

Year 9 Medium Term Plan Terms 4, 5 & 6

Unit Title and Lesson Number	Lesson Intent	Knowledge Goal	Practical Work	Steps to Success & Vocabulary	Assessment Opportunities & Homework
Organisation lesson 1	<p>To know the relationship between cells, tissues, organs and organ systems.</p> <p>Feeds on from year 7 term 1 where students learnt about cell structure and simple levels of organisation.</p> <p>Feeds forward to year 11 variation where students learn in detail about meiosis and mitosis.</p>	To describe how organisms develop.		<ul style="list-style-type: none"> • I can define the terms cell, tissue, organ and organ system. • I can order these structures in size from smallest to largest. • I can discuss how different structures interact to support the roles of others. <p><u>Vocabulary:</u> Tissue, organ, system, collaborate.</p>	Answers to retrieval questions.
Organisation lesson 2	<p>To know the role of each organ in the digestive system.</p> <p>Feeds on from year 7 term 2 where students learnt about digestion and organ function in simple terms.</p> <p>Feeds forward to lesson 4 where students learn about enzyme activity and effect within each organ.</p>	To describe the structure of the digestive system.	Gums to bums.	<ul style="list-style-type: none"> • I can name the organs in the digestive system. • I can describe the function of each organ within the digestive system. • I can describe the passage of food through the digestive system. <p><u>Vocabulary:</u> Oesophagus, bile, enzyme, salivary, gland, pancreas, absorption.</p>	<p>Answers to retrieval questions.</p> <p><u>Homework:</u> Relevant questions from unit SLOP booklet.</p>

Organisation lesson 3	To know the tests for the four main food groups. Feeds on from year 7 term 2 where students learnt about simple tests for food groups. Feeds forward to all required practical work where students need to use their investigation toolkit.	To undertake a required practical.	Food testing RP	<ul style="list-style-type: none"> I can follow a standard procedure. I can describe the test for the four main food groups. I can analyse my results to group foods. <p><u>Vocabulary:</u> Iodine, Biurets, Benedicts, Ethanol, reagent.</p>	Answers to retrieval questions.
Organisation lesson 4	To know why certain factors affect enzymes. Feeds on from year 7 term 2 where students learnt about enzymes being chemical scissors. Feeds forward to year 11 homeostasis unit where students learn about the importance of enzymes to maintain certain internal conditions.	To describe the role of enzymes in digestion.	Starch and amylase exp	<ul style="list-style-type: none"> I can define the terms enzyme and substrate. I can explain the lock and key theory. I can explain the factors that affect enzyme activity. <p><u>Vocabulary:</u> Enzyme, substrate, active site, denature.</p>	Answers to retrieval questions.
Organisation lesson 5	To investigate how temperature affects enzymes. Feeds on from previous lesson where students learnt about the factors that affect enzyme activity. Feeds forward to all required practical work where students need to use their	To undertake a required practical	Enzymes RP	<ul style="list-style-type: none"> I can follow a standard procedure to investigate a factor affecting enzyme activity. I can collect data to measure the activity of an enzyme. <p><u>Vocabulary:</u> Water bath, pipette, variable, control, dependent,</p>	Answers to retrieval questions. 6 mark question on enzymes.

	investigation toolkit.			independent.	
Organisation lesson 6	To identify optimum conditions for enzyme activity. Feeds on from previous lesson where student learnt about factors affecting enzyme activity. Feeds forward to year 10 rates of reaction where students learn about optimum conditions for industrial processes.	To interpret data on enzymes.		<ul style="list-style-type: none"> I can process experimental evidence. I can represent my data in suitable formats. I can identify optimum conditions from graphs and tables. <p><u>Vocabulary:</u> Optimum, conditions, specific, freehand, average, anomaly.</p>	Answers to retrieval questions. Exit Ticket 1
Organisation lesson 7	To know the function of villi. Feeds on from lesson 2 where students learnt about the function of the small intestine. Feeds forward to year 11 ecology where students learn about adaptations of living things.	To describe the adaptations of the small intestine.	Visking tubing prac (model gut)	<ul style="list-style-type: none"> I can identify the adaptations of the small intestine. I can explain how these adaptations make the small intestine suited to its function. I can explain the problems that would be caused if these adaptations were not present. <p><u>Vocabulary:</u> Villi, absorption, surface area, capillary, diffusion.</p>	Answers to retrieval questions.
Organisation lesson 8	To know the chambers and blood vessels of the heart. Feeds on from year 8 term 1 where students	To describe the structure of the heart.	Heart dissection.	<ul style="list-style-type: none"> I can name the structures in the heart. I can label a diagram of the heart. 	Answers to retrieval questions. Feedback on 6 mark question.

