Year 10 – Autumn 1 – Human Biology

	Topic:	Breathing and Respiration Chapter (10.1.1)
1	What is the name of respiration with oxygen?	Aerobic
2	What is the name of respiration that occurs without oxygen?	Anaerobic
3	Is respiration an exothermic or endothermic reaction?	Exothermic
4	What is the word equation for aerobic respiration?	glucose +oxygen -> carbon dioxide +water
5	What is the word equation for anaerobic respiration in human uscle cells?	glucose -> lactic acid
6	What is the word equation for anaerobic respiration in yeast and plant cells?	glucose -> ethanol + carbon dioxide
7	What is the other name given to anaerobic respiration in yeast cells?	Fermentation
8	Which two food items can be made using anaerobic respiration of yeast cells?	Bread and alcoholic drinks
9	Which releases more energy, aerobic or anaerobic respiration?	Aerobic respiration
10	State 2 changes that happen to breathing during exercise	Breathing rate & breathing volume increase
11	State two effects of long periods of anaerobic respiration	1) Build up of lactic acid in muscles 2) oxygen debt
12	What happens to lactic acid produced during anaerobic respiration?	Blood takes it to liver where it converts back to glucose
13	Define "oxygen debt"	The amount of extra O2 needed to react with the lactic acid
14	What is the scientific name for the windpipe?	Trachea
15	What is the scientific name for the airsac?	Alveoli

	Topic:	The Heart (10.1.2)
1	Which type of vessel leaves the heart?	Arteries
2	Which type of vessel enters the heart?	Veins
3	What is the name of the 4 chambers of the heart?	Top: Left/right Atrium Bottom: Left/right ventricle
4	Where is the body's natural pacemacker (cells that control the bodies resting heart rate)?	Right atrium
5	What is the name of the blood vessel that enters the heart from the body?	Vena Cava
6	What is the name of the blood vessel that enters the heart from the lungs?	Pulmonary vein
7	What is the name of the blood vessel that goes to the lungs from the heart?	Pulmonary artery
8	What is the name of the blood vessel that goes from the heart to the rest of your body?	Aorta
9	Which side of the heart is thicker?	Left
10	Which side of the heart pumps oxygenated blood out of it and which side pumps deoxygenated?	Oxygenated = Left Deoxygenated = Right
11	What is the name for removing a heart from one person and placing it into another person?	Transplant
12	What is the name of the drug that reduces that amount of cholesterol in a persons body?	Statins
13	Which organ does a statin effect?	Liver
14	State 3 adaptations of a red blood cell	*no nucleus, *biconcave shape, *small
15	State 2 adaptations of a white blood cell	Cytoplasm contains enzymes, flexible cell membrane

	Topic:	Interpreting disease data (10.1.4)
1	Name 5 types of graph used in science	Hisogram, bar chart, frequency table, scatter graph, line graph
2	Why would you draw a bar chart?	One of your variables is categorical
3	When would you draw a line graph/scattergraph?	When both of your variables are continous
4	When would you draw a pie chart?	To show how a total is broken down into it's components
5	How do you know from looking at a graph that data is directly proportional?	A straight line graph through the origin where the gradient is 'k'
6	Describe the relationship between directly proportional variables	When one variable is doubled, the other is also doubled
7	How do you know from looking at a graph that data is inversely proportional?	Curve starting in the top left and ending bottom right
8	Describe the relationship between inversely proportional variables	When one variable doubles the other is halved
9	What is a linear relationship?	A straight line on a graph
10	What is the origin on a graph?	0,0
11	What is an anomaly?	A result that doesn't fit the pattern of results (aka outlier)
12	How do we calculate gradient on a linear graph?	$\Delta y/\Delta x$
13	How do we calculate gradient on a linear graph?	Draw a tangent and then $\Delta y/\Delta x$
14	When would you draw a histogram?	The classes/intervals are different sizes (so bar width is not equal)
15	Which variable is drawn on which axis?	X axis = independent, Y axis = dependent

	Topic:	Blood (10.1.3)
1	Which type of blood vessel has thin walls but a large lumen?	Vein
2	Which type of blood vessel has thick walls but a small lumen?	Artery
3	Which type of blood vessel has valves?	Veins
4	Which type of blood vessel has a pulse?	Artery
5	Give one non-surgical intervention that can reduce the changes of heart disease/a heart attack	Exercise/diet
6	What is the name of the specialised cell that is designed to carry oxygen?	Red Blood Cell
7	What is the name of the specialised cell that is designed to fight pathogens?	White Blood Cell
8	What is the name of the specialised cell that helps to clot our blood?	Platelets
9	What is the name of the liquid part of blood that carries dissolved substances?	Plasma
10	Give one substance that is carried in the plasma of blood	Carbon dioxide/urea/glucose
11	What is the name of the substance that can block arteries?	Cholesterol
12	What is the name of a disease that occurs when the blood vessels in the muscle of the heart get blocked?	Coronary Heart Disease
13	What are the blood vessels that provide the heart with oxygen called?	Coronary arteries
14	What is the name of the piece of wire mesh put inside a blood vessel to keep it open?	Stent
15	State the equation to calculate blood flow rate calculations	Cardiac output = heart rate x stroke volume (cm3/min) (beats/min) (cm3)

