

UNIT OUTLINE FOR EDP155.5 Science and Design Technologies

Name of Unit 1 (Unit Code 1)

Science and Design Technologies (EDP155.5)

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> |
|---|--------------|---|---|
| Bachelor of Education 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 | 240 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

- Other (please specify)

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. Evaluate and outline 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;
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.</p> <p>(1350 words)</p> | 1,4 | S2 Week 6 | 30% |
| <p>Field trip planning</p> <p>This task 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, and Universities etc.) You will need to submit a file or e-Portfolio containing:</p> <ol style="list-style-type: none"> 1. Details of activities/lessons to be done before the excursion, as preparation. 2. Information/research you have done on the location, what ideas you have considered, and your reasoning behind choosing this excursion. 3. A plan/timetable of how you would be running the excursion with a class. 4. Details/plans of all the educational activities to be included and copies of any resources you would use. 5. Your reflections of your personal visit to the destination, and how this changed any of your prior ideas/conceptions. <p>(1350 words equivalent)</p> | 1,2,3,4 | S2 Week 9 | 30% |

| 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 of the Technologies 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. (1800 words equivalent)</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.