

Christchurch Boys' High School

Academic Words List



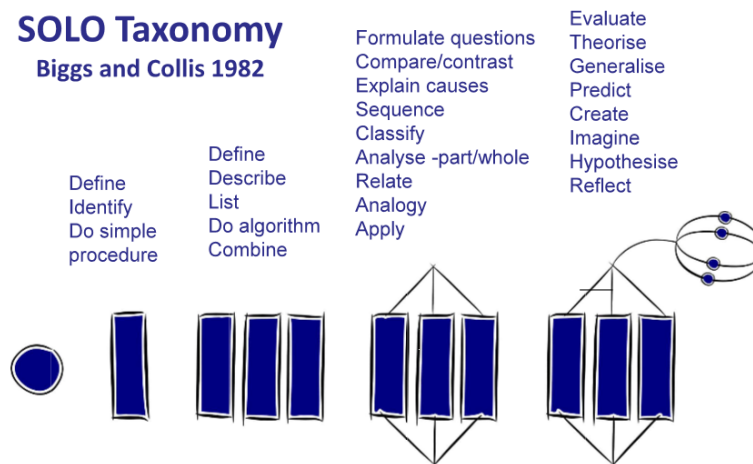
Purpose of this document:

The purpose of this document is to give the school community access to a list of the key academic words used across all the subject areas at CBHS. These words are arranged alphabetically and by year level. Each word is followed by a subject-specific definition and, in some cases, an example (in italics) of how that word might be used in that subject area or a further clarification. Many of these words build on each other over various levels or are used at successive levels, with development in their meaning and expectations.

Below is a brief list of key verbs used in the five SOLO Taxonomy levels. Many of these words, or words like them, appear in our school list.

SOLO words

SOLO Taxonomy Biggs and Collis 1982



Biggs, J.B., and Collis, K.F. (1982) Evaluating the Quality of Learning-the SOLO Taxonomy (1st ed) New York: Academic Press.

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Our key words:

	Used in:
Identify / Tautohu	<ul style="list-style-type: none"> <li style="width: 50%;">• Biology <li style="width: 50%;">• Technology <li style="width: 50%;">• English <li style="width: 50%;">• Visual Arts
Describe / Pūrongorongo	<ul style="list-style-type: none"> <li style="width: 50%;">• Biology <li style="width: 50%;">• History <li style="width: 50%;">• English <li style="width: 50%;">• Languages <li style="width: 50%;">• Geography <li style="width: 50%;">• Physics <li style="width: 50%;">• Health and PE <li style="width: 50%;">• Technology
Explain / Whakamārama	<ul style="list-style-type: none"> <li style="width: 50%;">• Biology <li style="width: 50%;">• Health and PE <li style="width: 50%;">• Chemistry <li style="width: 50%;">• Languages <li style="width: 50%;">• English <li style="width: 50%;">• Physics <li style="width: 50%;">• Geography <li style="width: 50%;">• Technology
Evaluate / Arotake	<ul style="list-style-type: none"> <li style="width: 50%;">• Biology <li style="width: 50%;">• History <li style="width: 50%;">• Chemistry <li style="width: 50%;">• Languages <li style="width: 50%;">• Geography <li style="width: 50%;">• Technology <li style="width: 50%;">• Health and PE

Biology - Mātauranga Koiora

Year 9 and 10	
Describe	Name the term and define the term
Explain	Give reasons why or how.
Hypothesise	Make an educated prediction based on scientific ideas
Label	Label the diagram using the word bank <i>Label the diagram of the heart using the terms from the word list.</i>
Observe	Use your senses to look, hear, touch, taste, smell (usually not touch, taste, smell unless instructed by your teacher!). <i>What do you observe when Magnesium is burned in the Bunsen flame?</i>
Predict	State what you think is going to happen
Record	Write down your observations. This may be in the form of a table. <i>Record the results of your experiment</i>
Write	Write down your observations. This may be in the form of a table. <i>Write the word equation for photosynthesis</i>
Year 11 – NCEA Level 1	
Classify	Put into groups <i>Classify the following diseases as bacteria, fungi or virus</i>
Compare	Give the similarities and some differences <i>Compare how bacteria and fungi cause disease.</i>
Compare and contrast	Give the similarities and differences <i>Compare and contrast how the life processes of bacteria can cause the infections.</i>
Contrast	Give differences <i>Contrast how bacteria and fungi replicate</i>
Describe	Name the term and define the term <i>Describe how bacteria feed.</i>
Evaluate	Give an informed opinion based on evidence
Explain	Define and give reasons <i>Explain how environmental factors affect bacterial growth</i>
Identify	Name the term <i>Identify the four bases in DNA.</i>
Justify	Define ideas, explain ideas, link ideas together
Write an equation	Give the word or chemical equation (may ask for chemical or word, balancing may access higher grades) <i>Write the word equation for photosynthesis</i>
Year 12 – NCEA Level 2	
Analyse	Look at the evidence and draw a conclusion <i>Analyse the graphs and draw conclusions.</i>
Evaluate - ideas	Give an informed opinion based on evidence
Evaluate - practical investigations	Comment on the reliability and validity of the method used. <i>Evaluate the reliability and validity of the method used.</i>
Hypothesise	Make an educated prediction based on scientific ideas <i>As the temperature increases the respiration rate will increase</i>
Year 13 – NCEA Level 3	
Analyse	Look at the evidence and draw a conclusion <i>Analyse the graphs and draw conclusions. OR Analyse the results.</i>
Evaluate - ideas	Give an informed opinion based on evidence
Evaluate - practical investigations	Look at the reliability and validity of the method used. <i>Evaluate the method used for both reliability and validity.</i>
Hypothesise	Make an educated prediction based on scientific ideas

