BUNDAMBA STATE SECONDARY COLLEGE

PRIDE » RESPECT » RESPONSIBILITY » EMPOWERMENT

Pedagogical Approach

Queensland Government

Bundamba State Secondary College

Pedagogical Approach

Wellbeing

- Positive Behaviours for Learning
- PERMAH
- Positive Relationships

Engagement

- Essential Skills for Classroom Management
- STARS Routine
- Learning Modes

Learning

- Gradual Release of Responsibility
- Learning Goals and Success Criteria
- Differentiation and Inclusion
- TTR, TTW and Vocabulary Instruction
- Metacognition
- Questioning and Feedback

Rationale

The Bundamba State Secondary College Pedagogical Approach is an evolving framework that is negotiated and developed by the school community and responds to the changing needs of our clients and developing and supporting the contemporary skill base of its staff. The Pedagogical Approach utilises high quality, evidence-based teaching practices focussed on the success for every student.

Bundamba SSC's Pedagogical Approach has been developed through intentional collaboration, with a focus on alignment and precision of pedagogical practices schoolwide. Three core pedagogical practices have been identified, each containing specific teaching strategies adopted by staff.

The three pedagogical practices respond to our self-identified need to focus our capacity on catering for students with varying capacities in the classroom, the need for a consistent curriculum delivery approach and lastly the need to develop and nurture independent and creative thinking.

The Bundamba State Secondary College Pedagogical Approach is founded on reflective practice and at its core invests in the capacity of its workforce for the best possible outcomes for students. Teachers individually and collectively have a responsibility to be an active learner, continually expanding their repertoire of skills and responding to a changing learning environment.

Principles of Pedagogy

The principles of pedagogy refer to the lens through which teachers make professional, evidence-based decisions to differentiate teaching and learning, and ensure all students experience success and improved student learning and achievement.

There are three broad **principles** underpinning these decisions about effective pedagogical practices:

1. Pedagogy reflects the disciplinary and inter-disciplinary nature of the **curriculum** content.
2. Pedagogy recognises how learning occurs as a process based on evidence and the nature of **learning**.
3. Pedagogy is appropriate to the nature of the **learner** and the context in which they are learning.

A whole school approach to pedagogy is:

- an **alignment** of processes adopted across the school to support every teacher making informed pedagogical decisions.
- bringing **precision** and quality to planning and teacher practice so that they can differentiate teaching and learning.
- promoting **intentional collaboration** and **professional autonomy** to determine the pedagogies most appropriate for the school context, the curriculum, the learning, and the learner.

Theoretical Foundation of the Pedagogical Approach

"*At the heart of the educational process lies the child*." (Plowden Report, CACE 1967)

The Bundamba SSC Pedagogical Approach is based on a myriad of research in the fields of educational psychology, cognitive architecture and neuroscience. The conscious decision to base our Pedagogical approach in neuroscience instead of current Learning Frameworks (ASOT, HITS etc), places the student at the centre of our pedagogical practices, creating a wholistic approach to the development of the student.

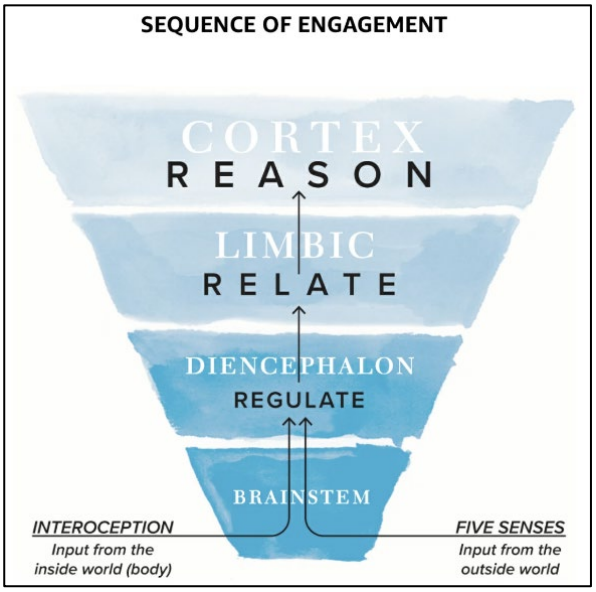
Neurosequential Model in Education – Dr. Bruce Perry (2008)

The Neurosequential Model in Education is founded from Dr Bruce Perry's research in the field of Neurosequencing. This model is a neurodevelopmentally-informed approach to explain how the brain works in an educational setting (cognitive development and functioning), and applying this to the teaching and learning processes. This model shifts the focus of pedagogy to strategies that support the cognitive development of students in the classroom, starting with strategies that support the Brainstem and regulation, the Limbic System and Relation, and finally reach the Cerebral Cortex and Reasoning.

The three Rs, or Sequence of Engagement

The three R's are at the core of the Neurosequential Model, outlining the sequence of engagement in the brain. For students to engage, they must first have some level of regulation, which occurs in the Brainstem and Diencephalon. Students are not able to engage with the higher levels (relate and reason) if they are not regulated. Once regulation is achieved, the brain is able to relate, in other words, relate to their peers, the world and form links with prior knowledge. If they can achieve this level, they can move up to the cortex, or reasoning level of the brain. This level is where "learning" (knowledge acquisition and cognition) occurs. For students to reach and engage in this level, they must first achieve the other two levels.

By using the lens of neurosequencing, the goal of pedagogy is to "get to the cortex", or create an environment in the classroom to encourage and enable regulation and relation in order to reach the level of the brain where reason and learning occurs.



The New Taxonomy of Educational Outcomes – Marzano and Kendall (2007)

The New Taxonomy for Education Outcomes is another approach to education that focuses on the sequence of engagement, of flow of processing that occurs in the brain. It builds on previous education research by Bloom (1956) and Anderson & Krathwohl (2001), while also incorporating current research in the fields of cognitive psychology and neuroscience.

