7 Science Coursework Planner

Term 2: Physics

Trinity Bay Science

Use of this coursework plan:

Use this coursework plan to inform your learning. You should tick off a topic as you learn and understand it and study it at home. Weekly homework is expected with well written sentences. **Topic 8.2 and Ex 8.2 Q 1 – 5** means students need to read this section and complete the numbered questions for homework. Your answers should be of a higher standard than the simple answers provided by the textbook. These answers will be provided at the end of each week electronically.

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Summative Assessment: 1 x 70 min exam **Criterion Assessed: Understanding and Skills**

WK	SUBJECT MATTER AND TEXTBOOK WORK	GUIDANCE ASSESSMENT x3 FEEDBACK x3 Weekly Homework
1	**Forces** ☐ *Understand* that different forces act on objects and to know that a *force* is a push or a pull ☐ *Know* the difference between *contact and non-contact* forces ☐ *Understand* the difference between *balanced and unbalanced* forces and their effects ☐ *Understand* that forces can be represented diagrammatically (force diagrams) and know how to use *arrows* to represent these forces ☐ ***Websites to check*** https://clickv.ie/w/FQrm https://www.youtube.com/watch?v=WCPTKRaScgE https://www.youtube.com/watch?v=YyJSlcIbd-s	*Coursework planner handed out* *Bookwork expectations delivered* **Homework:** Read topic 8.2.1 - 8.2.4 Complete Ex 8.2 Q 1-5
2	**Gravity** ☐ *Identify* the direction objects are pulled by *gravity* ☐ *Describe centre of gravity* and how it applies to the movement of objects ☐ *Know* that the standard of unit of force is the newton (N) ☐ *Use* a *tubular spring balance* to accurately measure the force acting on an object ☐ ☺ *Explain* how *mass and weight are different* ☐ ***Website to check*** https://www.youtube.com/watch?v=Kw51KiZhm0I	**Homework:** Read Topic 8.5.1, 8.5.2 Complete Ex 8.5 Q 2,3,4,5 ☺ 1,6 **Something extra for class or home** Complete Worksheet 8.1 & 8.3 on Readcloud
3	**Science Skills** ☐ *Select* appropriate *independent, dependent* and *controlled variables* for an experiment. ☐ *Construct* Aim, Materials and Method sections of a scientific report in the appropriate format ☐ *Understand* the importance of making accurate and comprehensive observations in science ☐ *Measure* and *record* accurate results using scientific equipment ☐ *Record*, *graph* and *calculate* average data ☐ ☺ *Analyse* and *interpret* data ☐ ***Websites to check*** https://www.goodscience.com.au/year-7-science/the-scientific-method/ https://clickv.ie/w/7Yjm	*Class quizzes / warm-ups with feedback* Random in class bookwork check **Homework:** Read Topic 1.4 Complete Ex 1.4 Q 2,3,4 ☺ 5 **Something extra for class or home**. Complete Worksheet 1.5 on Readcloud
4	**Friction** ☐ *Understand* that *friction is a force* that has to be overcome ☐ *Understand* that *friction* is necessary for movement and control	*Formative assessment* *Class quizzes / warm-ups with feedback*

