

ACER Portfolio Project

TEACHING FIELD: Primary
LEVEL: Highly Accomplished

ENTRY 3: Building Inquiry Skills

The ACER Portfolio Project focuses on the research and practical challenges involved in developing valid and feasible methods by which teachers can demonstrate how they meet the Australian Professional Standards for Teachers at the highly accomplished level. Entry 3 is one of four portfolio entries for primary teachers.

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ENTRY 3: Building Inquiry Skills

Overview

This portfolio entry is designed to give you an opportunity to demonstrate how you engage your students in collaborative investigations that strengthen their inquiry skills and deepen their conceptual understanding, as described in the Australian Curriculum. The context for developing inquiry skills will be in the Science, in the Geography, or in the History learning areas of the curriculum. Each emphasises the importance of developing students' capacity to be competent, critical and creative users of inquiry methods and skills.

Your entry will also show how you set long- and short-term learning goals for students referenced to the Australian Curriculum, how your students were responsible for planning, conducting and reporting their investigations, how the groups worked collaboratively, purposefully and inclusively and how your students progressed in their inquiry skills.

The context of this entry will be a unit of work your have planned and implemented to develop your students' inquiry skills and engage them in effective collaborative work. The unit of work will cover an extended period, at least several weeks.

Your entry will provide evidence of your teaching by means of:

- **A video recording** (15 minutes) showing evidence of:
 - your students engaged in, or reporting on, an investigation that they have conducted over an extended unit of work;
 - how they have developed their inquiry skills; and
 - how their investigation has developed their conceptual knowledge and understanding in the relevant learning area.
- **Teacher artefacts and teaching materials** used to assist and guide students in their investigations. These will help to the reader to understand the activities shown in the video segment and how the work that the groups have undertaken has been supported.
- **A Written Commentary** that describes the unit of work and the context for the video-recorded discussions; gives reasons for selecting the video segment; provides a description and analysis of the relevant evidence in the video and reflection on and evaluation of the demonstrated teaching and development of students' inquiry skills.

How the entry is designed and why

This entry is designed to enable you to provide evidence of how you meet standards for highly accomplished teaching in your current teaching context. Three aspects of accomplished teaching have shaped the design of the entry. In preparing your entry, you will have the opportunity to provide evidence about your teaching in relation to:

1. The Australian Professional Standards for Teachers (AITSL) at the Highly Accomplished career stage.
2. The Australian Curriculum; in particular the Science, or the Humanities and Social Sciences learning areas.
3. Research on best practice for teaching and learning that informed your practice in relation to the focus of this entry.

Australian Professional Standards for Teachers (APST) relevant to Entry 3

To successfully complete this portfolio entry, you will provide evidence your accomplishment relevant to the following *Australian Professional Standards for Teaching* at the Highly Accomplished career stage:

Standard 1: Know students and how they learn

Standard 2: Know the content and how to teach it

Standard 3: Plan for and implement effective teaching and learning

Standard 4: Create and maintain supportive and safe learning environments

Standard 5: Assess, provide feedback and report on student learning

The focus of this entry is on Standards 2 and 3, although your entry will also provide evidence in relation to Standards 1, 4 and 5.

<http://www.aitsl.edu.au/australian-professional-standards-for-teachers/standards/list>

Australian Curriculum Standards relevant to this entry

The curriculum context for this entry will be the Australian Curriculum, in particular the *Science Learning Area*, or the *Humanities and Social Science Learning Area*, from Foundation to Year 6. These learning areas flesh out what Standard 2, *Know the content and how to teach it*, means in the context of this entry.

Each learning area emphasises the importance of students engaging in processes that reflect what it means to be “doing” that subject; i.e. what it means to engage in a scientific investigation, to be investigating geographically or to be using historical skills. Each emphasises the importance of providing opportunities to develop both knowledge and understanding and inquiry skills specific to that Learning Area.

You may choose to focus your entry on one or more of these learning areas; e.g. science, or geography or history.

- A. Science:** The Australian Curriculum: Science indicates that effective primary teachers provide quality opportunities for their students to develop:
- an understanding of important science concepts and processes, the practices used to develop scientific knowledge, of science’s contribution to our culture and society, and its applications in our lives

- an interest in science as a means of expanding their curiosity and willingness to explore, ask questions about and speculate on the changing world in which they live
- an understanding of the nature of scientific inquiry and the ability to use a range of scientific inquiry methods, including questioning; planning and conducting experiments and investigations based on ethical principles; collecting and analysing data; evaluating results; and drawing critical, evidence-based conclusions
- an ability to communicate scientific understanding and findings to a range of audiences, to justify ideas on the basis of evidence, and to evaluate and debate scientific arguments and claims.”

http://www.acara.edu.au/verve/_resources/Australian_Curriculum_-_Science.pdf

B. Geography: The draft Australian Curriculum: Geography, for example, emphasises that inquiry-based learning and teaching, and opportunities for student-led questioning and investigation should be provided at all stages of schooling. The curriculum should also provide opportunities for fieldwork at all stages, as this is an essential component of geographical learning. Fieldwork is any study undertaken outside the classroom, and could be within the school grounds, around the neighbouring streets, or in more distant locations. These teaching and learning methods should be supported by forms of assessment that enable students to demonstrate their ability to think geographically and apply geographical skills.

http://www.acara.edu.au/verve/_resources/2._Draft_F-12_Australian_Curriculum_-_Geography.pdf