"The hierarchical structure of the New Taxonomy is based on flow of processing. To review briefly, the self-system is the first line of processing. It determines the extent to which a student will be motivated to learn a given knowledge component. Given that the self-system has determined that the knowledge is important enough to learn, the next system to be engaged is the metacognitive system. Its task is to establish clear learning goals relative to the knowledge, then plan for and carry out those goals in as precise a manner as possible. Under the direction of the metacognitive system, the elements of the cognitive system are then employed. As we have seen, the cognitive system is responsible for processes as simple as retrieval and as complex as using the knowledge in a new context.

The three systems within the New Taxonomy are also hierarchical relative to the level of consciousness required to control their execution. Whereas cognitive processes require a certain degree of awareness and conscious thought to be executed in a controlled fashion, the metacognitive processes probably require more. Learning goals cannot be set nor can accuracy be monitored, for example, without a fair degree of mental energy. Last, examining self-system processes, such as importance and emotional response, probably represents a level of introspection and conscious thought not normally engaged in." (Marzano & Kendall, 2007)

Enhancing metacognitive and self-system thinking is central to developing self-regulation, which should be a fundamental goal of education. Bandura (1997) states: "a fundamental goal of education is to equip students with self-regulatory capabilities that enable them to educate themselves. Self-directedness not only contributes to success in formal instruction, but also promotes lifelong learning."

Other Theoretical Foundations

It is important to note other research and theories that have led to the development of the Bundamba SSC Pedagogical Approach. These are listed below:

- Triune Brain Model (1700s)
- Trilogy of the Mind (1980)
- A Model for Learning (Hattie, 2016)
- A Pedagogical Schema (Dr. Ellerton, 2012)
- Educational Psychology - Cognitive Development (Perception, Attention and Memory)

Pedagogical Practice #1: Wellbeing

Teaching Practice #1 – Positive Behaviours for Learning (PBL)

Positive Behaviour for Learning (PBL) is a whole-school framework that promotes positive behaviour across a school and helps schools develop safe and supportive learning environments.

Schools which implement the PBL framework make sure all students are explicitly taught the expected behaviours and establish clear and consistent boundaries. Staff take a proactive, preventative approach to ensure all students receive the appropriate level of support to help them to be successful at school. Student outcomes are monitored so identified students can receive additional support when needed, and a minority of students can access intensive support to enable them to engage successfully at school.

The PBL framework supports schools to become trauma-informed by increasing awareness of the effects of trauma on students' learning, wellbeing and behaviour, including attendance, engagement, relationships with others, academic achievement and behaviour. This awareness includes being mindful of avoiding re-traumatisation and looking beyond the immediate or 'surface' behaviours.

Schools using a trauma-informed approach provide universal support to all students and are sensitive to individual needs, addressing student needs holistically and working in partnership with caregivers and agencies to provide evidence-based interventions for students who are experiencing difficulties associated with complex trauma.

PBL helps schools to develop safe, positive, consistent and predictable environments, which are foundational to a trauma-informed approach. Challenges in relation to behaviour, mental health, academic success and social issues are best addressed using an integrated approach focused on the whole child.

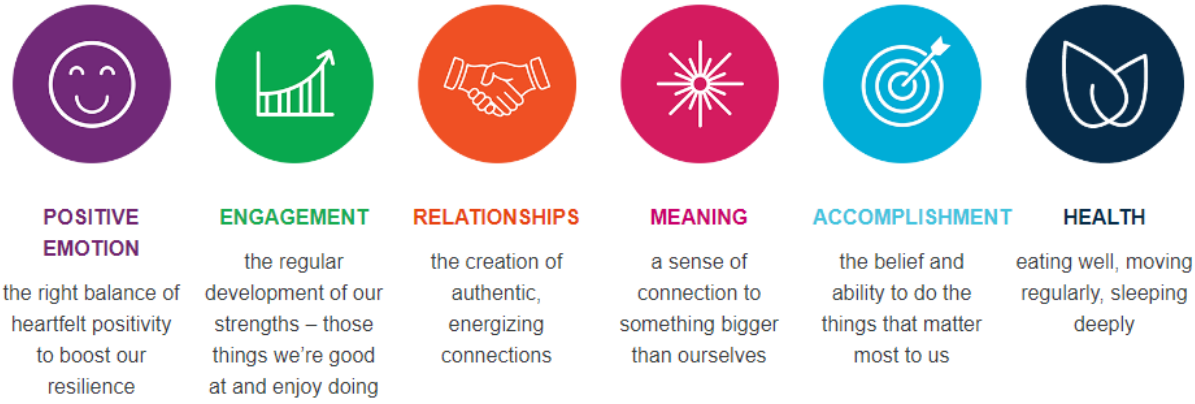
PBL provides a framework for schools to nurture students by providing them with meaningful opportunities for improving social and emotional skills, such as recognising and managing emotions, developing caring and concern for others, making responsible decisions, establishing positive relationships and handling challenging situations in a constructive way.

In PBL schools, principals, school leaders and staff members work together to establish and maintain a positive school climate. All adults communicate, teach, and model the positive behaviours they expect students to exhibit in the classroom and school throughout the day. By setting expectations, teaching students to meet those expectations and regularly reinforcing appropriate behaviours, schools see fewer incidents of inappropriate behaviour and more time spent on teaching and learning.

PBL uses restorative practices such as correcting behaviour calmly and in a manner that demonstrates that the student is safe and supported at school, viewing inappropriate behaviour as an instructional opportunity and using consequences that promote student self-reflection.

Teaching Practice #2 – PERMAH

The PERMAH Framework provides evidence-based, actionable ways to build our wellbeing and cultivate positive behaviours. At Bundamba SSC, PERMAH is interwoven within the Responsible Behaviour Plan and our approach to classroom management, case management and our support services. Shifting the focus to 'positive interventions' encourages our students to become informed, confident and active participants in the shaping of their own wellbeing.