Year 10 – Autumn 1 – Human Biology (Triple Only)

	Topic:	Digestion (10.1.5)
1	Which enzyme breaks down lipids, carbohydrates and proteins?	Lipids = lipase carbohydrates = amylase Proteins = protease
2	Which enzyme is produced by the salivary glands?	Amylase
3	What is the name of the leaf shaped organ that produces enzymes?	Pancreas
4	What is the name of the organ that produces bile?	Liver
5	What is the name of the organ that stores bile?	Gall bladder
6	Is bile acidic or alkaline?	Alkaline
7	What is added to the stomach to make it acidic?	Hydrochloric acid
8	Is the stomach acidic or alkaline?	Acidic
9	What is added to the stomach to kills pathogens?	Hydrochloric acid
10	What is the name of the process that breaks down large globules of fat into smaller ones?	Emulsification
11	What are proteins, lipids and starch broken down into?	Proteins = amino acids Lipids = fatty acids and glycerol Starch = glucose
12	Which part of the digestive system are nutrients and water absorbed into the blood from?	Nutrients = small intestine Water = large intestine
13	What is the scientific name for the food pipe?	Oesophagus
14	What is the name of the process where food is pushed down the food pipe?	Peristalsis
15	Name the food group that cannot be digested in the body	Fibre

	Topic:	Transport in cells (10.1.7)
1	Substances moving from a high concentration to a low concentration is called...	Diffusion
2	Two examples of diffusion in humans are:	CO_2 + O_2 in gas exchange, urea from cells to blood
3	Three factors that affect the rate of diffusion are:	Concentration gradient, temperature, surface area of the membrane
4	How are single celled organisms adapted for diffusion?	Large surface area : volume ratio
5	How is the small intestine adapted for exchanging materials?	*Villi for large S.A. *villi one cell thick *good blood supply
6	How is the lungs adapted for exchanging materials?	*Alveoli large surface area:volume ratio, surface is moist, good blood supply
7	How is the gills adapted for exchanging materials?	*numerous folds -> large S.A. *moist *good blood flow to maintain concentration gradient
8	How is the roots adapted for exchanging materials?	*Large SA to volume ratio *lots of mitochondria for respiration -> energy for active transport
9	How is the leaves adapted for exchanging materials?	*Stomata *thin so that distance for diffusion is smaller
10	Four ways that to increase the rate of transport	*Large surface area, thin membrane, efficient blood supply (in animals), well ventillated (in animals)
11	Water moves from a dilute to concentrated solution across a partially permeable membrane via...	Diffusion
12	Pure water will move into a potato because	Of osmosis
13	(RP) How can you tell the concentration of sugar in a piece of potato?	1) Place into different concentrations of sugar solution. 2) Plot graph 3)Find concentration where mass doesn't change
14	When a substance moves against the concentration gradient, it is called..	Active transport
15	Active transport requires _____ from _____.	energy respiration

	Topic:	Kidneys (10.1.6)
1	What is the waste product produced by the liver following the break down of proteins?	Urea
2	What is the name for the process where amino acids are converted into ammonia?	Deamination
3	Where in the body are amino acids converted into ammonia?	The liver
4	Why is ammonia converted straight into urea?	Because it's toxic
5	What is the name for the process where useful substances are reabsorbed from urine into the blood?	Selective reabsorbption
6	What are the tiny tubes in the kidney called?	Tubules
7	Which hormone controls the water level in the body?	Antidiuretic hormone
8	Where is the hormone that controls the water level in the body released from?	Pituitary gland
9	What happens to the amount of ADH released when there is too much water in the blood?	Very little ADH released
10	What happens to the amount of ADH released when there is too little water in the blood?	A lot of ADH released
11	Name a treatment for kidney failure?	Dialysis or transplant
12	What is the name for the process where blood is filtered through a machine rather than the kidney?	Dialysis
13	What type of transport is used for water to be reabsorbed from the kidney tubules into the blood?	Osmosis
14	What type of transport is used for glucose/mineral ions to be reabsorbed from the kidney tubules into the blood?	Active Transport
15	Why is protein not filtered out of the blood by the nephron?	Too big