	I would like to be...
Cortar el pelo	Cut hair	Quiero ser...	I want to be...
Limpiar habitaciones	Clean rooms	Abogado/a	A lawyer
Preparar comida	Prepare food	Cantante	A singer
Servir	Serve	Diseñador(a)	A designer
Vender productos	Sell products	Enfermero/a	A nurse
Difícil	Difficult	Mecánico/a	A mechanic
Duro	Hard	Periodista	A journalist
Estimulante	Stimulating	Policía	A police officer
Estresante	Stressful	taxista	A taxi driver
Interesante	Interesting	Trabajar al aire libre	Work outside
Monótono	Monotonous	...con niños	..with children
Repetitivo	Repetitive	...en equipo	...in a team
Mi jefe/a es...	My boss is...	...solo/a	...alone
Educado/a	Polite	Ganar mucho dinero	Earn lots of money
Los clientes son...	The customers are...	Ir a la universidad	go to University
exigentes	Demanding	viajar	travel
maleducados	Rude	Ser famoso/a	Be famous
Simpáticos	Nice	Tener hijos	Have children
Ambicioso/a	ambitious	Vivir al extranjero	Travel abroad
		Ser voluntario/a	Be a volunteer

History

Key Term	Definition
Democracy	A system of government by the whole population or all the eligible members of a state, typically through elected representatives
Dictatorship	A government led by a ruler with total power over a country, typically one who obtained control by force
Communism	Political system of the USSR (Russia). All property is owned by the community and each person contributes and receives according to their ability and needs
Appeasement	Policy used by Neville Chamberlain between 1937-39, where Britain/France gave in to Hitler's demands in order to keep the peace and the hope Hitler would stop
Anschluss	The union between Germany and Austria forbidden by the Treaty of Versailles but completed by Germany in 1938
Blitzkrieg	"Lightning War". Tactic used by Nazi Germany in the early years of World War II, as German forces swept through Poland, Norway, Belgium, Holland and France with astonishing speed and force
Holocaust	Systematic, state-sponsored persecution and murder of six million Jews by the Nazi regime and its allies and collaborators
The Big Three	Britain, Soviet Union, and the United States formed a Grand Alliance that was key to victory in WWII. They were led by Neville Chamberlain (UK), Winston Churchill (UK), Franklin D. Roosevelt (USA), and Joseph Stalin (USSR)
Axis	The main Axis powers were Germany, Italy, and Japan
Adolf Hitler	The leader of the Nazi Party, Chancellor of Germany from 1933-1945 and Führer of Nazi Germany from 1934-1945. On 30 April, 1945, Hitler committed suicide
Treaty of Versailles (T.O.V)	Signed on the 28th June 1919. There were 440 Articles setting out the terms for Germany's punishment after WWI. 4 main articles (LAMB)
Stormtroopers (SA)	Hitler's brown-shirted supporters, employed to beat up opponents and guard meetings
League of Nations	International peace-keeping organisation set up after World War One
Concentration	Camp in which people are held under harsh conditions and without the freedoms of the
Eugenics	The unscientific and racist belief that the mental and physical characteristics of the human race can be improved by choosing who may become parents
Aryan	Person of German or Scandinavian origin, usually fair-haired and blue-eyed; the Nazis believed that Aryans were superior to all other races
Master Race	Elite race of people, to which Hitler believed the Germans belonged
Death Camp	Extermination camp where prisoners, mainly Jews, were put to death
Kristallnacht	Night of Broken Glass, in November 1938, when Jews and their shops and businesses were attacked throughout Germany
Final Solution	Term used by the Nazis to refer to their plan to destroy Europe's Jewish population between 1942-1945