Teaching Practice #3 – Positive Relationships

Positive relationships build motivation

Positive relationships are built on positive interactions. Each of these interactions has a powerful effect on the brain. Praising students or providing positive feedback to students causes their brain to release dopamine. This makes the student feel motivated to try again and work harder. This creates a positive cycle of motivation.

Positive Relationships create safe spaces for learning

Social activities (talking, laughing etc.) cause the body to release oxytocin. This helps students and teachers to bond and develop "psychological safety" in the classroom. When students feel psychologically safe, they are more likely to engage with the learning.

Positive relationships build new pathways for learning

Relating class content to student's prior knowledge and experiences will help them learn new information by activating already existing neural pathways in the brain. This enables the brain to make far more neural connections between knowledge to strengthen memory and understanding of concepts.

Positive relationships improve student behaviour

Students mirror your behaviours, words and actions. Teachers must actively demonstrate correct interactions, behaviours, words and actions in the classroom to set the expectations and norms for the class.

Pedagogical Practice #2: Engagement

Teaching Practice #1 – Essential Skills for Classroom Management (ESCMs)

Essential Skills in classroom management are not a substitute for well-planned, innovative and engaging curriculum. Fry and Long explain that, 'the mere use of exciting classroom materials and activities is not the answer to behaviour problems in classrooms' (cited in MACER 2005, p 14). 'If teachers cannot obtain student cooperation to proceed with instruction, then it is most unlikely that teaching of any level of effectiveness will ensue' (MACER 2005, p 14).

Behaviour management fits within a broad educational context. To specifically address student learning needs, teachers must understand behavioural development as well as the range of cognitive and physical differences that influence student learning styles and abilities. When students are provided with relevant curriculum and tasks that allow them to succeed, the need for management conversations in classrooms is reduced.

The 10 Essential Skills for Classroom Management

Essential Skill	Description
1. Establishing expectations	Making rules
2. Giving instructions	Telling students what to do
3. Waiting and scanning	Stopping to assess what is happening
4. Cueing with parallel acknowledgment	Praising a particular student to prompt others
5. Body language encouraging	Smiling, nodding, gesturing and moving near
6. Descriptive encouraging	Praise describing behaviour
7. Selective attending	Not obviously reacting to certain behaviours
8. Redirecting to the learning	Prompting on-task behaviour
9. Giving a choice	Describing the student's options and likely consequences of their behaviour
10. Following through	Doing what you said you would

Teachers need to establish order in their class, and then respond flexibly to student management issues. Once students have a positive concept of themselves as learners and have developed greater self-control, the Essential Skills pertaining to the 'language of correction' are likely to be less frequently required.

The core elements that allow for successful learning are: teachers setting clear expectations; acknowledging appropriate behaviour; and the timely correction of inappropriate behaviour (Richmond c. 2007). The 10 Essential Skills provide teachers with a framework for developing these core elements of effective teaching.

The Balance Model

The Balance Model is made up of three sets of information (Richmond 2002):

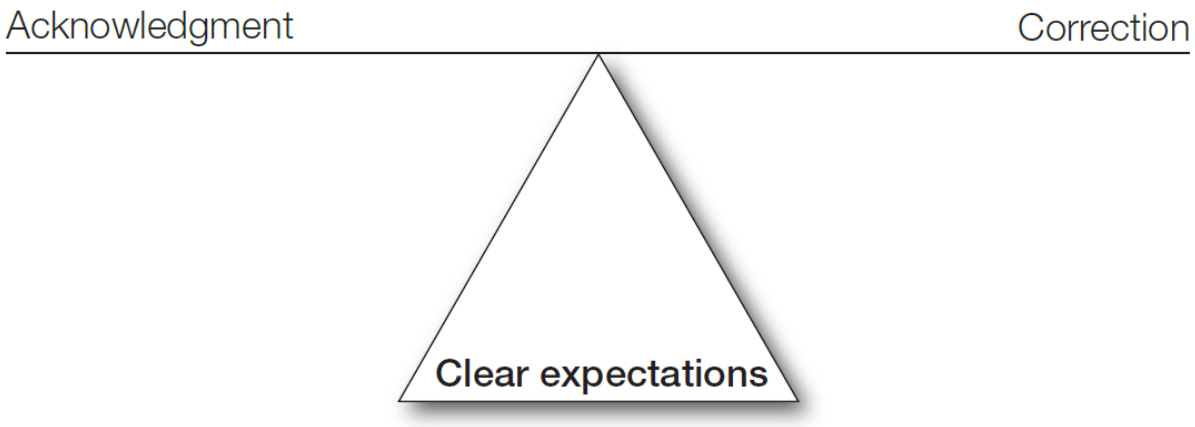
1. The strategies teachers use to teach their expectations to students.
2. How teachers acknowledge students when they are behaving appropriately.
3. How teachers correct students when they behave inappropriately.

The Essential Skills for Classroom Management are directly related to setting expectations, acknowledging appropriate behaviour and correcting inappropriate behaviour.

When a teacher is said to be 'in balance' in the classroom, they have:

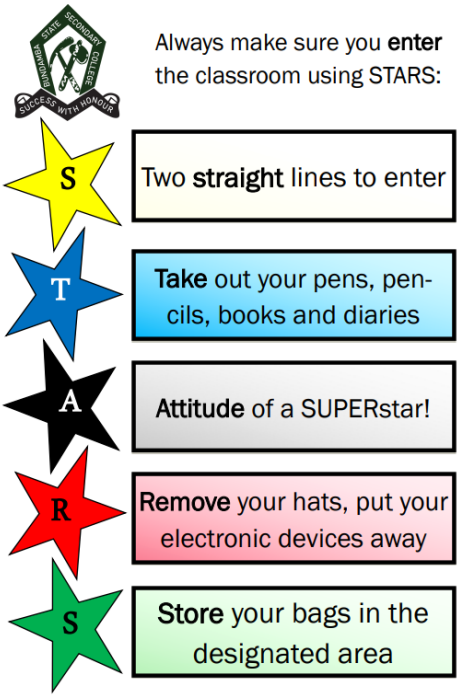
- clearly articulated their expectations to students
- established an evenness (balance) in their use of verbal and non-verbal language to acknowledge appropriate behaviour and correct inappropriate behaviour.