Chemistry

Year 9 and 10	
Equation	Shows a change and arrow for forms. $A + B \rightarrow AB$ (not $A + B = AB$)
Fraction	Component from a separation (different to Math fractions). <i>Crude oil \rightarrow petrol, tar seal etc.</i>
Hardness	Measure of dissolved minerals in water. <i>e.g. creates boiler scale + soap scum.</i>
Products	Things made from chemical change. <i>CO₂ made from burning.</i>
Reactants	Things used for chemical change, i.e. to start with. <i>e.g. carbon for burning.</i>
Reaction	Process of change that occurs <i>Burning is a chemical reaction. Melting is not.</i>
Year 11 – NCEA Level 1	
Allotrope	Different forms of same element. <i>e.g. Rhombic and monoclinic sulfur</i>
Derive	Use a standard process to work an expected outcome. <i>Perform a titration to determine the unknown concentration of a solution of ethanoic acid.</i>
Neutral	Unchanged OR pH = 7. <i>An atom is neutral when the sum of the positive charges and negative charges = zero. A solution is neutral when the hydrogen and hydroxide ion concentrations are equal, and so that the pH = 7.</i>
Year 12 – NCEA Level 2	
Empirical	Simplest ratio of elements in a compound. <i>CH₃ (empirical) vs C₂H₆ (molecular)</i>
Explain	Describe in more detail - complete sentences required, simple language and diagram. <i>Explain the structure of a Magnesium atom - central nucleus containing protons and neutrons, surrounded by electrons arranged in shells like layers of an onion.</i>
Lattice	Arrangement of particles in an interlocked network. <i>Covalent lattice network of carbon to make diamond - extended 3D structure</i>
Molecular	Small individual entity made up of 2 or more atoms chemically joined in a fixed ratio.
Year 13 – NCEA Level 3	
Determine	Find out something new using multiple steps. <i>Determine the concentration of H₂SO₄</i>
Evaluate	Look through in detail, compare to another situation and make judgement. <i>Using the provided bond angles determine the bond angles with explanation for carbon tetrachloride.</i>
Justify	Explain, using an example, the decision you have made, with good reason. <i>Using the provided redox couple electromotive potentials decide if the reaction between potassium permanganate and ferrous sulfate will occur and link the species to the reaction that occurs.</i>

English - Reo Pākehā/Ingarihi

Year 9 and 10	
Define	A statement of the exact meaning of something, particularly specific words or terms.
Describe	Provide details – tell the who, what, when, where and how. Specific evidence from the text usually required.
Expand	Provide more details or depth than previously given (often used in feedback).
Explain	The why and/or the how. Specific evidence usually required.
Identify	Recognise specific characteristics or details.
List	Find numerous examples and list them.
Reason	Provide a logical argument for something.
Year 11 – NCEA Level 1	
Describe	Provide details - tell the who, what, when, where and how. <i>Describe a character who underwent change in the text (NCEA question)</i>
Develop and structure	Build on a single idea in a systematic and logical order. <i>Develop and structure ideas in creative writing (NCEA Achievement criteria)</i>
Explain	The why and/or the how. <i>Explain how this change was important to the text as a whole (NCEA question)</i>
Interpret	Read/read into information and show your personal understanding of it.
Show understanding	Make relevant points in an organised structure. <i>Show understanding of specified aspects of written texts (NCEA standard)</i>
Year 12 – NCEA Level 2	
Analyse	Tell me what the author did, how they did it and why they did it. <i>Analyse specified aspects of studied written texts (NCEA question)</i>
Controlled	Concise, planned, coherent, technically accurate and the deliberate use of language features <i>Produce a selection of crafted and controlled writing (NCEA standard)</i>
Convincingly	Clear, organised and relevant points used. <i>Produce a selection of crafted and controlled writing which develops, sustains and structures ideas convincingly (NCEA Merit criteria)</i>
Crafted	Editing, proofing, taking the time to improve each sentence and word choice <i>Produce a selection of crafted and controlled writing (NCEA standard)</i>
Form conclusions	Use information/facts to come up with new ideas and understanding. <i>Form developed conclusions from your investigation or research</i>
Perceptively	Show originality and insight in interpretation. <i>Analyse significant aspects of unfamiliar texts perceptively (NCEA Excellence criteria)</i>
Year 13 – NCEA Level 3	
Close analysis	Break something down into its parts and explain the relationship between the parts. 'Close' requires detailed evidence from the raw material.
Compare	Look for similarities (also implies evaluation or conclusion of preference).
Concise	Brief, short, terse - to the point.
Develop	Development of ideas and links between them.
Discuss - extent	Investigate or examine an argument, debate. Provide reasons for and against, but also examine the implications of the topic (evaluation/judgement); this is the 'extent' aspect. Reach an evaluative conclusion.
Insightful	To have a deep/clear understanding of a topic, idea or concept and its relevance beyond that context.
Integration	To combine two or more ideas and explain how they work together.
Perceptively	Show a level of sophistication, insight and/or originality.
Respond critically	Involves developing an argument with evidence. Need to build the focus and scope of your argument. Critically requires evaluation and judgements.