Geography

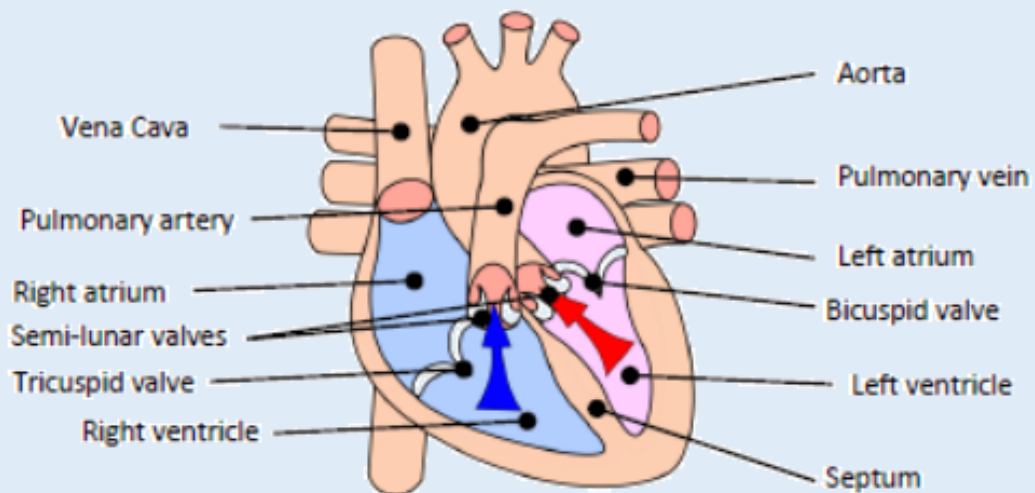
Key Term	Definition
Arab Spring	A series of pro-democracy uprisings that enveloped several largely Muslim countries, including Tunisia, Morocco, Syria, Libya, Egypt and Bahrain
Arabian Peninsula	Is a large triangular piece of land in far western Asia, which is surrounded by the Red Sea to the west, the Indian Ocean to the south, and the Persian Gulf to the east
Colonialism	When people from one country settle in another country for the purpose of exploiting its people and natural resources
Conflict	A state of disagreement caused by the perceived or actual opposition of needs, values and interests between people
Corruption	The abuse of entrusted power for private gain
Crude oil	Is a fossil fuel. It is found in reservoirs deep under the ground.
Gulf	Is a large body of water, sometimes with a narrow mouth, that is almost completely surrounded by land.
Humanitarian crisis	Is defined as a singular event or a series of events that are threatening in terms of health, safety or well-being of a community or large group of people
Irrigation	The application of water to land in order to supply crops and other plants with necessary water
Malnourishment	A state of poor nutrition. This usually results from a deficiency of proteins, energy or minerals
Oasis	An area made fertile by a source of freshwater in an otherwise dry and arid region
Sanitation	The process of keeping places clean and healthy, especially by providing a sewage system and a clean water supply
Semi Arid	An area that has low, highly variable rainfall, distributed in two rainy seasons
Refugee	People who must leave their home area for their own safety or survival
United Nations	An international governing body formed in 1945 to increase political and economic cooperation among its member countries
Water scarcity	Insufficient freshwater resources to meet the human and environmental demands of a given area

Computing and Business

Key Term	Definition
Spreadsheet	A computer program used for accounting and recording “data” using rows and columns, into which information can be entered
Cell reference	Is the intersection between a row and a column on a spreadsheet that starts with “cell” A1.
Absolute cell reference	Ensures that the cell always remains constant even when autofill is used. E.g. \$E\$4
Formula	Are usually simple calculations. They always start with an equals sign
Functions	Are predefined formulas and are already available in Excel
Merge	Is a function that enables different nearby cells to be joined into a single larger cell
Operators	Are symbols used in a formula
Chart	Is a graphical representation of data entered in spreadsheet
Sort	Organises it in a specific way
Sort & Filter	Makes it easy for us to find one specific piece of data without having to look through every piece of data
Conditional formatting	Allows you to apply special formatting to cells that meet certain criteria
IF statement	Tests a given condition and returns one value for a TRUE result and another value for a FALSE result.
V Lookup	‘Vertical Lookup’. It is a function that makes Excel search for a certain value in a column , in order to return a value from a different column in the same row.
Finance	
Revenue/Inflow	Money coming in to a business. Usually through sales of the product or service. Can also be from investors or a bank loan
Outflow/Costs/Expenses	Money leaving the business. May be payment for stock and materials, wages, rent, repayment of money borrowed
Profit	Is calculated using this formula Total revenue — Total costs
Cash flow forecast	This is a business accounting method used to predict future sales
Net cash flow	The difference between inflow and outflow in a given month
Starting balance	How much money you start with on the first day of the month. This will be the closing balance from the previous month
Closing balance	This will be your net cash flow with the starting balance added on. If the starting balance is a minus number it will have to be taken off the net cash flow.

PE—Cardiovascular system

Key Term	Definition
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Deoxygenated blood = BLUE (Right side)

Oxygenated = RED (Left side)

Components of blood

Red blood cells	Carry oxygen from the lungs to the working muscles + Removes CO ₂ .
Haemoglobin	A protein that binds and carries oxygen molecules.
White blood cells	Are part of the immune system and fight disease and infection.
Platelets	Blood platelets are formed in the bone marrow and are essential in the clotting of blood. Platelets are the workhorses of the cardiovascular system.
Plasma	Blood plasma is made up of 90% water. It contains a range of substances that aids the circulation between cells and tissues.
Arteries	Carry blood away from the heart, Oxygenated blood (except pulmonary artery) Thick/elastic walls High pressure Small lumen
Veins	Carry blood back to the heart Deoxygenated blood (except pulmonary vein) Thin walls + larger lumen Lower pressure Valves
Capillaries	In the tissue Site of gaseous exchange Very thin walls

PE—Cardiovascular system

Key Term	Definition
Resting heart rate	Is the amount of time your heart beats per minute during rest. This is measured in beats per minute.
Working heart rate	Is the amount of times your heart beats during exercise (bpm)
Maximum heart rate	Is the maximum times your heart can beat in a minute. It can be calculated from 220-your age
Stroke volume	Is the amount of blood that pumped out of the heart in each beat
Cardiac Output	Is the amount of blood that is pumped out of the heart per minute
Blood pressure	Is the amount of force the blood applies on the dies of the blood vessels
Systolic pressure	Is directly linked to pumping phase of the heart. This is where the ventricles contract to send blood around the body
Diastolic pressure	Is where the ventricles in the heart fill up with blood