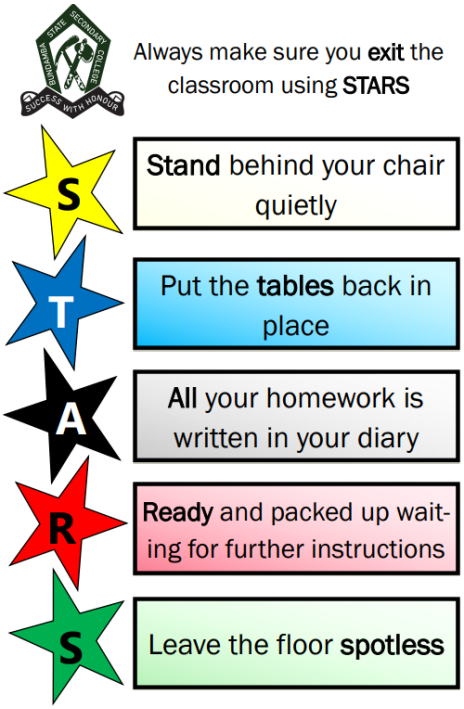
This is represented by 'The Balance Model of Behaviour Management'.



Teaching Practice #2 – STARS Routine

STARS Routines are utilised in the beginning and end of a lesson. This consistent approach leads to the development of expected behaviours of students while entering and exiting the classroom. This reduces the cognitive load required for regulation and enables students to engage faster in the lesson.





Teaching Practice #3 – Learning Modes

The learning modes highlight a variety of ways in which learning occurs. Each mode requires students and teachers to be interacting differently with content, resources and each other.

While each learning mode operates on its own, they are connected and fluid. Before a student begins an independent task, they may require collaboration with peers to increase understanding or develop ideas, then seek feedback after reflecting on the work they have produced.

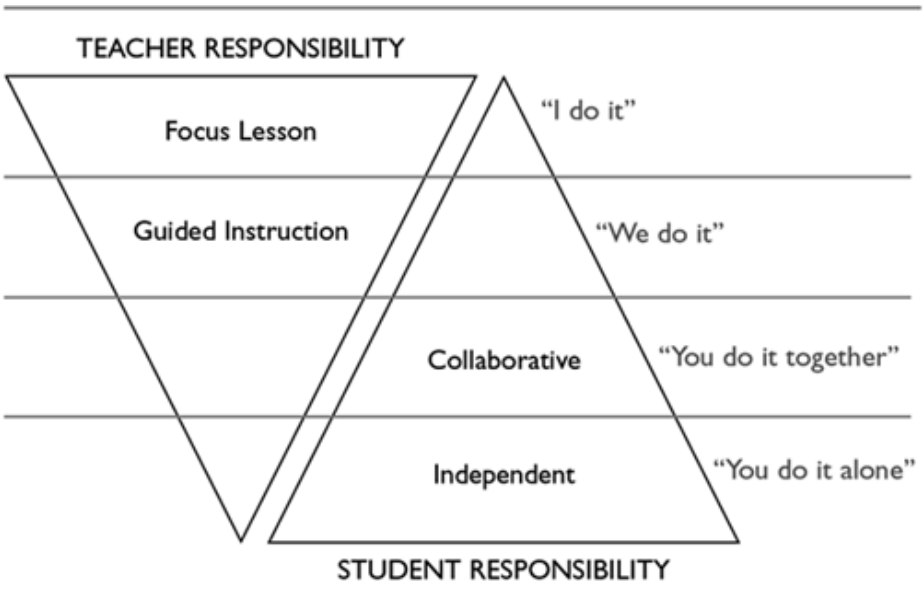
 **COLLABORATION** Learn with others	• sharing knowledge, experiences, agency • developing positive interdependencies • students teaching and learning from one another.	 **FEEDBACK & REFLECTION** Learn about my learning	• iterative and cyclical • occurring at any stage in the learning process • informs the learner about key aspects of the learning experience • can manifest in a wide range of forms.
 **DISCUSSION** Talk about & share ideas	• dialogue as an educative process • vehicle to develop effective speaking and listening skills • can build understanding of key concepts, empathy, ability to reason, and critical thinking skills.	 **INDEPENDENT** Learn by myself	• learner autonomy • learners able to self-organise, manage their time, solve problems independently, and make complex decisions • lifelong learning.
 **GUIDED** Learn with an expert	• expert assistance to guide the learning process • can involve people such as peers, the teacher, or outside expert; can be systems-based; can be a feature of task design.	 **EXPERIENTIAL** Make, explore & investigate	• learning through experience • an opportunity to acquire knowledge in a practical context.
 **EXPLICIT** Learn from an expert	• direct/explicit teaching of skills and content to students • structured demonstrations, lectures, and/or presentations.	 **DEMONSTRATION** Present my learning	• showing something — for example, ideas, concepts, processes, arguments, and visualisations. • widely used in scientific disciplines while being applicable to any discipline.

Pedagogical Practice #3: Learning

Teaching Practice #1 – Gradual release of Responsibility

The gradual release of responsibility (GRR) model is a particular style of teaching which is a structured method of pedagogy framed around a process devolving responsibility within the learning process from the teacher to the eventual independence of the learner. The goal of the Gradual Release of Responsibility Framework is to provide appropriate instruction, moving students towards independence.

Importantly, the GRR Framework does not have to be linear. Based on instructional objectives, educators may appropriately choose to begin in any part of the framework. Students move back and forth between each of the components as they master skills, strategies, and standards.