Geography - Mātai Mata Whenua

Year 10 and General	
Change	Change involves any alteration to the natural or cultural environment. Change can be spatial and/or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent, or cyclic, while others are unpredictable or erratic. Change can bring about further change.
Cultural	The human environment.
Describe	This means to identify and give an account of; to make reference to the qualities, characteristics or recognisable features. A simple explanation can also be included.
Environments	Environments can be natural and/or cultural. They have particular characteristics and features that can be the result of natural and/or cultural processes. The particular characteristics of an environment may be similar to and/or different from another.
Explain	This means to provide reasons for, to account for, to provide a clear answer, to clarify. Logical reasons are provided.
Interaction	Interaction involves elements of an environment affecting each other and being linked together. Interaction incorporates movement, flows, connections, links, and interrelationships. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.
Natural	The physical environment.
Patterns	Patterns can be spatial, such as the arrangement of features on the earth's surface, or temporal, such as how characteristics differ over time in recognisable ways.
Perspectives	The way people view and interpret environments. Perspectives and values may be influenced by culture, environment, social systems, technology, economic and political ideology. They may influence how people interact with environments and the decisions and responses that they make.
Processes	A sequence of actions, natural and/or cultural, that shape and change environments, places and societies. Some examples of geographic processes include erosion, migration, desertification, and globalisation.
Sustainability	Sustainability involves adopting ways of thinking and behaving that allow individuals, groups, and societies to meet their needs and aspirations without preventing future generations from meeting theirs. Sustainable interaction with the environment may be achieved by preventing, limiting, minimizing, or correcting environmental damage to water, air, and soil, as well as considering ecosystems and problems related to waste, noise, and visual pollution.
Aroha	love and empathy. It is an attitude and an important cultural value of Māori, derived from a particular Māori view of the natural world and the place of Māori within it. Aroha is an important concept that underpins a Māori environmental management system.
Kaitiakitanga	to "care for" the environment. It is the sustainable use, management and control of natural and physical resources that are carried out to the mutual benefit of people and resources.
Taonga	is a resource either physical or cultural that can be found in the environment (including features within the environment e.g. lakes, mountains, rivers, also including people, te reo, whakapapa, etc.).
Tino Rangatiratanga	- includes the rights, responsibilities and obligations involving the use, management and control of the land and other resources.
Whanaungatanga	Māori share a common whakapapa with other people/taonga and therefore a strong sense of responsibility and reciprocal obligations toward those people/taonga. This forms an important part of a holistic world-view. All taonga are interrelated, interconnected and Interdependent. The life force (mauri) of taonga must be protected. The sustainable management of taonga is therefore paramount to our survival.

Year 11 – NCEA Level 1

Apply and integrate	When applying a concept a student uses an appropriate idea; when integrating they will incorporate concepts and evidence into the answer to demonstrate comprehensive understanding.
Describe/explain in detail	This means the response has complexity showing greater understanding that differentiates it from an Achieved level answer. The response incorporates specific information, case study, facts, names or other explicit information which enhances the answer.
Spatial	How does a pattern form over space?
Temporal	How does a pattern form over time?
Year 12 – NCEA Level 2	
Fully describe/explain	This means the response is complete and demonstrates an understanding of all facets. It incorporates relevant geographic concept(s) and uses appropriate geographic terminology.
Showing insight/insightful	This involves showing a clear understanding. Insight can involve weighing-up and judging evidence, linking factors to clearly show causal relationships and reading into and beyond the subject matter/evidence. Consideration of perspectives can help students to demonstrate insight.
Spatial	How does a pattern/process form and operate over space?
Spatial dimension	This relates to the use of space and includes location, accessibility, direction, scale etc.
Temporal	How does a pattern/process form and operate over time?
Year 13 – NCEA Level 3	
Analyse	This involves the breaking down or deconstruction of data and examination of the separate parts. When analysing students can identify patterns, trends, relationships, and connections; and synthesise these understandings into explanations. Students should have access to a range of data including maps, graphs, diagrams, tables etc. from which to draw inferences.
Critically analyse	This extends an analysis to involve examination of the factors or circumstances that may have influenced them, identifying and examining any irregularities, examining any relationships that appear etc. A critical analysis will question and/or judge the evidence gained in the analysis.
Critically evaluate	This involves identifying and discussing strengths, weaknesses, opportunities and threats associated with the available options or decisions. Criteria could be established on which to make a final or future judgement.
Justify	Give reasons and evidence why one alternative is better than others.
Spatial	How does a pattern/process form/operate and change over space?
Spatial Interaction	Cause and effect of processes affecting other processes in and area/region.
Temporal	How does a pattern/process form/operate and change over time?