	<p>learn about the heart and blood.</p> <p>Feeds forward to year 10 bioenergetics unit where students learn about the role of the heart during respiration.</p>			<ul style="list-style-type: none"> I can explain the function of the parts of the heart. I can explain why the heart is called a double pump system. <p><u>Vocabulary:</u> Atrium, ventricle, aorta, pulmonary, vena cava, oxygenated, deoxygenated, vein, artery.</p>	<p><u>Homework:</u> Relevant questions from unit SLOP booklet.</p>
Organisation lesson 9	<p>To explain the 4 components of blood.</p> <p>Feeds on from year 8 where students learn simply about the components of blood.</p> <p>Feeds forward to year 11 variation where students learn about the inheritance of blood groups.</p>	To describe the components of blood.	Model blood and centrifuge. Model blood exp.	<ul style="list-style-type: none"> I can name the four components of blood. I can describe the function of each component. I can explain how each component is adapted to its role. <p><u>Vocabulary:</u> Plasma, platelet, biconcave, dissolved, hormone, haemoglobin.</p>	Answers to retrieval questions.
Organisation lesson 10	<p>To know the breathing passages and structure of the chest.</p> <p>Feeds on from year 8 term 1 where students learn simply about the process of breathing.</p> <p>Feeds forward to year 10 bioenergetics where students learn</p>	To describe the structure of the lungs.	Pluck, bell jar model.	<ul style="list-style-type: none"> I can name the structures in the respiratory system. I can label a diagram of the breathing passages. I can explain how the lungs are adapted to their function. I can discuss how the 	Answers to retrieval questions.

	about how the breathing system supports respiration.			alveoli are adapted to increase the rate of diffusion. <u>Vocabulary:</u> Bronchi, bronchioles, alveoli, intercostal, trachea, diffusion, capillaries.	
Organisation lesson 11	To describe non-communicable disease. Feeds on from Key stage 2 where students learnt about micro-organisms. Feeds forward to year 10 infection and response where students learn about specific infections and diseases.	To describe the issues related to coronary heart disease.		<ul style="list-style-type: none"> • I can define the term non-communicable. • I can give examples of non-communicable disease. • I can explain how coronary heart disease occurs. • I can evaluate the options available to treat coronary heart disease. <u>Vocabulary:</u> Coronary, cardiac, communicable, stent.	<p>Answers to retrieval questions.</p> <p>Answers to homework questions.</p> <p><u>Homework:</u> Relevant questions from unit SLOP booklet.</p>
Organisation lesson 12	To describe communicable disease. Feeds on from Key stage 2 where students learnt about micro-organisms. Feeds forward to year 10 infection and response where students learn about specific infections and diseases.	To discuss factors affecting health.		<ul style="list-style-type: none"> • I can define the term communicable. • I can give examples of communicable disease. • I can describe the effects of smoking, obesity and alcohol. • I can define the term risk factor and give examples. <u>Vocabulary:</u>	<p>Answers to retrieval questions.</p>

				Risk factor, communicable, obesity, chance.	
Organisation lesson 13	To explain how leaves are adapted. Feeds on from year 8 term 1 where students learnt about factors affecting photosynthesis. Feeds forward to year 10 bioenergetics where students learn in detail the structure of the leaf.	To describe the structure of a leaf.	Leaf model	<ul style="list-style-type: none"> I can name the structures within a leaf. I can describe the function of the structures within a leaf. I can describe the passage of water, carbon dioxide and oxygen through the leaf. <p><u>Vocabulary:</u> Stoma, palisade, xylem, phloem, mesophyll, diffusion.</p>	Answers to retrieval questions.
Organisation lesson 14	To explain vascular bundles. Feeds on from year 7 term 1 where students learnt about specialist plant cells. Feeds forward to year 10 bioenergetics where students learn about the structure of the leaf in depth.	To describe transport within plants.		<ul style="list-style-type: none"> I can recall the functions of xylem and phloem. I can recall how xylem and phloem are adapted to their roles. <p><u>Vocabulary:</u> Xylem, phloem, water, minerals.</p>	Answers to retrieval questions. Answers to homework questions. <u>Homework:</u> Relevant questions from SLOP booklet.
Organisation lesson 15	To know how plants use methods of transport. Feeds on from year 9 term 1 where students learnt about diffusion. Feeds forward to year 10 bioenergetics here	To describe how plants exchange substances.		<ul style="list-style-type: none"> I can recall the three methods of exchanging substances. I can describe the processes of diffusion, osmosis and active transport. 	Answers to retrieval questions.

