

	PRINCIPALS	TEACHERS	STUDENTS	COMMUNITY	RESEARCHERS (IN RELATION TO THEIR ROLES IN THE PASL PROJECT)
STEM discipline specific and integrated knowledge and practices	<ul style="list-style-type: none"> <li>Awareness of concepts, skills and practices related to STEM disciplines.</li> <li>Awareness of the range of careers that require STEM skills and the role STEM plays in both individual well-being and national economic growth.</li> <li>Knowledge of relevant components of the Australian Curriculum and national policy documents.</li> <li>Capacity to lead initiatives aimed at promoting STEM teaching and learning (e.g., teacher professional learning groups, connections to industry).</li> <li>Capacity to foster a STEM positive school culture (positive student, teacher and parent attitudes towards STEM education).</li> </ul>	<ul style="list-style-type: none"> <li>Competence with concepts, skills and practices of at least one STEM discipline.</li> <li>Awareness of the range of careers that require STEM skills and the role STEM plays in both individual well-being and national economic growth.</li> <li>Knowledge of relevant components of the Australian Curriculum and national policy documents.</li> <li>Capacity to provide leadership within STEM teaching and learning initiatives (e.g., teacher professional learning groups).</li> <li>Capacity to select/design/design and implement STEM capability promoting curriculum (e.g., learning programs, tasks, pedagogies) – within at least one discipline and in an integrated mode working with others.</li> </ul>	<ul style="list-style-type: none"> <li>STEM concepts, skills and practice</li> <li>Awareness of the role STEM capability plays in the future of the country in general and the well-being of individuals in particular.</li> <li>Design and problem solving strategies.</li> <li>Creative thinking.</li> <li>Interdisciplinary capacity.</li> </ul>	<ul style="list-style-type: none"> <li>Awareness of concepts, skills and practices related to STEM disciplines.</li> <li>Awareness of the importance of STEM skills for both individual well-being and national economic growth.</li> <li>Understanding that addressing STEM capability development is consistent with the aims of the Australian Curriculum.</li> <li>Capacity to facilitate connection to local STEM related industries.</li> <li>Willingness to engage with the school to develop the optimal support for school STEM initiatives and to foster a positive STEM culture across the community.</li> <li>Capacity to provide strategic advice on how community cultural capital can be utilised to best support school STEM initiatives and to foster a positive STEM culture.</li> </ul>	<ul style="list-style-type: none"> <li>Expertise with concepts, skills and practices related to STEM disciplines – disciplinary and interdisciplinary capacity - and the ways in which they are taught and learnt.</li> <li>Awareness of the range of careers that require STEM skills and the role STEM plays in both individual well-being and national economic growth.</li> <li>Knowledge of relevant components of the Australian Curriculum and national policy documents.</li> <li>Understanding of the facets of leadership necessary to promote a positive and capability enhancing STEM school culture.</li> <li>Capacity to select/design/design and implement STEM capability promoting curriculum (e.g., learning programs, tasks, pedagogies) – within at least one discipline and in an integrated mode working with others.</li> <li>Capacity to lead initiatives with principals aimed at promoting STEM teaching and learning (e.g., conducting professional learning activities, resource development).</li> <li>Capacity to foster and maintain a STEM positive culture (e.g., work with project partners).</li> <li>Capacity to ask the right questions about the implementation of effective STEM initiatives.</li> </ul>
Contexts	<ul style="list-style-type: none"> <li>Capacity to develop a vision for whole school STEM teaching and learning, relevant to specific educational environments.</li> <li>Capacity to promote STEM education to the broader school community and manage associated expectations.</li> <li>Strategic in managing the demands and opportunities associated with national and state curriculum and policy requirements and settings. This includes a reflection of Aboriginal and Torres Strait Islander perspectives in whole school strategic planning (e.g., Australian Curriculum, Cross Curriculum Priority).</li> <li>Capacity to establish partnerships (e.g., with industry, business, tertiary education etc.).</li> <li>Capacity to lead sustainable educational change specifically allied to the culture of the school.</li> </ul>	<ul style="list-style-type: none"> <li>Capacity to identify and utilise STEM relevant real-world situations suitable for students' teaching and learning experiences.</li> <li>Capacity to fit STEM learning experiences to the learning circumstance of students (e.g., learning needs, level of development).</li> <li>Capacity to make links to students' diverse cultural backgrounds and acknowledge their contributions (e.g., Aboriginal and/or Torres Strait Islander perspectives).</li> <li>Capacity to fit STEM learning experiences to the available school resources (e.g., digital technologies, built environment).</li> <li>Capacity to establish or be involved in partnerships (e.g., with industry, business, tertiary education etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Capacity to use STEM capability in a range of real-world situations, both:                             <ul style="list-style-type: none"> <li>within schools;</li> <li>and beyond school settings.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Understanding of how community cultural capital can be utilised to best support school STEM initiatives and to foster a positive STEM culture.</li> <li>Understanding of the opportunities and challenges associated with community expectations related to STEM education, and how these might be addressed/managed.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of how to leverage the features of specific educational environments to identify opportunities that promote STEM.</li> <li>Understanding of how to promote STEM education to the broader community.</li> <li>Knowledge and understanding of the demands and opportunities associated with national and state curriculum and policy requirements and settings.</li> </ul>