Health and Physical Education - Whakakori Tinana

Year 9 and 10	
Develop	Developing basic motor skills over a variety of different contexts to be ready for Year 11. <i>High levels of engagement and progressively building towards more complex skills.</i>
Evaluate	Analysing aspects of health. <i>Students use the dimensions of hauora to gain a greater understanding of their own lives.</i>
Name & List	Understand a variety of different terminology. <i>Widening understanding of the different aspects involved in sports such as biomechanics.</i>
Participate	Actively involved in a variety of different movement contexts, rated on a 1 - 5 scale. <i>Students display high levels of engagement and are able to describe the effort they are giving.</i>
Relate	Acquire and apply interpersonal skills. <i>Students can effectively use forms of communication in a variety of team environments.</i>
Year 11 – NCEA Level 1	
Demonstrate	Demonstrate the required action, three levels to gain, A, M and E
Describe	Describing an outcome or event that has impacted on the situation
Discuss	Identifying and thinking about key factors <i>Achievement level tasks coming up with ideas and issues within the context</i>
Evaluate	Evaluating an outcome or event that has impacted on the situation
Explain	Explaining an outcome or event that has impacted on the situation
Justify	Using examples or own experience to enhance an answer or outcome <i>Relating your assessments back to the initial task and give more depth to an answer</i>
List	Listing key terms to gain knowledge and think about the task, not assessed on its own
Name	Naming key terms to gain knowledge and think about the task, not assessed on its own
Participate	Participate in a practical task, three levels to gain A, M and E
Predict	Looking at an idea and the future outcome or influences (E level) <i>Predict how changes in something will then affect the future outcome</i>
Reflect	Looking back at outcomes or learnings that influenced the conclusion <i>Thinking back about what has been done and the effect it had on the situation or event</i>
Year 12 – NCEA Level 2	
2.2 Relate /Inter-relate	How one thing affects outcome, mentioning the cause and effect
2.3 Describe	Answering the "what"
2.6 Describe	Give details of your strengths and weaknesses when coaching
2.8. Demonstrate	Consistently = "self-direction" Consistently high = "helping others " Consistently outstanding = " understanding on wider context and exceptional behaviours"
Discuss	Your findings versus what are common perceptions
Effectively and Consistently Demonstrate	Regularly showing a high level of skill attainment
Evaluate	(the adaptations) use your past experiences and current knowledge to show the self-progress you made as coach during the course
Evaluate	Reflecting on the "what" and the "why" and providing evidence from your reflections
Explain	Explaining the cause and effect e.g. answering the "why"
Reference	Your findings related to outcomes
Reflect	(reflect on impact) provide more specific details regarding what you saw as a result of your planning and delivery process

Reflection	Own thoughts or feelings and findings
Year 13 – NCEA Level 3	
Achieved	List, describe, explain Minimum is to evaluate the data or concepts under study
Merit	Compare, contrast, evaluate Must contrast and compare data, or start to finish of an event and evaluate these changes
Excellence	Predict, I think, hypothesise, critique, test assumptions held Must show evidence of critical thinking about how future actions or events may be influenced by what has been found by predicting and hypothesising using data under study.

History - Hītori

Year 9 and 10	
Essay	A written, formal and logical explanation of what & why something happened. Structured with an introduction, paragraphs and conclusion.
Evidence	Information that can be used as proof.
Historian	Someone who studies people in the past to gain an understanding of why things happened.
Narrative	The story.
Topic sentence	The start of a paragraph that uses language of the question / introduces and says what paragraph is about.
Year 11 – NCEA Level 1	
Comprehensively	A marker of Excellence - includes evaluation and judgement.
Describe	Provide important details relating to an event
Perspective	A point of view.
Investigation	A systematic, purposeful process of collecting and evaluating evidence and making a conclusion.
Year 12 – NCEA Level 2	
Examine	Communicate key historical ideas through explanation of an event, supported by historical evidence.
Inquiry	Identify a topic, develop focusing questions, gather information, select and highlight key information, annotate and evaluate.
Reliability	Assessing the usefulness and historical accuracy of sources to make reasoned judgements.
Year 13 – NCEA Level 3	
Analyse	Use historical evidence to make sound judgements regarding an event(s) and make conclusions.
Evaluate	Consider a range of evidence relating to an event to prioritise and make conclusions.
Force	An idea, concept or condition that promotes change – e.g. social, political, cultural, environmental.
Perceptive	Being able to draw conclusions that go beyond the immediately obvious and demonstrate a high degree of engagement with the evidence.
Primary	Evidence derived from the time period of an event. Could be newspapers, photos, statistics etc.
Secondary	Evidence that documents an event at a later time than the event. Could be books, documentaries etc.
Significance	Assesses the importance of an event to peoples' lives at the time and after the event.