	☐ *Know* how to plan for an investigation and be able to identify *title, aim, variables, hypothesis* ☐ *Refer* to an exemplar and carry out an experiment into the effect different surfaces have on the amount of force required ☐ ☺ *Explain* the ways in which unwanted friction can be reduced in everyday life e.g. Streamlining and lubricants ☐ ***Website to check*** http://www.physics4kids.com/files/motion_friction.html	**Homework:** Read Topic 8.6.1, 8.6.2 Complete Ex 8.6 Q 1-6 ☺ 7,14 Read Topic 1.7 **Something extra for class or home** Complete Worksheet 8.5 on Readcloud
5	**Friction** ☐ *Analyse* and *interpret* data for an investigation ☐ *Write* a discussion and conclusion for a scientific report ☐ *Understand* that *air resistance* is a force that opposes movement through air ☺ *Explain* why air resistance increases as an object moves faster	**Homework:** Read Topic 1.6 Read Topic 8.5.4 Complete Ex 8.5 Q 7,8 ☺ 15,17
6	**Planning an experiment** ☐ *Identify* a question, plan and conduct fair tests considering safety ☐ *Construct* a helicopter and describe how the forces acting on the helicopter affect its motion ☐ *Conduct* the standard helicopter experiment ☐ *Record*, *graph* and *calculate* average data ☐ ☺ *Identify* a trend or relationship for the data ☐ ***Website to check*** https://www.youtube.com/watch?v=urzpmBaIu6o	*Class quizzes / warm-ups with feedback* **Homework:** Read Topic Ex 1.5.1, 1.5.2 Complete Ex 1.5 Q 1 – 3, 12
7	**Modifying an experiment** ☐ *Identify* an improvement to the helicopter design and relate to problems during standard helicopter experiment ☐ *Use* evidence to draw conclusions and relate test performance to changes in helicopter design control variables ☐ *Conduct* the modified helicopter experiment ☐ *Record, graph and calculate average data* ☐ ☺ *Identify* a trend or relationship for the data ☐ ☺ *Analyse* data and draw conclusions ☐ ***Websites to check*** https://www.youtube.com/watch?v=2rX--Y5gCnE https://www.jpl.nasa.gov/edu/learn/project/make-a-paper-mars-helicopter/	**Homework:** Read Topic Complete Ex 1.5 Q 4 – 5, 7, 8 Complete Ex 1.7 Q 11 a – f
8	**Revision** ☐ Revision	
9	**Assessment** ☐ Exam (Understanding and skills)	*Summative assessment* *Exam*
10	**Simple machines** ☐ *Understand* how simple machines provide *mechanical advantage* and how they are used in occupations ☐ *Understand* that simple machines reduce the amount of force needed to complete a task ☐ *Investigate* how an inclined plane reduces force ☐ ☺ Know that complex mechanical systems or compound machines may be a combination of simple machines ☐ ***Website to check*** https://clickv.ie/w/oYjm	*Exam feedback* **Homework:** Read Topic 9.1, 9.2, 9.3 Complete Ex 9.2 Q 1-6, Ex 9.3 Q 1-6 ☺ Read Topic Ex 9.6 Complete Ex 9.6 Q 1-7

8 Science Coursework Planner

Term 2: Earth and Environmental Science

Trinity Bay Science

Use of this coursework plan:

Use this coursework plan to inform your learning. **Read topic 3.4 and Complete Ex 3.4 Q: 1, 2, 3** means students need to read this section and complete the numbered questions for homework for this week.

Note: ☺ will be used for high level (A or B standard) concepts only. These items may not be addressed by all classes.

Summative Assessment: End of term exam

Criterion Assessed: Science Understanding and Science Skills

WEEK	SUBJECT MATTER	GUIDANCE *Assessment x3* *Feedback x 3* Weekly Homework
1	**Scientific Report** ☐ **Recall** the structure of a scientific report including the headings: **Title, Aim, Variables, Hypothesis, Materials, Method, Results, Analysis, Discussion, and Conclusion.** ☐ **Practise** writing **independent**, **dependent** and **controlled variables** for a range of experiments. ☐ **Practise** writing **hypotheses** for a range of experiments. **Websites to check** Video on the scientific process PowerPoint on by email	*Coursework planner handed out* **Homework** Read topic 1.3 Complete Ex 1.3 Q 1-3, 5
2	**Scientific Report: Planning for an Experiment** ☐ **Develop** the **Aim, Variables and Hypothesis** for the aspirin experiment. ☐ **Conduct** an experiment into the 'Effect of surface area on the time taken to dissolve an aspirin". ☐ **Graph** data from aspirin experiment. **Websites to check** Dissolving Video Video on Aspirin	**Homework** Read topic 1.5 Complete Ex 1.5 Q 1-3, 6 **Handout Assessment** **Mentos Experiment**
3	**Scientific Report: Results and Discussion** ☐ **Practise identifying** trends in **Results** and summarising data. ☐ **Examine** the ***A exemplar*** for the aspirin experiment with a key focus on the **Discussion.** ☐ Conduct an experiment investigating the effect of temperature on chemical reactivity. ☐ **Conduct an experiment investigating the effect of changing the soft drink type on the mass of carbon dioxide lost (Mentos experiment).** ☐ Practise writing paragraphs for the Discussion of experimental results. ☐ Practise writing a conclusion. **Websites to check** Mythbusters Coke and Mentos experiment	***Start Mentos Experiment*** **Homework** Read topic 1.6 Complete Ex 1.6 Q 1, 4