	students learn in detail about the structure of the leaf.			<ul style="list-style-type: none"> I can discuss how these methods are used to transport materials around plant <p>Vocabulary: Diffusion, active transport, osmosis, water, minerals.</p>	
Organisation lesson 16	To know how plants move water through them. Feeds on from year 8 where students learn about the essentials for plant growth. Feeds forward to year 10 bioenergetics where students learn about the structure of the leaf in detail.	To describe transpiration.	Potentiometer and plant.	<ul style="list-style-type: none"> I can define the term transpiration. I can explain the process of transpiration in plants. <p>Vocabulary: Transpiration, potentiometer, water, stoma, guard cells.</p>	Answers to retrieval questions. Answers to homework questions.
Organisation lesson 17	To consolidate all of our learning in the unit.	To prepare for assessment		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to support my revision. 	Answers to retrieval questions. Exit Ticket 2 Homework: Revision (Seneca, mats, bitesize)
Organisation lesson 18	To check what we know.	To undertake assessment			
Organisation lesson 19	To identify and close gaps in our understanding from our assessment.	To review progress		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to close 	Answers to topic test. Homework: Prepare for resit paper

				my knowledge gaps.	(If required)
Energy Changes lesson 1	To describe features and examples of exothermic and endothermic reactions. Feeds on from year 7 term 5 where students learnt about signs of chemical reactions. Feeds forward to year 10 reversible reactions where students learn about the effect of temperature on equilibrium position.	To classify chemical reactions.	Potassium permanganate and glycerol, Barium hydroxide and ammonium nitrate, chem. 4 you practical.	<ul style="list-style-type: none"> I can define the terms exothermic and endothermic. I can give common examples of exothermic and endothermic reactions. I can use an energy profile diagram to explain why reactions are exothermic or endothermic. <p><u>Vocabulary:</u> Reactants, products, exothermic, endothermic, profile, enthalpy, activation.</p>	Answers to retrieval questions.
Energy Changes lesson 2	To investigate energy changes in reactions. Feeds on from year 7 and 8 where students learn about investigation techniques. Feeds forward to all required practical work where students need to use their investigation toolkit.	To undertake a required practical.	Required Practical.	<ul style="list-style-type: none"> I can follow a standard procedure. I can collect and process relevant data. I can analyse my data and draw conclusions. <p><u>Vocabulary:</u> Reagent, temperature change, maximum, evaluate, improvements.</p>	Answers to retrieval questions.
Energy	To practice calculating	To calculate energy	Molymods	<ul style="list-style-type: none"> I can describe the 	Answers to retrieval

<p>Changes lesson 3</p>	<p>energy changes using bond energies. Feeds on from lesson 1 where students learnt about exothermic and endothermic reactions. Feeds forward to year 10 structure and bonding where students learn about ionic and covalent bonding.</p>	<p>changes in reactions.</p>		<p>processes of bond breaking and bond formation.</p> <ul style="list-style-type: none"> I can calculate the energy change using bond enthalpy data. <p>Vocabulary: Reactant, product, enthalpy, kilojoule, exothermic, endothermic.</p>	<p>questions.</p> <p>6 mark question on exothermic reactions.</p>
<p>Energy Changes lesson 4</p>	<p>To practice calculating energy changes using bond energies. Feeds on from lesson 1 where students learnt about exothermic and endothermic reactions. Feeds forward to year 10 structure and bonding where students learn about ionic and covalent bonding.</p>	<p>To calculate energy changes in reactions.</p>	<p>Molymods.</p>	<ul style="list-style-type: none"> I can describe the processes of bond breaking and bond formation. I can calculate the energy change using bond enthalpy data. <p>Vocabulary: Reactant, product, enthalpy, kilojoule, exothermic, endothermic.</p>	<p>Answers to retrieval questions.</p>
<p>Energy Changes lesson 5</p>	<p>To describe chemical cells. Feeds on from year 8 term 1 where students learnt about sustainable energy resources. Feeds forward to year 10 chemical changes where students learn about electrolysis in</p>	<p>To describe how batteries work.</p>	<p>Fruit batteries or electrical cells prac.</p>	<ul style="list-style-type: none"> I can recall what direct current is. I can describe the structure of a battery. I can explain the difference between single life and rechargeable batteries. 	<p>Answers to retrieval questions.</p> <p>Exit Ticket 1</p>