Focus Lessons

The teacher establishes the purpose of the lesson and models their thinking. The purpose should be based on the expected learning goal and success criteria and be clearly communicated to students. Teacher modelling should provide students with examples of the thinking and language required to be successful.

Guided Instruction

The teacher strategically uses questions, prompts, and cues to facilitate student understanding. During guided instruction, the teacher focuses on releasing responsibility to students while providing instructional scaffolds to ensure that students are successful.

Collaborative Learning

Students work in collaborative groups to produce something related to the topic at hand. This phase of instruction should provide students with an opportunity to consolidate their understanding before they apply it independently

Independent Learning

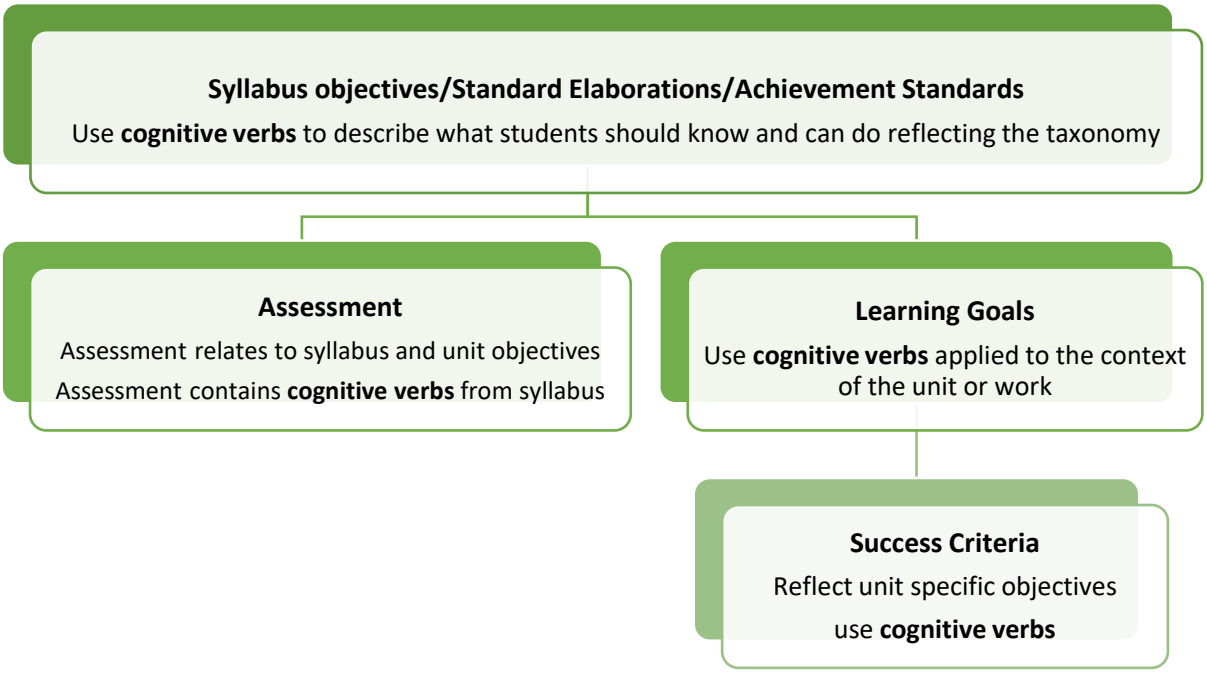
Students apply what they have learned in class and outside of class. Many independent learning tasks are used as formative assessments, designed to check for understanding and to identify needs for reteaching.

Teaching Practice #2 – Learning Goals and Success Criteria

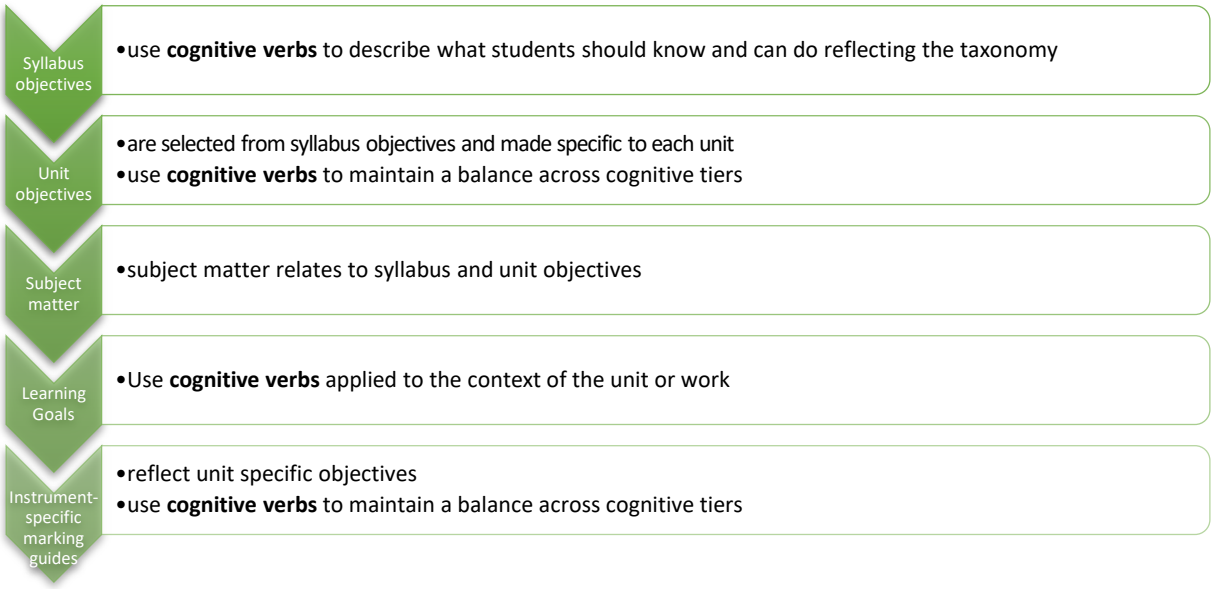
Learning goals must be detailed, specific, measurable or identifiable, and meaningful statements that articulate the end result of a learning experience. It is important to link any success criteria to a learning goal when designing the learning experience. Consider the steps students will take in order to achieve the learning goal.