Dispositions	<ul style="list-style-type: none"> <li>Belief that all students and teachers can develop/enhance their STEM capability.</li> <li>Openness to the implementation of innovative STEM teaching practices.</li> <li>Confidence that innovative STEM programs can be initiated, managed and brought to fruition.</li> <li>Flexible and adaptable change leadership practices so that all feel supported and encouraged in their engagement with the STEM project, regardless of differences in levels of knowledge, skill and confidence.</li> <li>Willingness to be personally and actively involved in establishing and sustaining the school STEM teaching and learning programs.</li> <li>Flexible and adaptive thinking as their institution continues to innovate (e.g., openness to changes in school curriculum delivery structures and practices).</li> </ul>	<ul style="list-style-type: none"> <li>Belief that they themselves can develop STEM capability.</li> <li>Belief that all students are can develop STEM capability.</li> <li>Motivation to enhance STEM teaching practice.</li> <li>Willingness and confidence to adopt STEM based approaches to teaching.</li> <li>Preparedness to adopt flexible and adaptive use of STEM teaching practices.</li> </ul>	<ul style="list-style-type: none"> <li>Belief that STEM capability is an important and obtainable goal.</li> <li>Willingness and confidence to use STEM based approaches when engaging with real-world problems.</li> <li>Preparedness to make flexible and adaptive use of STEM.</li> </ul>	<ul style="list-style-type: none"> <li>Belief that STEM capability is an important and obtainable goal for all students.</li> <li>Confidence that innovation in STEM education can improve student learning outcomes and life opportunities.</li> <li>Confidence that the innovative STEM programs can be initiated, managed and brought to fruition, through partnership with school and community.</li> <li>Openness to the implementation of innovative STEM teaching practices.</li> <li>Openness to continuing innovation (e.g., changes to school curriculum delivery structures).</li> </ul>	<ul style="list-style-type: none"> <li>Brief that the leadership of principals is pivotal to the development of a STEM positive school culture and the promotion of teachers' and students' STEM capabilities.</li> <li>Belief that all students and teachers can develop/enhance their STEM capability.</li> <li>Sensitivity to information about innovative and/or effective STEM teaching and learning initiatives.</li> <li>Confidence that innovative STEM programs can be initiated, managed and brought to fruition.</li> <li>Flexible and adaptive thinking as the demands of STEM education evolve.</li> <li>Willingness to respond to evaluative feedback for ongoing improvement of initiatives.</li> </ul>
Tools	<ul style="list-style-type: none"> <li>Understanding of the role material (e.g., models, measuring instruments), representational (e.g., symbol systems, graphs, maps, diagrams, drawings, tables) and digital (e.g., computers, robots, Internet of Things) tools play in STEM teaching and learning.</li> <li>Capacity to identify and procure resources that support effective STEM teaching and learning within their school context.</li> </ul>	<ul style="list-style-type: none"> <li>Confidence and capacity to teach how to use material (e.g., models, measuring instruments), representational (e.g., symbol systems, graphs, maps, diagrams, drawings, tables) and digital (e.g., computers, robots, Internet of Things) tools to mediate and shape thinking.</li> <li>Possess strategies to identify resources that support effective STEM teaching and learning within their school context.</li> </ul>	<ul style="list-style-type: none"> <li>Willingness and capacity to use material (models, measuring instruments), representational (symbol systems, graphs, maps, diagrams, drawings, tables) and digital (e.g., computers, robots, Internet of Things) tools to mediate and shape thinking.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of the importance of tools and other resources (e.g., measuring instruments, computers, robots) to a quality STEM teaching and learning and the need to develop school budgets accordingly.</li> <li>Capacity to provide or seek out strategic advice on the identification and procurement of resources that support effective STEM teaching and learning within their school context.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of the role material (e.g., models, measuring instruments), representational (e.g., symbol systems, graphs, maps, diagrams, drawings, tables) and digital (e.g., computers, robots, Internet of Things) STEM teaching and learning.</li> <li>Possess strategies to identify resources that support effective STEM teaching and learning and are suitable to school context.</li> </ul>
Critical orientation	<ul style="list-style-type: none"> <li>Preparedness to make evidence informed judgements and decisions about whole school STEM teaching and learning programs.</li> <li>Capacity to gather and analyse relevant data to inform future directions in promoting STEM teaching and learning.</li> <li>Extensive knowledge, skills and capacities related to leading complicated educational change effectively.</li> </ul>	<ul style="list-style-type: none"> <li>Capacity to develop their own, and promote their students' capacity to gather and analyse evidence in order to:                             <ul style="list-style-type: none"> <li>make judgements and decisions;</li> <li>add support to arguments;</li> <li>challenge an argument or position;</li> <li>defend an argument of position.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Use of STEM capabilities that require critical thinking:                             <ul style="list-style-type: none"> <li>gather and analyse evidence to make judgements and decisions;</li> <li>add support to arguments;</li> <li>challenge an argument or position.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Provide informed advice to the school and community in partnership about the development of a positive school STEM culture.</li> </ul>	<ul style="list-style-type: none"> <li>Preparedness to make evidence-informed judgements, decisions and actions about STEM teaching and learning initiatives.</li> <li>The capacity to gather and analyse relevant data to inform future directions in promoting STEM teaching and learning.</li> </ul>