

Unit Outline (Higher Education)

Institute / School: Institute of Education, Arts & Community

Unit Title: Steam Ahead With Young Children

Unit ID: EDMAS6057

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 070101

Description of the Unit:

This unit is designed to allow PSTs to explore the concepts of science and environmental awareness, technology, engineering, art and mathematics (STEAM) appropriate for young children in an early childhood environment. Using their knowledge of child development, content and curricula requirements PSTs will plan and implement appropriate STEAM activities for young children in prior-to-school settings. PSTs will examine appropriate contemporary teaching strategies and curricula approaches, including play-based and inclusive strategies and alternative curricula approaches. PSTs will explore the importance and impact of culture, diversity and inclusion in the planning and programming of STEAM and environmental education experiences. PSTs will begin to use advocacy and research to improve the teaching of STEAM and environmental education in educational settings.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment.

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:
Knowledge:

- K1.** Articulate the importance of demonstrating a positive attitude towards STEAM and the environment, including attitudes, processes and concepts and how STEAM can be integrated with other curriculum teaching areas.
- K2.** Demonstrate an understanding of how developmental theory, child health, wellbeing, safety and curricular requirements underpin curricula decision making.
- K3.** Select teaching methods and strategies appropriate for teaching STEAM in ways that are inclusive of all young children and articulate the role of pedagogies, including play-based pedagogies and curricular approaches in engaging young learners in STEAM and environmental education in prior to school settings.
- K4.** Demonstrate an understanding of contemporary issues around STEAM and environmental education and their impact on teaching.
- K5.** Demonstrate an awareness of the role of community partnerships and culturally diverse perspectives in developing culturally inclusive STEAM and environmental education programs.

Skills:

- S1.** Explain why STEAM and environmental education should be taught to young children and the ways in which STEAM experiences and environmental education can contribute to development.
- S2.** Be conscious of the role that the adult can play in assisting young children to explore science and their environment while addressing curricula requirements
- S3.** Identify the major areas of STEAM instruction and inquiry stances, intentional and collaborative teaching strategies and develop working relationships with parents/carers and the wider community to design environmental education projects.
- S4.** Use critical reflection as an impetus for professional learning.

Application of knowledge and skills:

- A1.** Reflect on personal beliefs and dispositions towards STEAM and environmental education.
- A2.** Critically reflect on a range of learning experiences developed and implemented in an early childhood context.
- A3.** Use knowledge of child development, collaborative strategies, STEAM and environment education content and curricular requirements to develop and implement an environmental education project. Propose possible changes that focus on STEAM and discuss how these changes could be implemented with active involvement of children, families and communities.

Unit Content:

- STEAM, what it is and why it is important to young children
- An understanding of what children can gain developmentally through STEAM and environmental experiences

- Australia's early childhood environmental education networks
- Initiating a connection with the environment
- Initiatives for developmental challenges in early childhood environments
- Sustainability in early childhood
- Day-to-day activities that offer frequent opportunities for STEAM
- STEAM and environmental learning
- STEAM processes of observing, comparing, classifying, communicating, predicting, measuring and experimenting
- Appropriate STEAM experiences to implement with young children in the areas of water, air, sound, animals, plants, electricity, magnets, light and environmental awareness
- Relationships between an adult's positive attitude towards STEAM and the environment on a child's eagerness to learn
- Development of STEAM concepts
- Identifying STEAM and environmental experiences in daily routine tasks, planned and unplanned

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**tttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 1 Interpersonal	Students at this level will demonstrate an advanced ability in a range of contexts to effectively communicate, interact and work with others both individually and in groups. Students will be required to display high level skills in-person and/or online in: • Using and demonstrating a high level of verbal and non-verbal communication • Demonstrating a mastery of listening for meaning and influencing via active listening • Demonstrating and showing empathy for others • High order skills in negotiating and conflict resolution skills\\ • Demonstrating mastery of working respectfully in cross-cultural and diverse teams.	Not applicable	Not applicable
FEDTASK 2 Leadership	Students at this level will demonstrate a mastery in professional skills and behaviours in leading others. • Creating and sustaining a collegial environment • Demonstrating a high level of self-awareness and the ability to self-reflect and justify decisions • Inspiring and initiating opportunities to lead others • Making informed professional decisions • Demonstrating initiative in new professional situations.	Not applicable	Not applicable

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 3 Critical Thinking and Creativity	Students at this level will demonstrate high level skills in working in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: <ul style="list-style-type: none"> • Reflecting critically to generate and consider complex ideas and concepts at an abstract level • Analysing complex and abstract ideas, concepts and information • Communicate alternative perspectives to justify complex ideas • Demonstrate a mastery of challenging conventional thinking to clarify complex concepts • Forming creative solutions in problem solving to new situations for further learning. 	Not applicable	Not applicable
FEDTASK 4 Digital Literacy	Students at this level will demonstrate the ability to work competently across a wide range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: <ul style="list-style-type: none"> • Mastering, exploring, evaluating, managing, curating, organising and sharing digital information professionally • Collating, managing complex data, accessing and using digital data securely • Receiving and responding professionally to messages in a range of professional digital media • Contributing competently and professionally to digital teams and working groups • Participating at a high level in digital learning opportunities. 	Not applicable	Not applicable
FEDTASK 5 sustainable and Ethical Mindset	Students at this level will demonstrate a mastery of considering and assessing the consequences and impact of ideas and actions in enacting professional ethical and sustainable decisions. Students will be required to display skills in: <ul style="list-style-type: none"> • Demonstrate informed judgment making that considers the impact of devising complex solutions in ambiguous global economic environmental and societal contexts • Professionally committing to the promulgation of social responsibility • Demonstrate the ability to evaluate ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Communicating lifelong, life-wide and life-deep learning to be open to the diverse professional others • Generating, leading and implementing required actions to foster sustainability in their professional and personal life 	Not applicable	Not applicable

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K2, A1	What does a Scientist look like? PST to explain or creatively represent what they believe a scientist looks like and what forms the basis of their beliefs.	Hurdle Self reflection	U/S
K1, K2, K3, K4, K5, S1, S2, S3, S4, A2, A3 APST: 1.1, 1.2, 1.5, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 7.1	Using a Learning Experience Plan (LEP) template, plan a range of STEAM and environmental experiences addressing a range of STEAM concepts, resources and teaching and assessment strategies for young children. PST to implement a selection of the planned experiences with an individual child or small group of children. PST to reflect on their teaching practice in terms of preparation, planning, delivery, content knowledge teaching strategies, resources and implementation.	Planning and reflection	40% - 60%

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K3, K4, S1, S2, S4, APST: 1.1, 1.2, 2.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 4.1, 4.2, 4.4, 7.1, 7.4	Develop a STEAM project based on environmental education for a group of young children. Design and present information about the project and the anticipated outcomes to be shared with parents/carers and the wider community that stimulates their interest in children's learning and involvement in this project.	Project	40% - 60%

Adopted Reference Style:

APA ()

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)