Learning goals should align directly to Achievement Standards for years 7-10, and Subject Matter for years 11 and 12. This ensures alignment of the cognition, content and context in the curriculum.

Learning Goals in Years 7 to 10



Learning Goals in Years 11 and 12



Structure of a Learning Goal and Success Criteria

Learning Goal:

(**COGNITIVE VERB**) (*Subject Matter*)

Success Criteria:

(**COGNITIVE VERB**) (*Subject Matter*)

*Note: while the Success Criteria should follow the same structure as the Learning Goal, the cognitions (verbs) and subject matter will be derived from the learning goal, breaking it into smaller, achievable steps.

Examples of Learning Goals and Success Criteria:

Achievement Standard	They **identify** different forms of energy and **describe** how energy transfers and transformations cause change in simple systems.
Learning Goals	**Identify** different forms of energy. **Describe** how energy transfers and transformations cause change in simple systems
Success Criteria	• **Recognise** that kinetic energy is the energy possessed by moving bodies • **Recognise** that potential energy is stored energy, such as gravitational, chemical and elastic energy • **Recognise** that heat energy is often produced as a by-product of energy transfer, such as brakes on a car and light globes • **Use** flow diagrams to illustrate changes between different forms of energy

Teaching Practice #3 – Differentiation and Inclusion

Students experience inclusive education when they can access and fully participate in learning, alongside their similar-aged peers, supported by reasonable adjustments and teaching strategies tailored to meet their individual needs. Inclusion is embedded in all aspects of school life, and is supported by culture, policies and every day practices.
Our commitment means that children and young people across Queensland, from all social, cultural, community and family backgrounds, and of all identities and all abilities are able to:

- **attend** their local state school or education centre and be welcomed.
- **access and participate** in a high-quality education and fully engage in the curriculum along-side their similar-aged peers.
- **learn** in a safe and supportive environment, free from bullying, discrimination or harassment.
- **achieve** academically and socially with reasonable adjustments and supports tailored to meet their learning needs.

Differentiation at Bundamba SSC focuses on four main areas: Content, Process, Product and Environment. All students should have access to a curriculum that is adjusted (differentiated) to meet their specific learning needs.

Content: What students are expected to know, understand and be able to do

Content should be modified based on:

- **Abstraction: going beyond the facts** - The focus here is on abstract concepts, generalisations and theories. These foci should be part of discussions, presentations and reading materials. This will ensure content is presented at a higher level than to the 'general cohort'.
- **Complexity: greater breadth or depth** - This provides an opportunity for an in-depth study of selected content. Complexity is determined by:
    - the number of concepts and disciplines that must be understood or integrated
    - the difficulty of concepts and disciplines that must be understood or integrated.

The emphasis is on the inter-relationships within the content.

- **Variety: exposure to new ideas and content** - Students can work on different aspects of a broad theme and in their areas of interest. Content is expanded beyond the material presented in the general program.
- **Study of people: relate content to humans (past and present)** - Students study individuals or people. They investigate how they have reacted to various opportunities and problems.
- **Methods of Inquiry: understand how to think and act like an expert** - Students use procedures and processes used by experts working in their fields. This includes the methods of inquiry used:
    - in different disciplines
    - during different times
    - in different locations.

Process: How students learn the content

The process should be modified in terms of:

- **Thinking skills: complex and critical thinking skills -** Include activities that involve challenges such as analysis, evaluation and creation.
- **Open-ended processing: divergent thinking -** Students consider problems and questions that have no single solution. Instead, they need deeper thinking and research.
- **Proof and reasoning: provide reasons and substantiate -** Students justify their response to a problem or task. They also learn about other students' approaches to problem-solving. Activities are designed so students learn to evaluate reasoning processes.
- **Freedom of choice: opportunities for student voice and choice in their learning -** Provide choice of activities, concepts, methods, products and environments. This can be motivating and encourage self-regulation.
- **Interactions with like-ability peers: group interactions -** Grouping together (flexibly) like-ability students can provide both intellectual and social stimulation.
- **Variable pacing/compacting: differentiating the pace of learning -** Allow students to move through lower-order thinking quickly. This will give them more time to focus on higher-order thinking tasks or move students through the learning progression at a faster pace.

Product: What students produce to show their learning

Products should be modified to include:

- **Real-world problems**: authentic problems and scenarios.
    - Direct students to solve real-world problems.
    - Students use structured approaches that impact individuals and communities.
- **Real-world audiences**: authentic assessment evaluated by others.
    - Use a range of assessment formats for both summative and formative assessments. Provide time for students to work on long-term products in the class.
    - Teachers track and help with students' planning, research, and production.
    - Provide opportunities for students to present their products to authentic audiences. They can seek feedback and evaluation.
- **Evaluation: involve students.** Encourage reflection on self, peer, and teacher feedback. Include students in the design of the assessment criteria and rubric.
- **Transformations:** applying learning to new contexts.
    - Provide students opportunities to apply their knowledge and skills across learning areas and beyond the classroom.

Environment: the physical setting in which students learn

The learning environment should be modified to provide opportunities for:

- **Student-centred learning** - Focus on the student's interests, input, and ideas.
- **Independence -** Foster student independence and initiative. Skills of independence are explicitly modelled and taught.
- **Acceptance -** Encourage acceptance of others' ideas and opinions.
- **Complexity -** Include a rich variety of resources, media, ideas, methods, and tasks.
- **Varied groupings -** Encourage movement in and out of groups, desk settings, classrooms, and schools.