Languages - Ngā reo

Year 9 and 10	
Contrast	Outline differences between things.
Explain	Outline why something happens.
Personal	Individual, independent emotional connection or interpretation.
Year 11 – NCEA Level 1	
Beyond the immediate context	Language related to basic personal information and past, present, and /or future experiences
Convincing	A range of language used that is fit for the context. Successfully select the language to support the communication with minor errors. Clear, organised and relevant points used.
Culturally appropriate	Language and cultural responses in formal situations and rituals
Demonstrate	Show by what you write/say that you understand. <i>Demonstrate how Chihiro realises she is having a dream.</i>
Develop and structure	Build on a single idea in a systematic and logical order.
Different situations	A selection of transactional, social, conversational, formal, cultural, and routine contexts
Effective	Successfully select a range of language that is consistently fit for the context. Skilfully select the language to support communication with almost errors free
Hinder by inconsistencies	Errors in the use of language including pronunciation, intonation, audibility
Interact	Spoken and gestural exchanges
Personal response	Express personal information, ideas, and opinions that relate to student's life
Significantly hindered	Meaning cannot be understood or misunderstood
Year 12 – NCEA Level 2	
Advise	Use given information to offer suggestions. <i>Advise a visitor to Japan about places to visit.</i>
Analyse	Tell me what the author did, how they did it and why they did it. <i>Analyse specified aspects of texts (NCEA question)</i>
Clarify	Give a clear outline/state in simpler terms. <i>Clarify the options facing Sylvie as she heads to Paris.</i>
Summarise	Compare concepts, consider elements of contrast. <i>Summarise the features of the house Kazuko wants.</i>
Year 13 – NCEA Level 3	
Infer	Consider given information and speculate (using textual evidence) about consequences. <i>If an earthquake struck, what would Mr. Honda be likely to do?</i>
Interpret	Read/read into information and show your personal understanding of it.
Justify	Give reasons for.
Perceptively	Show originality and insight in interpretation.

Mathematics

'Number' words		
Sum	<i>Add up</i>	The sum of 11, 3 and 8 is $11 + 3 + 8 = 22$
Difference	<i>Subtract numbers</i>	The difference of 17 and 9 is $17 - 9 = 8$
Product	<i>Multiply numbers</i>	Find the product of 7 and 5. Do 7×5
Quotient	The answer from a <i>division</i>	4 is the quotient of 20 and 5. $20 \div 5 = 4$
Halve	<i>Divide a number by 2</i>	Halve 23. The answer is 11.5
Square	Multiply a number by itself	7 squared is $7 \times 7 = 49$
Cube	A number multiplied by itself 3 times	4 cubed is $4 \times 4 \times 4 = 64$
Multiples	The ' <i>times table</i> ' of a number	The multiples of 6 are: 6, 12, 18, 24, . . .
Factors	Numbers that <i>divide</i> into another <i>exactly</i>	The factors of 20 are: 1, 2, 4, 5, 10, 20
Evaluate	Calculate the answer	Evaluate $2 + 5 \times 8 = 42$
'Algebra' words		
Expression	A <i>mathematical 'statement'</i> involving letters and numbers	$5x^2 + 7x + 3$
Term	<i>One part of an expression.</i> Terms are separated by '+' or '-' signs	$5x^2$, $7x$ and 3 are each terms of $5x^2 + 7x + 3$
Simplify	Reduce the number of terms by <i>combining several terms together</i>	$6a + 7 + 2a - 5$ simplifies to $8a + 2$
Formula	A <i>mathematical rule</i> for calculating the value of a quantity	$A = \frac{1}{2}bh$ is the formula for a triangle's area. b represents the base length and h the height
Substitute	<i>Insert numbers into a formula</i> and calculate (evaluate) the answer	Find Area of a triangle if $b = 12\text{cm}$ and $h = 3\text{cm}$. $A = \frac{1}{2} \times 12 \times 3 = 18\text{cm}^2$.
Equation	An expression containing an '=' sign	$5x^2 + 7x + 3 = 4$
Inequation	An expression containing $<$, $>$, \leq or \geq	$7n - 8 > 14$
Variable	A <i>letter used to represent a number</i> in an equation, inequation or formula.	In the formula $A = \frac{1}{2}bh$, b and h are variables
Solve	<i>Work out the value of a variable</i> in an equation or inequation	Solve $8a + 3 = 35$
Expand	<i>Remove brackets</i> in an expression by multiplying what's in brackets by the number in front of the brackets	Expand $4(2x - 5)$ $= 8x - 20$
Factorise	<i>Rewrite an expression with brackets</i> (The opposite of expanding)	Factorise $8x - 20$ $= 4(2x - 5)$
Index Indices	<i>Another name for an exponent.</i> Indices is the plural of index	In the expression $3x^6$ 6 is the index
'Symbols'		
$<$	Less than	$5 < 8$ 5 is less than 8
$>$	Greater than	$4 > -3$
\leq	Less than or equal to	$x \leq 8$ x is less than or equal to 8
\geq	Greater than or equal to	$n \geq 5$ n is greater than or equal to 5
\pm	Plus or minus	$x = \pm 3$
π	The symbol for the number 'pi'	$\pi = 3.14159265359 \dots$
\Rightarrow	This implies	$x = 2 \Rightarrow 3x = 6$
#	Number	Do question # 2
\therefore	Therefore	$3x = 6 \therefore x = 2$
\forall	For all	$x^2 + 1 > 0 \quad \forall x$
∞	Infinity	
\neq	Not equal to	$x \neq 7$
\approx	Approximately equal to	$n \approx 7.34$ (2 d.p.)
\propto	Is proportional to	$A \propto r^2$
\because	Because	$x^2 - 4 > 0 \quad \because x > 2$