4	**Begin weathering and erosion** ☐ **Know** that rocks break down by processes such as weathering and acid rain. ☐ **Know** that the process of removing weathered rock is called erosion. **Websites to check** Video on weathering and erosion	**Homework** Read topic 9.1.2 *Your Quest* Complete all THINK questions **Mentos Experiment due in**
5	**Minerals: Properties of minerals** ☐ **Understand** that rocks are made of different minerals. ☐ **Know** the properties of minerals including: lustre, streak, hardness, magnetic, specific gravity, cleavage. ☐ Be able to **use** Mohs' Scale of Hardness. ☐ **Investigate** the properties of at least 5 minerals. ☐ Understand how to use a dichotomous key. ☐ ☺ **Use** a key to **identify** the following minerals: talc, magnetite, quartz, chalcopyrite, haematite, muscovite (mica), galena. **Websites to check** Introduction to minerals Video on the Physical properties of minerals	**Homework** Read topic 9.2 Complete Ex 9.2 Q 3-8 **Mentos Experiment** **Extension Draft due in**.
6	**The Rock Cycle and Sedimentary Rocks** ☐ **Know** the stages of the rock cycle. ☐ **Know** that weathered soil is deposited in layers by sedimentation. ☐ **Understand** that rocks formed from sediments are called sedimentary rocks. ☐ **Compare** the formation of the following: sandstone, mudstone, shale, siltstone, conglomerate, limestone and coal. ☐ ☺ **Use** a dichotomous key to **identify** the following rocks: coal, limestone, conglomerate, sandstone, siltstone, shale. **Websites to check** Video on the rock cycle Video on sedimentary rocks	**Homework** Read topic 9.4 Complete Ex 9.4 Q 4,7,8,10 **Mentos Experiment** **Extension Final Due**
7	**Igneous Rocks** ☐ **Investigate** the growth of crystals. ☐ **Know** that rocks formed from molten rock are called igneous rocks. ☐ **Understand** the difference between magma and lava. **Websites to check** Video on Igneous rocks PowerPoint by email on Rocks.	**Homework** Read topic 9.3, Complete Ex 9.3 Q 1-8
8	**Metamorphic Rocks** ☐ **Understand** that rocks that have been changed by heat and/or pressure are called metamorphic rocks. ☐ **Know** some examples of metamorphic rocks e.g. slate, gneiss, quartzite and marble. ☐ ☺ **Use** a dichotomous key to **identify** the following rocks: granite, slate, marble, basalt, gneiss. **Websites to check** Video on Metamorphic rocks Another video on Metamorphic rocks	**Homework** Read topic 9.5 Complete Ex 9.5 Q 2,3,4 ☺ 6,7,8

9	**Revision and examinations** ☐ Complete Ex 9.11 Q 2-17 ☺ Q26, 29 ☐ Formative exam at end of week	**Homework** Read Review 9.11 ☺ **Read 9.8** Prepare for your exam by continuing the classwork from this week at home. ***Formative Exam***
10	**Mining and Rehabilitation** ☐ **Conduct** an experiment on refining of copper from its ore, malachite. ☐ ☺ **Discuss** conflicts and ideas relating to the location, extraction, and rehabilitation of a mine site. ☐ Exam feedback **Websites to check** Video on Mining and rehabilitation	

9 Science Coursework Planner

Term 2: Chemistry and Earth Science

Trinity Bay Science

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Summative Assessment: 1 x 70min exam
Criterion Assessed: Understanding and Skills