Teaching Practice #4 – Tactical Teaching of Reading, Tactical Teaching of Writing and Vocabulary Instruction

Tactical Teaching of Reading and Writing

The Tactical Teaching resources are based on the belief that what makes a professional teacher is the quality of the teacher's decisions. Essentially, the decisions fall into three interwoven and interactive domains:

The learning area

Understanding the field of knowledge and how students develop concepts, skills, processes and attitudes about it is a specialised body of knowledge.

The students

Knowing what sort of background they bring to the learning situation and what they already know is knowledge that you generate by watching and listening to students, examining their work samples and making judgements about their level of achievement.

The teaching

Knowing how to support the literacy demands across learning areas will help students to deal with the reading, writing, speaking and listening, and thinking tasks required.

Vocabulary Instruction

The Whole School Approach to Teaching has been agreed upon by all areas of the school for implementation in all year levels and includes:

- Every unit in every subject should have a written unit plan.
- Each unit should have a minimum of **2 core texts** that will be common to all teachers and students/classes.
- These two core texts shall be known in our school by students and staff by the common name of **'core text 1'** and **'core text 2'**
- Core text 1 and core text 2 will be taught with common before, during and after reading strategies. The language of **'before, during and after strategies'**, should be common to all students and staff. These strategies will be determined by the faculty leaders of the unit/subject.
- Faculty leaders of the unit/subject are to ensure that the unit plan details the core text 1 and core text 2 and the selected before, during and after reading strategies in the teaching and learning sequence. The unit plan should also include the location of the core texts 1 and 2 and the location of the resources required to support the teaching of the selected before, during and after reading strategies.
- Every unit in every subject will have a minimum of 10 vocabulary words evidenced in unit plans.
- All faculties will track vocab improvement through formative assessment.
- Faculties will use the *'Direct vocab instruction - four step program'* to explicitly teach vocab. This will be the common language used across all learning areas.
    1. Providing a description, explanation and examples of use of the new words
    2. Students state the meaning in their own words
    3. Students create a visual representation of the words/terms
    4. Ensure regular exposure to the new vocabulary
- Glossaries will be used in all subjects in years 7-10.

Teaching Practice #5 – Metacognition

Metacognition, or thinking about thinking, is an important skill to teach in the classroom. This skill involves any behaviour directly linked with monitoring one's own learning and thinking. These behaviours can include (but are not limited to):

- Setting goals
- Making sure a problem is understood before answering
- Monitoring memory recall and comprehension
- Reflection
- Generating and testing hypotheses
- Self-questioning
- Brainstorming ideas
- Selecting from a range of strategies to assist in learning

Metacognition is strongly linked to critical and creative thinking and essential in developing lifelong learners. Embedding opportunities to teach and practice metacognition provides students with the opportunity to become active participants in their own learning as well as prepare them to become active citizens in society.

Applying a metacognitive approach to teaching around metacognitive strategies that help students monitor their learning. This may include:

Teaching Habits	
Ask Questions	• Asking open-ended questions to probe understanding and challenge thinking. These could be directly from the teacher, or in the form of self-questioning prompts. • Open-ended questions could be used at any point in the lesson, be aimed at groups or individuals, and cover a variety of themes. For instance, open-ended questions might aim to drive student reflection, prediction or imagination. • Questions could be specifically about content, skills, collaboration or goals, and aimed at surface, deep or transfer levels of understanding. • Asking similar questions of yourself may also generate insights into your teaching practice, for instance, "Did I encourage reflection? Have I modelled skills through thinking aloud? Did the learning activities encourage explicit thinking? What worked and how do I know?"
Be Explicit	• Explicitly planning and clearly outlining key learning intentions for lessons, and why they are important, so that students can evaluate their current knowledge or ability to achieve those learning intentions. This can also be used as a time for reflection on learning intentions from previous lessons, in order to show the broader development of knowledge and skills, and the links between content and ideas, as well as returning to content that may need to be revisited or reinforced. • Describing different metacognitive strategies to students that could support the achievement of learning intentions. For instance, describing and modelling the use of concept maps or graphic organisers to help students map their thinking

Plan Ahead	Emphasise the importance of planning how to approach a problem, and monitoring the progress of the plan over time. • This may take the form of graphic organisers or questions that probe initial understanding and background knowledge at the start of a task, insights that have been gained during task performance, and reflections at the completion of the task.
Model your Thinking	Teacher modelling is ideal, but providing opportunities for students to witness others modelling their metacognitive practice, such as their peers, can also provide opportunities for learning. • An example of metacognitive modelling is the think aloud approach, where a teacher or student describes, for instance, their thoughts during the process of changing their mind, or identifying a point in their thinking when they got "stuck" and how they planned an approach to overcome this challenge.
Challenge Students	Once students feel confident in their subject knowledge, providing material that challenges their ability to use that knowledge and creates opportunities for them to self-test their metacognitive approaches to learning and solving problems, particularly in approaching novel tasks.
Evaluate Progress	• Connected to planning and monitoring, evaluation may take the form of summative assessment, or it may be used as a tool for reflecting on learning progress. • Ask students to individually and collectively reflect on learning goals, as well as the learning process, from previous and current lessons. • Take the opportunity to be self-reflective of your teaching practice, asking questions that prompt your own metacognition, such as those suggested in the 'Ask questions' teaching habit above
Promote Collaboration	During group work, providing opportunities for students to reflect on the effect of collaboration on the way they think and solve problems. • For instance, using a graphic organiser to support collaborative discussion, and open-ended questions to allow for reflection, such as "Are there common thoughts or themes that your group members share? Why do you think this is so or is not so? Why is it important to value the opinion of others?"
Keep Practicing	Providing opportunities for students to practice using different strategies, as well as providing feedback along the way.

Teaching Practice #6 – Questioning and Feedback

Questioning

Questioning is a powerful tool and effective teachers regularly use it for a range of purposes. It engages students, stimulates interest and curiosity in the learning, and makes links to students' lives. Questioning opens up opportunities for students to discuss, argue, and express opinions and alternative points of view. Effective questioning yields immediate feedback on student understanding, supports informal and formative assessment, and captures feedback on effectiveness of teaching strategies.