Physics - Mātai Ahupūngao

Year 9 and 10	
Calculate	<p>Show an equation --> substitute correctly --> solve --> give units Use the equation $v = \Delta d / \Delta t$ to calculate the speed of a runner who travels 100m in 12.3 seconds.</p> $v = \frac{\Delta d}{\Delta t} = \frac{100}{12.3} = 8.1 \text{ms}^{-1}$
Explain	<p>Give a reason for ... Link the effect with its cause Explain why the Sun is a luminous object and the Moon is not. Luminous objects make their own light. The Sun makes its own light, so it is luminous. The moon reflects the Sun's light, so it is not luminous.</p>
State/Describe/Name	<p>Identify the object, quantity, or event Name the main type of energy that a moving car has. Kinetic energy</p>
Year 11 – NCEA Level 1	
Calculate	<p>Select the right equation --> show the equation --> rearrange equation correctly --> substitute values correctly --> solve --> give units Calculate the distance travelled by a car a runner who travels at 9.3ms for 13.5 seconds.</p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v \Delta t = 9.3 \times 13.5 = 125.55 \text{m}$
Discuss	<p>Use an explanation to make a prediction <i>Discuss the reasons why each of the two people will sink different distances into the snow? [calculate pressures] Since the pressure on the snow from Tim's feet is higher than the pressure on the snow from Rima's feet, Tim will sink further into the snow.</i></p>
Explain	<p>Write a sentence or two linking facts together with the effect/observation, a diagram might help Explain how the graph shows that there are no unbalanced forces acting on the car. The graph shows that the car is moving at a constant speed. Newton's 1st law tell us that an object travelling at a constant speed has no unbalanced forces acting on it.</p>
Show	<p>Use the given information to calculate a given answer (credit for working only) Show that the distance travelled by a car a runner who travels at 9.3ms for 13.5 seconds is 123.6m</p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v \Delta t = 9.3 \times 13.5 = 125.55 \text{m}$
State/Describe	<p>Identify the object, quantity, or event Name the main type of energy that a moving car has. Kinetic energy</p>
Year 12 – NCEA Level 2	
Calculate	<p>State assumptions --> Select the right equation --> show the equation --> rearrange equation correctly --> substitute values correctly --> solve --> round answer appropriately --> give units Show that the distance travelled by a car a runner who travels at 9.3ms for 13.5 seconds is 123.6m. <i>Since the forces acting on the car are all balanced, the acceleration of the car will be zero.</i></p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v \Delta t = 9.3 \times 13.5 = 125.55 \text{m}$
Discuss	<p>Use an explanation to make a prediction or conclusion Rima now moves slightly closer to the pivot of the seesaw. Discuss what will happen to the motion of the seesaw. The seesaw will tilt, moving Rima's end upwards. Her moving towards the pivot will reduce the downwards torque on Rima's side, while keeping the torque on the other side constant. The system will no longer be in equilibrium.</p>
Explain	<p>Write a paragraph linking facts together with the effect/observation, a diagram or calculation might help</p>