WEEK	Elaborations of Content Descriptors Knowledge, concepts, skills and processes that students are expected to learn. Students will :	Guidance Assessment X3 Feedback X3 Weekly homework
1	**Understanding Elements** ☐ Recall the concept of **elements** ☐ Appreciate that all matter is made of atoms which are composed of **protons, neutrons and electrons** ☐ ☺ Evaluate the historical scientific development of the **concept of an atom**. **Websites to check** Periodic table Atomic model historical summary Video of the atomic model historical timeline	Coursework Planner handed out Bookwork expectations delivered **Homework** Read chapter 6 in textbook/Readcloud. Read the coursework planner Use your glossary to start a new word list of the bold content words on the coursework plan in weeks 1-5.
2	**Understanding Elements:- Inside the atom** ☐ Compare the mass and charge of protons, neutrons and electrons ☐ Construct a model of atoms for simple elements using simulation technology. **Websites to check** Simulation- Build an atom Video on atoms	**Homework:** Read 6.1 Answer "Your quest" Q 1,2,3,4.
3	**Examine atomic developments:- Chemical building blocks** ☐ Identify that **mass number** differs between **isotopes** of the same element yet atomic number remains the same ☐ ☺ Apply notation convention to isotopes **Websites to check** Video on atoms and isotopes Website on atoms and Isotopes Video on Isotopes Video on radioisotopes	**Homework:** Read 6.3 Ex 6.3 U+I Q 1,4,5,7. **Something extra for class or home.** ☺ Ex 6.3 Q 8-11 and 13
4	**Defining and using isotopes** ☐ Understand that natural radioactivity arises from the decay of nuclei in atoms ☐ Define a **radioisotope** ☐ Compare the three main types of radiation ☐ ☺ Describe in simple terms how **alpha and beta particles and gamma radiation** are released from unstable atoms **Websites to check** Video on radioactivity Simulation on Isotopes	**Homework:** Read 6.4 complete investigation Ex 6.2 Q 1,2,3,4. **Something extra for class or home.** Ex 6.2 Q 5,6,7,8. ☺ Ex 6.2 Q 9,10

5	**Using Radioactivity** □ Explain how **nuclear reactors** work □ ☺ Apply radioactive isotopes to medical and carbon dating processes. □ ☺ Analyse, graph and sumarise **radioactive decay** results as a skills focus. **Websites to check** Video on nuclear power Video on Nuclear power plants Simulation on carbon dating ☺ Extension Video Part 1 Part 2	Class quizzes/warm-ups with feedback **Homework:** Read 6.4.3 Answer U+I Ex 6.4 Q 1,2,3,4,6,7. **Something extra for class or home.** Ex 6.4 Q 9
6	**Examining our past** □ Explore the difference between **magma and lava** □ Compare the difference between **active, extinct, and dormant volcanos** □ Construct a labelled diagram of the **layers of the Earth** □ Use latitude and longitude to **plot volcanic activity**. □ ☺ Understand that chemical composition of magma will dictate the composition of extruded material. **Websites to check** Video on Krakatoa [Use your school email at https://online.clickview.com.au/ as your username and reset your password if required]	**Homework:** Read 8.1 and 8.2 Ex U+I 8.2 Q 1,2,4,5. **Something extra for class or home.** Start a new word list of the bold content words on the coursework plan in weeks 6 to 9.
7	**Investigating Evidence of a Theory** □ Recognise the major **tectonic plates** on a world map □ Examine models of sea-floor spreading and **subduction** zones □ Explain that we can relate the occurrence of earthquakes and volcanic activity to constructive and destructive plate boundaries □ Evaluate the role of heat energy and convection currents in the movement of tectonic plates □ ☺ Explain that we can relate the extreme age and stability of a large part of the Australian continent to its plate tectonic history □ Understand that the theory of plate tectonics explains global patterns of geological activity and continental movement □ ☺ Understand the evidence for **continental drift** **Websites to check** Video on the Earth Video on continental drift Video review on tectonic plates Simulation on tectonic plates Website reading with pictures on tectonic plate types	**Homework** Read 8.3 Answer U+I 8.3 Q 1,2,4,5,7,9.
8	**Examining our Volatile World** □ Explain the difference between **p, s and l waves** □ Communicate the difference between focus and epicentre □ Demonstrate the ability to plot the epicentre of an earthquake □ ☺ Apply the Modified Mercali scale to locate the epicentre of an earthquake **Websites to check** Video introduction to Earthquakes Video on seismic waves Website on where earthquakes are happening live	Formative assessment with feedback. **Homework:** Read 8.5 Answer U+I 8.5 Q 1,3,4,5,6,7,9. **Something extra for class or home.** Ex 8.5 Q 8
9	**Examining our Volatile World** ☐ Explain the conditions required to form a **tsunami** □ ☺ Evaluate how technological developments have enabled seismic prediction and warnings. **Websites to check** Video on Tsunamis Website on detection methods for tsunamis	**Homework:** Read 8.6 and 8.7 Complete U+I 8.7 affinity diagram. **Something extra for class or home.** Ex 8.6 Q 1,2,3,4,5,6,7,8,9 **Revision work** Looking back Chapter 6.7 review 1 Looking back Chapter 8.9 review 1

10	□ Revision Lesson □ Exam	Assessment - End of Term Exam Exam feedback.