Types of questions:

- Questions that ask for more evidence
- Questions that ask for clarification
- Linking or extension questions
- Hypothetical questions
- Cause and effect questions
- Summary and synthesis questions (What are the one or two most important ideas that emerged from this discussion? What remains unresolved or contentious about this topic?)
- Memory (focus on identifying, naming, defining, designating, and responding)
- Convergent thinking (focus on explaining, stating relationships, comparing, and contrasting)
- Divergent thinking (focus on predicting, hypothesising, inferring, and reconstructing)
- Evaluative thinking (focus on valuing, defending, judging, and justifying choices)

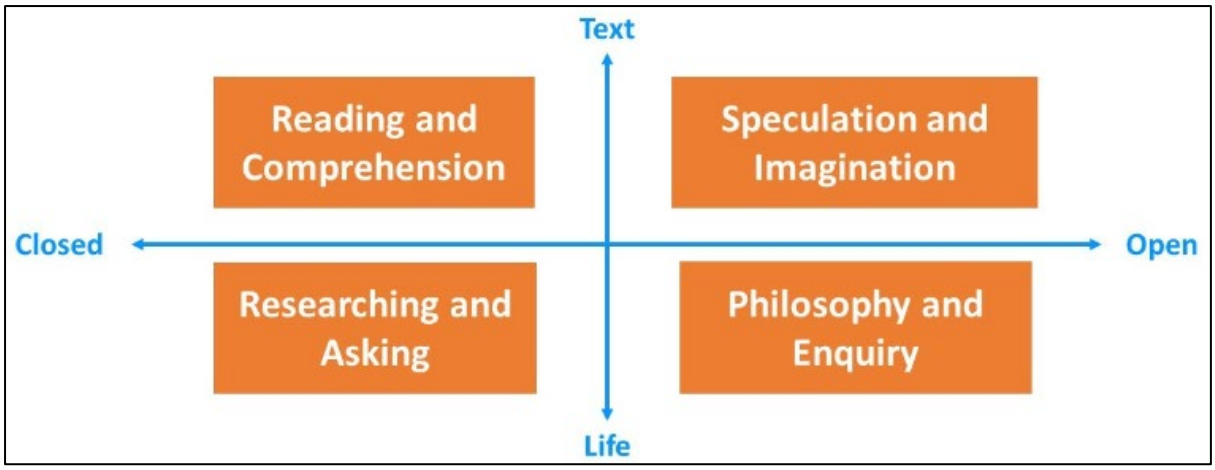
The Q-Matrix and Question Quadrants

A Q-matrix or Question Quadrant can be used by teachers and students to assist with question development and answering. Each of the examples below start with simple/familiar, literal or basic recall questions in the top left corner. As you move towards the bottom right corner, the questions increase in complexity and tap into critical and creative ways of thinking.

Example 1: Q-Matrix

	Event *What?*	**Situation** *Where / When?*	**Person** *Who?*	**Choice** *Which?*	**Reason** *Why?*	**Means** *How?*
Present	What is?					
Past		When was?				
Possibility			Who can?			
Probability				Which could?		
Prediction					Why will?	
Imagination						How might?

Example 2: Question Quadrant V1



Example 3: Question Quadrant V2

	Closed (convergent)	**Open (Divergent)**
Narrow (simple)	Simple, little elaboration needed to answer; finite number of agreed answers e.g. ♦ How many sides does a rectangle have?	Little elaboration; requires some divergent thinking; not one "correct answer" e.g. ♦ Why are Squares e.g. Anzac Square, called squares when they are not?
Wide (Complex)	Complex, requires deeper thinking; finite number of answers e.g. ♦ Draw a Venn diagram to show the relationship between squares and rectangles	Complex, requires some interpretation; divergent thinking; may require critical/creative thinking; many responses e.g. ♦ Create a conversation between a square and a rectangle. What would they say to each other?

Feedback

Feedback informs a student and/or teacher about the student's performance relative to learning goals. Feedback redirects or refocuses teacher and student actions so the student can align effort and activity with a clear outcome that leads to achieving a learning goal. Teachers and peers can provide formal or informal feedback. It can be oral, written, formative or summative. Whatever its form, it comprises specific advice a student can use to improve performance.

Collectively the research defines feedback as information:

- For the learner and teacher about the learner's performance
- About performance relative to learning goals
- Based on evidence of learning
- From the teacher, the student or peers
- Leading to changes in teacher and student behaviour

Good feedback processes produce two key outcomes:

1. Teachers use and adapt effective teaching strategies to help students make progress in areas identified as needing attention
2. Students change what they do to address the learning goals more effectively

Characteristics of effective feedback:

Setting a Goal	• A specific and challenging goal is set, often with criteria for a high-quality performance on a task. • The goal is communicated so that students understand it. • Feedback addresses task goals directly.
Kind of Feedback	• Feedback draws attention to positive elements of the performance: for example, the details of correct responses. • Feedback includes constructive criticism: advice that provokes the student to improve task performance. • Feedback refers to changes in performance from previous efforts. • Feedback includes an element of self-assessment by students (including peer assessment) as part of the process of encouraging student autonomy and responsibility.
Level of Feedback	• Feedback provides information about a task, how well it was performed and how to do it more effectively. • Feedback at the process level: how can the student improve the learning processes needed to understand and perform the task? • Feedback at the self-regulation level: how can the student do a better job of planning, monitoring and managing their actions and using strategies in approaching the task? This is also described as "metacognitive" feedback.

Five strategies to put feedback into practice:

1. Clarifying, sharing and understanding learning intentions and criteria for success
2. Engineering classroom activities that elicit evidence of learning
3. Providing feedback that moves learners forward
4. Activating students as instructional resources for one another
5. Activating students as the owners of their own learning.