	<p>Tim and Rima are sitting on a seesaw, they are stationary and both of them are in the air. Explain who we know that the seesaw is in equilibrium. Since the seesaw is stationary, we know that there are no unbalanced forces acting. Since the seesaw is not rotating, we know that there are no unbalanced torques acting. Since the two conditions for equilibrium are satisfied, the seesaw must be in equilibrium.</p>
Show	<p>Use the given information to calculate a given answer (credit for working only)</p> <p>Show that the distance travelled by a runner who travels at 9.3ms for 13.5 seconds is 123.6m</p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v\Delta t$ $= 9.3 \times 13.5$ $= 125.55m$
State/Describe	<p>Identify the object, quantity, or event</p> <p>State the two conditions necessary for an object to be in equilibrium. The sum of the forces is zero, and the sum of the torques is zero.</p>
Year 13 – NCEA Level 3	
Calculate	<p>State assumptions -->Select the right equation --> show the equation --> rearrange equation correctly -->substitute values correctly --> solve --> round answer appropriately -->perhaps process uncertainties -->give units</p> <p>Calculate the distance travelled by a car a runner who travels at 9.3ms for 13.5 seconds. Since the forces acting on the car are all balanced, the acceleration of the car will be zero.</p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v\Delta t$ $= 9.3 \times 13.5$ $= 125.55m$
Discuss	<p>Use an explanation to make a prediction, conclusion, or analogy to another topic</p> <p>Hubble's Law says that a the further a galaxy is away from Earth the faster it will be moving. Discuss how the Doppler Effect might be used to observe Hubble's Law. If a galaxy is moving away from Earth, light from that galaxy will be "red-shifted" (ie, have a longer apparent wavelength). If Hubble's Law is true, then the light from more distant galaxies will be more red-shifted than that light from nearer galaxies. This is because the amount of red-shift is proportional to the speed of the source (the moving galaxy).</p>
Explain	<p>Write a paragraph linking facts together with the effect/observation, a diagram or calculation might help</p> <p>Explain whether the pitch will rise or drop as it passes the observer. The pitch will drop. Since the car is producing a constant pitch, but the source is now moving away from the observer, the same number of waves will exist in a larger space. This creates an apparent increase in wavelength and thus a lower pitch.</p>
Show	<p>Use the given information to calculate a given answer (credit for working only)</p> <p>Show that the distance travelled by a car a runner who travels at 9.3ms for 13.5 seconds is 123.6m.</p> <p>Since the forces acting on the car are all balanced, the acceleration of the car will be zero.</p> $v = \frac{\Delta d}{\Delta t} \text{ so } \Delta d = v\Delta t$ $= 9.3 \times 13.5$ $= 125.55m$
State/Describe	<p>Identify the object, quantity, or event</p> <p>State the name of the phenomenon which causes the sound of a passing car to change pitch as it passes an observer. The Doppler Effect</p>

Technology - Hangarau

Analyse	To separate the topic into its main parts and to discuss the significance of the parts and their inter-relationships. Identify causes. Find evidence to support claims, decisions or generalisations.
Compare	To examine qualities, or characteristics, in order to discover <u>similarities</u> . You should emphasise the similarities, although differences may be mentioned.
Contrast	When you are asked to contrast: dissimilarities, <u>differences</u> , or unlikeness of associated things should be stressed. When compare and contrast are used together you should discuss similarities <u>and</u> differences. i.e. Positives (what works) Negatives (what doesn't) Opportunities (improvements/adaptations)
Describe	This asks you to <u>explain how</u> something works and/or contributes to an overall meaning and/or its impact on decisions. You should recount, characterise, sketch or <u>relate</u> in a narrative (connected) form.
Discuss	To examine opportunities for improvement and/or present considerations for or against a particular decision.
Establish	Convincingly show, prove or demonstrate. Evidence, proof, quotes that support your ideas.
Evaluate	Defend opinions, make judgements about the potential to be fit for purpose or validity of information or decisions made - against the requirements of the brief.
Explain	In explaining an answer it is best to state the "how" and "why", comment on differences in opinion, and where possible, state causes and reasons. Use sketches, photos or annotations to support your claims.
Explore	<u>Weighing up a range of alternatives</u> . This calls for a complete and detailed answer supported with sketches and/or photos. Looking for ways to adapt or improve.
How	What elements of design, technique or process has been used (<u>Identify</u>)? And In what way has this technique or process been done (<u>Explain</u>)? How it fits or meets requirements or expectations. Because...
Identify	Find, list and/or name (Achieved level question). What you see or know, NOT what you think or feel
Illustrate	<u>Explain</u> or clarify your answer by presenting a figure, picture, diagram or concrete example.
Implement /Apply	Applying acquired knowledge, facts, techniques and rules. Develop, build/ make, plan, select, solve, utilize, model
Justify	To prove or show grounds for your decisions. Evidence should be presented and you should be convincing or persuasive. Use quotations/specific details/ <u>analysis</u> from the research, surveys or consultations you have undertaken which are relevant.
Mock up	A mock up is a physical representation of an idea (part of an intended solution) that is used to test/predict its feasibility.
Model	A model is a physical representation of a technological solution (sometimes scaled) that enables a solution's feasibility to be tested/predicted.
Outline	An outlined answer is a description. You should give main points and essential supplementary materials, omitting minor details, and present the information in systematic arrangement or classification. It should be well organised.
Prototype	Prototyping is the modelling of a realised but yet-to-be-implemented technological outcome. The purpose of prototyping is to evaluate the fitness for purpose of a technological outcome against the brief and is undertaken to establish (or not) a defensible case for its implementation, refinement or further development.
Relate	In a question which asks you to show the relationship or to relate, your answer should describe connections and associations.
Review	A review asks for a critical examination. You should analyse and comment briefly upon the major points of the problem in an organised sequence.
Specify	At key stages in the development (i.e. writing a brief, decision points, evaluations, presenting to stakeholders) you are asked to specify, give, state or present - you are called upon to express the main points in brief, clear, narrative form. (things you can prove or measure- decisions you can track or justify from research, consultations etc)