	detail.			Vocabulary: Cell, redox, battery.	
Energy Changes lesson 6	To describe the hydrogen fuel cell. Feeds on from year 8 term 1 where students learnt about sustainable energy resources. Feeds forward to year 10 chemical changes where students learn about electrolysis in detail.	To describe alternative fuels.	Fuel cell prac/model.	<ul style="list-style-type: none"> I can label a hydrogen fuel cell. I can describe in simple terms how a hydrogen fuel cell works. I can discuss the advantages and disadvantages of hydrogen fuel cells compared to other fuels. Vocabulary: Decomposition, redox, membrane, electrolysis.	<p>Answers to retrieval questions.</p> <p>Feedback on 6 mark question.</p>
Energy Changes lesson 7	To consolidate all of our learning in the unit.	To prepare for assessment		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to support my revision. 	<p>Answers to retrieval questions.</p> <p>Exit Ticket 2</p> <p>Homework: Revision (Seneca, mats, bitesize)</p>
Energy Changes lesson 8	To check what we know.	To undertake assessment			
Energy Changes lesson 9	To identify and close gaps in our understanding from our assessment.	To review progress		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to close my knowledge gaps. 	<p>Answers to topic test.</p> <p>Homework: Prepare for resit paper (If required)</p>

Electricity lesson 1	To explain how static electricity is produced. Feeds on from year 7 term 5 where students learnt about simple static electricity. Feeds forward to lesson 3 where students learn about charge.	To describe static electricity.	Van der Graaf and accessories.	<ul style="list-style-type: none"> I can describe the structure of an atom. I can explain why electrons can be lost but not protons or neutrons. I can describe how static electricity occurs. <p><u>Vocabulary:</u> Charge, nucleus, insulator, conductor, friction, static, electrons, transfer.</p>	Answers to retrieval questions.
Electricity lesson 2	To explain how sparking can occur. Feeds on from year 7 term 5 where students learnt about simple static electricity. Feeds forward to lesson 3 where students learn about charge.	To explain the dangers and uses of static electricity.	Van der Graaf and accessories.	<ul style="list-style-type: none"> I can draw diagrams to show charged spheres. I can describe the term earthing. I can explain why electric shocks occur. I can describe uses for static electricity. <p><u>Vocabulary:</u> Attraction, repulsion, ground, charge, gain, lose.</p>	Answers to retrieval questions. <u>Homework:</u> Relevant questions from unit SLOP booklet.
Electricity lesson 3	To use and manipulate the charge equation. Feeds on from year 7 term 5 where students learnt about simple static electricity. Feeds forward to lesson 4 where	To describe and calculate charge.		<ul style="list-style-type: none"> I can the term charge. I can identify the factors that affect charge. I can apply and manipulate the equation for charge. 	Answers to retrieval questions.

