

UNIT OUTLINE FOR EDP155.9 Science and Design Technologies

Name of Unit 1 (Unit Code 1)
Science and Design Technologies (EDP155.9)

SECTION 1 – GENERAL INFORMATION

Administrative details

Associated higher education awards	Duration	Level <i>(for example, introductory, intermediate, advanced level, 1st year, 2nd year, 3rd year)</i>	Unit Coordinator <i>(incl. academic title)</i>
Master of Teaching – Primary	One semester	1 st year	Dr Mark Sorrell

Core or elective unit

Indicate if the unit is a

- core unit
 elective unit
 other (please specify below):

Unit weighting

Using the table below, indicate the credit point weighting of this unit and the credit point total for the course of study (for example, 10 credit points for the unit and 320 credit points for the course of study).

Unit credit points	Total course credit points
6 credit points	96 credit points

Student workload

Using the table below, indicate the expected student workload per week for this unit.

No. timetabled hours per week	No. personal study hours per week	Total workload hours per week
3	6	9

For those students requiring additional English language support, how many additional hours per week is it expected that they will undertake?

Additional English language support: 0 hours per week

Pre-requisites and co-requisites

Are students required have undertaken a prerequisite or co-requisite unit for this unit?

- Yes No

SECTION 2 – ACADEMIC DETAILS

Brief description of the content of the unit

This unit aims to develop knowledge of the Science and Design & Technology curricula, and prepare students to teach these units, including developing an appreciation of Science as a way of understanding the world rather than a set of facts to be remembered, and modern, research-supported effective pedagogy for teaching of Science and D&T.

Learning outcomes for the unit

1. Outline, analyse and critically evaluate current Science and Design & Technology best practices for learning within primary school settings
2. Making use of curriculum documents, prepare to plan, program, teach, assess and evaluate developmentally appropriate activities, lessons and sequences of lessons in Science, Design and Technology;
3. Compile a file or folder system of suitable Science and Design and Technology resources to support their delivery in R-6 school settings; Evaluate and critique prepared activities
4. Promote responsible and ethical scientific literacy, numeracy and use of Science and Design and Technology, recognising how they relate to biblical faith as contributors to healthy living and good citizenship

Assessment tasks

Type	Learning Outcome/s assessed	When assessed – year, session and week	Weighting
<p>Report and analysis of 5Es approach to teaching Science and Design & Technology</p> <p>This task requires you to research one of the key approaches to teaching Science and Design and Technology, summarise the methodology and the reasoning behind it, discuss the evidence supporting the approach, and analyse how to use it effectively in the classroom. You will also be required to evaluate evidence describing the benefits and deficits of this approach.</p> <p>(1800 words)</p>	1,4	S2 Week 6	30%
<p>Field trip planning</p> <p>The first part of this task is to critically analyse and summarise research into the benefits of field trips in science education, and what research says about making most effective use of field trips. Several articles will be provided as a starting point for this. (~800 words)</p> <p>The task then requires students to plan and prepare a field trip for a topic in science or technology, to a location (possibly within walking distance of North Terrace - Museum, Art Gallery, Zoo, Botanic Gardens, Universities...</p> <p>All of the activities/resources/plans should cite appropriate educational theories and principles.</p> <p>(1800 words equivalent)</p>	1,2,3,4	S2 Week 9	30%

S T U D Y A T

Assessment tasks			
Type	Learning Outcome/s assessed	When assessed – year, session and week	Weighting
<p>Preparation of a sequence of learning activities for Science and Design & Technology</p> <p>Prepare a plan for a Science unit (for a year level of your choosing) using the Tabor Professional Experience webpage template. This should cover lesson activities for either a half-term, or whole term Science topic (at least 8 lessons). Your plan must reflect and be compliant with the Australian Curriculum.</p> <p>At least 2 of the lessons must integrate aspects Design and Technology curriculum, and at least one should integrate aspects of the nature of science.</p> <p>Use the unit plan template provided and reference the curriculum documents, including Content Descriptions and Achievement Standards for the year level. This unit will be planned to the level of specific content, strategies, activities, assessment and resources for the entire unit, but will require detailed lesson plans for two (2) of the lessons. You should use the Tabor lesson plan templates for the two detailed lesson plans.</p> <p>Your unit plan should demonstrate your knowledge of effective Science teaching.</p> <p>You will then need to write a critique of your unit, explaining aspects of theory from the unit you have considered to create an excellent unit of work.</p> <p>(2400 words)</p>	1,2,3,4	S2 Week 14	40%

2.1 Prescribed and recommended readings

Provide below, in formal reference format, a list of the prescribed and recommended readings for the unit.

Prescribed reading:

Fitzgerald, A. (Ed.). (2013). *Learning and Teaching Primary Science*. Port Melbourne: Cambridge University Press.

Fleer, M., & Jane, B. (2011). *Design and Technology for Children* (3rd ed.). Sydney: Prentice Hall.

Venville, G., & Dawson, V. (2008). *The art of teaching primary Science*. Sydney: Allen & Unwin.

Primary Connections (2007). *Primary Connections: Stages 1, 2 and 3*. Canberra: DEST.

Recommended reading:

Fitzgerald, A. & Corrigan, D. (2019). *Science Education for Australian Students: Teaching Science from Foundation to Year 12*. Allen & Unwin.

Chambers, P. & Souter, N. (2020). *Explaining Primary Science*. SAGE Publications.

Allen, M. (2010). *Misconceptions in Primary Science*. Berkshire UK: Open University Press.

Devereux, J. (2007). *Science for Primary and Early Years: Developing Unit Knowledge Second* (2nd ed.). London: SAGE

Gregson, R. (Ed.). (2018). *Connecting with Science education* (2nd ed.). South Melbourne: Oxford University Press.

Loxley, P., Dawes, L. & Nicholls, L. (2014) *Teaching Science: Promoting Enjoyment and Development*. GB: Taylor and Francis Ltd.

Loxley, P. (2020). *Big Ideas in Outdoor Primary Science: Understanding and Enjoying the Natural World*. GB: Taylor and Francis Ltd.

Skamp, K. (Ed.) (2018). *Teaching Primary Science constructively*, (6th ed.). Melbourne: Nelson Australia.

Venville, G., & Dawson, V. (2004). *The art of teaching Science*. Sydney: Allen & Unwin.