Stakeholder	<p>A person or groups of people (families, whānau, communities, iwi, organisations, businesses) with a vested interest in a technological outcome, and/or its development.</p> <ul style="list-style-type: none"> • Key stakeholders are those people that are directly influential or will be directly impacted on by the technological practice itself and/or its resulting outcomes (including the technological outcome and any other by-products). • Wider (community) stakeholders are those people that are less directly influential for or impacted on by the practice or outcome. They can, nonetheless, be identified as having some level of influence, often through others, and/or they may be affected by the project or its outcome in the future.
Summarise	Give in condensed form the <u>main points or facts</u> . All details, illustrations and elaboration are to be omitted.
Survey	Use of open questions that will begin with words like 'how', 'why' and 'explain' and are intended to be more than yes/no questions of factual knowledge. Seeking ANY/ALL useful or relevant information – before prioritising it or drawing conclusions from it.
Synthesize	<u>Informed decision</u> : Combining elements or information together, proposing alternative solutions.
Why	The reason behind. For what effect/purpose/reason. Causes. Why something is true. Why it works.

Visual Arts - Mahi Toi

Year 9 and 10	
Drawing	Drawing refers to the use of media, techniques and processes to arrange elements and principles to develop artwork. <i>Complete an observational drawing in charcoal.</i>
Drawing (conceptual)	About exploring ideas - can involve analysis. <i>Draw on ideas in current practise relating to portrait composition.</i>
Identify	Looking to be able to describe in words and images. <i>Looking at this painting, can you identify the subject matter.</i>
Process	How materials and techniques are applied (activity). <i>The process that we are using is...</i>
Working in	Identifying aspects for further development in an art work. <i>You have done what I've asked but you need to work in to the darker tones in the drawing to improve it.</i>
Year 11 – NCEA Level 1	
Conventions	Refers to the technical, compositional and conceptual aspects of an art work. <i>Use the compositional conventions of linear, perspective and the grid in your painting.</i>
Established practice	Refers to works by artists that are recognised as belonging to a particular style, genre, style convention or way of working. <i>Develop 3 compositions based on stylistic approaches used by Russian constructivists (established practice).</i>
Year 12 – NCEA Level 2	
Subject	Subject is a thing. <i>The subject in this unit of work is the landscape.</i>
Systematic	Involves critical analysis, evaluation and revisiting of concepts, subject matter, problems or situations from the student's previous work in order to re-form and extend ideas into new work informed by established practice. <i>You can see in this student's folio boards how they have developed sequences of work that link and extend visual ideas in a systematic way.</i>
Theme	Is an idea (not a thing). <i>Explore the theme of anger in your portrait drawing.</i>
Year 13 – NCEA Level 3	
Extend	Critically analysing, evaluating and further developing concepts, subject matter, problems or situations in work informed by established practise. <i>Expand your applications of perspective by applying it in a set of drawings to convey the concept of deconstruction.</i>
Regeneration	Take an idea - existing or early - and work it into a new idea. <i>The student has regenerated the initial studies of trees into a sense of..</i>
Synthesis	All elements, conventions, processes work effectively together. <i>This painting is effective because the student has synthesized colour, paint application and composition considerations to convincingly express a stormy sea scape.</i>

APPENDIX – WRITING FRAMES:

THESIS STATEMENT

- The generalisation or conclusion framed in one statement that guides the essay.
- A thesis statement should appear in the introduction.
- In a literature essay it is the generalised answer to the question. For example using The Day of the Triffids, a thesis statement to the question “Why is the setting important?” might be: ‘The setting is important because it challenges man’s ability to adapt and enables us to explore how human beings react when their environment rapidly changes’.
- In a research assignment it is the generalised conclusion the student has reached and is about to report on.
- In a persuasive transactional text it is the generalised statement around which the student builds their argument.

PARAGRAPH STRUCTURE – PEER

<p>P POINT</p>	<p>What are you writing about?</p> <ul style="list-style-type: none"> • This sentence introduces the main idea, topic or point of the paragraph. • It should link to and/or develop the thesis of the essay. • It may link to the previous paragraph. • The opening sentence should: <ol style="list-style-type: none"> 1. integrate the key words of the topic 2. provide some link to the paragraph before 3. clearly indicate what the paragraph will be about.
<p>E EXPLANATION</p>	<p>What do you mean?</p> <ul style="list-style-type: none"> • The next sentence will explain what you meant by your first sentence with more detail. • It may include a judgement or clarify the opinion or direction your argument is going to take. • It may also use key words from the essay topic or thesis. • It should include details that provide a lead into the evidence you are about to offer. This might include: <ol style="list-style-type: none"> 1. details of a science experiment 2. historical details or background 3. plot details.
<p>E EVIDENCE</p>	<p>What makes you say that?</p> <ul style="list-style-type: none"> • The next sentence will give evidence, proof or examples to support the ideas you have explained. • Evidence might include: <ol style="list-style-type: none"> 1. statistics, survey results, facts from newspapers or reference sources 2. anecdotes from your own experiences or from the media 3. a quotation from an expert or someone knowledgeable or famous 4. a quotation from the text you have been studying.
<p>R RELEVANCE</p>	<p>So why is all that important?</p> <ul style="list-style-type: none"> • It will probably link back to the first sentence and the thesis of the essay. • This sentence may also serve to analyse and explain the relevance of the evidence you gave.