Immediate Effects of Exercise	Long Term Effects of Exercise
Heart rate increases	Cardiac hypertrophy
Increased stroke volume	Increased cardiac output 7 stroke volume
Increased blood pressure	Increased ability to carry oxygen and remove carbon dioxide
Vascular shunting occurs	Increased maximum cardiac output
Increased cardiac output	Faster returning of resting heart rate (recovery).
	Lowered resting heart rate
	Growth/development of capillaries

Music

Key Term	Definition
Dynamics	The volume of the music
Pianissimo	Very quiet
Piano	Quiet
Mezzo-Piano	Medium quiet
Mezzo-Forte	Medium loud
Forte	Loud
Fortissimo	Very loud
Crescendo	Getting louder
Diminuendo	Getting quieter
Hands together	Using both hands to play the keyboard
Hand position	The note that the thumb sits on (standard is C)
Sharp	Raises the pitch of a note by a semitone (1 step)
Flat	Lowers the pitch of a note by a semitone (1 step)
Natural	Play the note without any sharps or flats added

Carousel Subjects

Performing Arts

Key Term	Definition
Brief for Production	The document provided to you before the creation of a performance idea. The brief will have important information about the constraints of your performance idea.
Creative proposal	A creative proposal is where you present your ideas to a panel of people who are going to help pay for your idea to come to life
Structure	The order in which you want to present or perform extracts or scenes
Stimulus	An object, image, word, piece of music that is used as inspiration for a performance
Monologue	A speech given by a single performer on stage
Genre	This is the style of a performance and the kinds of story, characters and design that go along with it. For example: Horror or Sci-Fi
Target Audience	This is the type of person you are aiming at with your performance. This could be based on age, interests, hobbies and many more factors
Vocal skills	Pace, pitch, volume and tone are all classed as basic vocal skills
Physical Theatre	A type of theatre that relies on the use of movement and the body to tell it's stories
Devising	This is creating a performance based on a stimulus or brief. The performance should be original
Reflection	This is analysing your rehearsal or performance and understanding what went well and what needs to be improved for next time.
Audience Interaction	When performers onstage interact with the audience. This technique is effective as it brings the audience closer to the action onstage.

Food

Key Term	Definition
Nutrients	Natural chemical substances in foods that are essential for body growth, function and health
Balanced Diet	A diet that provides a person with the right amount of nutrients for their needs
Diet	The food people eat every day
Biological Value	A measure of the amount of essential amino acids a protein based food contains
Braising	Slow cooking food in a covered pot that also contains liquid, herbs and vegetables
Boiling	Cooking food by heating it in a pan of boiling liquid (usually water)
Steaming	Cooking food with steam from boiling water or stock
Blanching	Part cooking food in boiling water for a very short time before putting it in cold water
Poaching	Cooking food in a pan of liquid below boiling point
Baking	Cooking food using dry heat, usually in the oven
Frying	Cooking food in fat or oil
Fibre	A type of carbohydrate found in fruits and vegetables
Yeast	A microorganism that is used as a raising agent in bread making
Life Stages	Stages of development that people go through during their life
Boning Knife	A knife that is used to remove bones from poultry, meat and fish. It tends to have a narrow
Climate Change	Changes in the earth's temperature that can lead to unusual and extreme weather conditions
Carbon Footprint	The measure of the amount of Carbon Dioxide gas that is released into the atmosphere from the activities of people, industry and transport
Food Provenance	Where food and the ingredients in them originally come from

Art

Key Term	Definition
Graphic Design	Is the art or skill of combining text and pictures in advertisements, magazines, or books
Typography	Is the art of arranging letters and text in a way that makes the copy legible, clear, and visually appealing to the reader
Type face	A typeface is a set of characters of the same design. These characters include letters, numbers, punctuation marks, and symbols
Serif	In typography, a serif is a small line or stroke regularly attached to the end of a larger stroke in a letter or symbol within a particular font or family of fonts
Kerning	In typography, kerning is the process of adjusting the spacing between characters in a proportional font
Layout	Refers to the arrangement of text and graphics. The layout of a document can determine which points are emphasized, and whether the document is aesthetically pleasing.
Composition	Is the arrangement of everything in a way that brings all the elements together
David Carson	Is an American graphic designer and art director. He is best known for his innovative magazine designs and use of experimental Typography
Neville Brody	Is an English graphic designer, typographer and art director. He is known for his work on The Face magazine, Arena magazine, and designing record covers for Music Artists

Design Technology

Key Term	Definition
CAD	Computer Assisted Design
Sublimation Printing	The design is printed using a sublimation printer. Pressure and heat is applied which then produces a permanent image
Heat Press	A piece of equipment used for transferring designs
Composition	Is the arrangement of everything in a way that brings all the elements together
Research	Research design refers to the framework of market research methods and techniques that are chosen by a researcher
Analysis	Detailed examination of the elements or structure of something
Concept	An abstract idea, a plan or intention
Prototype	Is an early sample, model, or release of a product built to test a concept or process
Brief	A document that specifies all the core details of the design project
Target audience	Refers to the specific group of consumers most likely to want your product or service