	students learn about potential difference.			Vocabulary: Coulomb, current, time, charge.	
Electricity lesson 4	To use and manipulate the equation for potential difference. Feeds on from year 7 term 5 where students learnt about simple static electricity. Feeds forward to lesson 5 where students learn about resistance.	To describe and calculate potential difference.		<ul style="list-style-type: none"> I can the term potential difference. I can identify the factors that affect potential difference. I can apply and manipulate the equation for potential difference. Vocabulary: Voltage, potential difference, time, charge, energy transferred.	Answers to retrieval questions. Exit Ticket 1
Electricity lesson 5	To use and manipulate the equation for Ohms law. Feeds on from year 7 term 5 where students learn to simply use Ohms law. Feeds forward to the next few lessons on components and resistance, current and voltage.	To describe the terms current, potential difference and resistance.	Blue knotted rope.	<ul style="list-style-type: none"> I can define the terms current, potential difference and resistance. I can use and manipulate the equation for resistance. Vocabulary: Resistance, current, potential difference, proportional.	Answers to retrieval questions. Answers to homework questions. Homework: 6 mark question on resistance.
Electricity lesson 6	To investigate how the length of a wire affects the resistance. Feeds on from year 7 term 5 where students learn to simply use Ohms law.	To undertake a required practical.	Resistance required prac.	<ul style="list-style-type: none"> I can follow a standard procedure. I can collect and process relevant data. I can analyse my data and draw 	Answers to retrieval questions.

	Feeds forward to the next few lessons on components and resistance, current and voltage.			conclusions. Vocabulary: Voltmeter, ammeter, risk assessment, resistance, indirectly, series, parallel.	
Electricity lesson 7	To explain VI graphs for components. Feeds on from year 7 term 5 where students learn to simply use Ohms law. Feeds forward to the next few lessons on components and resistance, current and voltage.	To describe the characteristics of some components.	Locktronics kits, resistors, bulbs, diodes, leads, ammeters, voltmeters.	<ul style="list-style-type: none"> I can identify the voltage/current graphs for fixed resistors, filament bulbs and diodes. I can explain the shape of each graph using the term resistance. Vocabulary: Temperature, resistance, current, voltage, directly proportional.	Answers to retrieval questions.
Electricity lesson 8	To investigate the IV characteristics of components. Feeds on from year 7 term 5 where students learn to simply use Ohms law. Feeds forward to the next few lessons on components and resistance, current and voltage.	To undertake a required practical.	IV Req Prac.	<ul style="list-style-type: none"> I can follow a standard procedure. I can collect and process relevant data. I can analyse my data and draw conclusions. Vocabulary: Voltmeter, ammeter, risk assessment, resistance, proportional, series, parallel.	Answers to retrieval questions. Feedback on 6 mark question.
Electricity lesson 9	To investigate the resistance of thermistors. Feeds on from year 7	To describe how thermistors work.	Thermistors, thermometers, multimeters.	<ul style="list-style-type: none"> I can describe what a thermistor is. I can collect evidence and deduce 	Answers to retrieval questions. Homework:

	<p>term 5 where students learn to simply use Ohms law.</p> <p>Feeds forward to the next few lessons on components and resistance, current and voltage.</p>			<p>how a thermistor responds to temperature.</p> <p><u>Vocabulary:</u> Resistance, temperature, current.</p>	<p>Relevant questions from unit SLOP booklet.</p>
Electricity lesson 10	<p>To investigate the resistance of LDRs.</p> <p>Feeds on from year 7 term 5 where students learn to simply use Ohms law.</p> <p>Feeds forward to the next few lessons on components and resistance, current and voltage.</p>	To describe how LDRs work.	LDRs, multimeters, black tubes, desk lamps.	<ul style="list-style-type: none"> • I can describe what a light dependent resistor is. • I can collect evidence and deduce how a light dependent resistor responds to light intensity. • I can describe how to compensate for background light levels. <p><u>Vocabulary:</u> Resistance, light intensity, current.</p>	Answers to retrieval questions.
Electricity lesson 11	<p>To deduce V and I relationships in series circuits.</p> <p>Feeds on from year 7 term 5 where students learn about rules in electrical circuits.</p> <p>Feeds forward to lesson 13 where students use prior knowledge to solve complex circuit problems.</p>	To describe relationships in series circuits.	Locktronics kits, leads, ammeters and voltmeters.	<ul style="list-style-type: none"> • I can state the current and potential difference rules for series circuits. • I can use these rules to find missing values for current and potential difference in series circuits. • I can calculate the total resistance in a 	Answers to retrieval questions.

				series circuit. <u>Vocabulary:</u> Equal, pathway, shared, non-equal.	
Electricity lesson 12	To deduce V and I relationships in parallel circuits. Feeds on from year 7 term 5 where students learn about rules in electrical circuits. Feeds forward to lesson 13 where students use prior knowledge to solve complex circuit problems.	To describe relationships in parallel circuits.	Locktronics kits, leads, ammeters and voltmeters.	<ul style="list-style-type: none"> I can state the current and potential difference rules for parallel circuits. I can use these rules to find missing values for current and potential difference in parallel circuits. I can estimate the total resistance in a parallel circuit. <u>Vocabulary:</u> Equal, pathway, shared, non-equal.	Answers to retrieval questions. Answers to homework questions. <u>Homework:</u> Relevant questions from unit SLOP booklet.
Electricity lesson 13	To use Ohms law and circuit relationships to solve missing values. Feeds on from year 7 term 5 where students learn about rules in electrical circuits. Feeds forward to year 11 magnetism where students use previous equations to find out unknowns.	To solve circuit problems.		<ul style="list-style-type: none"> I can identify circuits as series or parallel. I can apply circuit rules and Ohms Law to calculate missing values in circuits. <u>Vocabulary:</u> Potential difference, current, resistance, ammeter, voltmeter.	Answers to retrieval questions. Exit Ticket 2
Electricity lesson 14	To use and manipulate equations for electrical	To describe and calculate electrical	Different wattage bulbs in circuits demo.	<ul style="list-style-type: none"> I can recall the definition of power. 	Answers to retrieval questions.

	<p>power.</p> <p>Feeds on from year 8 term 1 where students learnt about the cost of electricity.</p> <p>Feeds forward to year 11 magnetism where students learn about power in transformers.</p>	power.		<ul style="list-style-type: none"> I can calculate electrical power. I can manipulate the equation for electrical power. I can deduce what size fuse to use for a device. <p><u>Vocabulary:</u> Wattage, brightness, powerful, substitution.</p>	
Electricity lesson 15	<p>To describe the properties and uses of alternating and direct current.</p> <p>Feeds on from year 7 term 5 where students learnt about current.</p> <p>Feeds forward to year 11 magnetism where students learn about power in transformers.</p>	To describe types of current.	Powerpack and oscilloscope to show ac/dc.	<ul style="list-style-type: none"> I can name the two types of electrical current. I can explain the similarities and differences between direct and alternating current. I can explain the uses of alternating and direct current. <p><u>Vocabulary:</u> Direct, alternate, direction, power.</p>	<p>Answers to retrieval questions.</p> <p>Answers to homework questions.</p> <p><u>Homework:</u> Relevant questions from unit SLOP booklet.</p>
Electricity lesson 16	<p>To explain the materials for each part of a three pin plug.</p> <p>Feeds on from key stage 2 where students learnt about electrical safety.</p> <p>Feeds forward to year 10 structure and bonding where students learn about</p>	To describe the structure of plugs.	Plug exp.	<ul style="list-style-type: none"> I can name the components of a three pin plug. I can label a diagram of the three pin plug. I can explain how each component is suited to its role. I can wire a plug safely. 	Answers to retrieval questions.

	the structure and properties of conductors and insulators.			Vocabulary: Pin, terminal, earth, neutral, live, fuse, brass, insulate, insulator.	
Electricity lesson 17	To explain the stages of the national grid. Feeds on from year 9 term 1 where students learnt about the generation of electricity. Feeds forward to year 11 magnetism where students learn about how transformers work.	To describe how electricity is distributed.	National Grid demo. Steam engine.	<ul style="list-style-type: none"> I can recall how electrical energy is generated using steam. I can name the components of the national grid. I can explain how the national grid reduces energy losses. I can explain why it's important to minimise energy loss. Vocabulary: Generate, heating effect, percentage loss, transformer, grid.	Answers to retrieval questions.
Electricity lesson 18	To consolidate all of our learning in the unit.	To prepare for assessment		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to support my revision. 	Answers to retrieval questions. Exit Ticket 3 Homework: Revision (Seneca, mats, bitesize)
Electricity lesson 19	To check what we know.	To undertake assessment			
Electricity lesson 20	To identify and close gaps in our understanding from our assessment.	To review progress		<ul style="list-style-type: none"> I can identify my areas to develop. I can use a variety of resources to close 	Answers to topic test. Homework: Prepare for resit paper

				my knowledge gaps.	(If required)
--	--	--	--	--------------------	---------------