C. History: The draft Australian Curriculum: History states that “Teachers describe, explain, model and monitor the process of historical inquiry so that students develop increasing initiative, self-direction and expertise. A variety of teaching and learning approaches and activities can be used, including teacher exposition, student debates, site visits, museum studies, use of historical narrative and hands-on activities such as the use and interpretation of authentic and virtual artefacts. An end result of historical inquiry should be a well-supported response to the question posed. Such a response could be in a variety of formats (ranging from historical models to essays) and of a complexity appropriate to the stage of development of the students involved. “

http://www.acara.edu.au/verve/_resources/Australian_Curriculum_-_History.pdf

Although your entry will focus on how you develop students’ inquiry skills, it will be important to keep in mind that each learning area emphasises that the Inquiry Skills strands should be taught in ways that integrate them with other strands such as Knowledge and Understanding. The guidelines for this entry do not prescribe how this should be done. This is matter for a teacher’s professional judgment, given the context in which they teach. However, your entry will

indicate how your teaching plan links to and makes a contribution to developing knowledge and understanding in other content strands.

Research on effective teaching practices

Standard 3 in the Australian Professional Standards for Teachers states that highly accomplished teachers *Plan for and implement effective teaching and learning*. Research shows that opportunities for students to exercise responsibility for purposeful collaborative group work is an effective method for ensuring learning goals such as inquiry skills are achieved. It also indicates that setting up and managing collaborative group work is an important teaching skill. (for example, see <http://www.teachingworks.org/work-of-teaching/high-leverage-practices>)

You will draw on and reference this research, illustrate how it has informed your approach to engaging your students purposefully in developing their inquiry skills by referring to two or three specific articles or research papers, and relate their findings to the way you have provided opportunities for students to work collaboratively and inclusively in developing their inquiry skills.

Requirements for Entry 3: Building Inquiry Skills

This entry invites you to demonstrate how you set up and engage your students in collaborative group work. Your Video segment, Artefacts and Written commentary will show how you establish collaborative and effective student investigations as part of an extended unit of work that enhances their inquiry skills and deepens their understanding of important concepts in your selected learning area.

The entry provides an opportunity to show how you establish clear guidelines for an investigation, and organizational routines, procedures, and strategies to support participation in collaborative investigations. It will show how you choose topics and questions that: encourage collaborative work; provide clear guidelines that enable groups to work semi-independently; and call for them to report individually and collectively on their investigations in ways that show the development of their inquiry skills.

This entry should be based on a different unit of work from those being used for your other portfolio entries.

Video recording

The video segment for your entry should be no longer than 15 minutes. It should provide you with the opportunity to demonstrate your professional knowledge and practice to best advantage. Guidance in making your video recording is provided in the *Supporting information*. [\[link\]](#)

You will probably make several video recordings at different stages in the unit of work. The video segment you choose may come at any stage in the investigation, however it should show several groups purposefully engaged in

their investigation, discussing ideas and procedures, listening to each other and using inquiry skills such as:

- identifying and posing questions,
- planning, conducting and reflecting on their investigation
- processing, analysing and interpreting evidence, and
- communicating findings

Teacher Artefacts

The artefacts that you submit must be relevant to this particular entry. Relevant artefact types might include: excerpts of your teaching plans; guidelines and materials you have prepared to support student inquiry; and resources constructed or drawn on in the unit of work.

Examples of teacher artefacts and guidance on the selection, formatting and submission of artefacts are provided in the *Supporting Information*. [\[link\]](#)

WRITTEN COMMENTARY

Your written commentary will assist assessors in making judgements about your accomplishment in relation to this entry. Your written commentary will consist of 6 components:

Section 1: School context (half a page)

An *outline* of the characteristics of the school and the wider community that provides an overall context.

- 1.1 Type of school, its location (rural/remote/urban), jurisdiction (State, Catholic, Independent), Level (e.g. primary, secondary, F-12); single/multi-campus, co-ed/single sex boys/girls *[use drop-down boxes]*.
- 1.2 Total school enrolment, year levels, number and size of classes.
- 1.3 Mandated curriculum requirements. (Note: your school/jurisdiction may mandate a variant of the Australian Curriculum. Please give relevant details if this is the case.)
- 1.4 Demographic composition and characteristics of the school and wider community, for example: cultural, ethnic and socio-economic backgrounds, diversity of language, integration of students with disabilities.

Section 2: Your students (one page)

- 2.1 What is the year level (or levels) and the number of students in your class? (For example: 26 students in Year 5 ages 9 to 11).
- 2.2 What features of your teaching setting and your students influenced how you prepared for the teaching shown in this portfolio entry? (For example, curriculum requirements, cultural and socio-economic backgrounds, students' language(s) spoken at home, levels of English proficiency, degree of literacy in first and second languages, the range of abilities of the students, the 'Special Needs' students and the structure of your teaching – such as team-teaching or single-teacher classroom etc.)

Include any other information necessary to help the assessor understand your students and the class.

- 2.3 *What particular challenges does your class present?* This might include, but is not limited to, a description of your students' skills and interests, background knowledge, their level of confidence and past experience.

Section 3: Research on effective teaching practice (1-2 pages)

Select a small number (2-4) of key research studies, and explain how this research has informed and influenced your approach to teaching science. Make specific reference to why and how you have applied the research findings in this field to the learning opportunities you have provided your students in the context of this entry.

The following questions provide a basis for your commentary on this research:

- 3.1 What new insights into the teaching science did you gain from this research?
- 3.2 What changes did you implement in your teaching practices as a result of reading this research?
- 3.3 To what extent has your teaching been strengthened by your learning from this research?

Section 4: Planning the unit of work (max. 3 pages)

Briefly describe how you went about planning the unit of work to develop students' inquiry skills, of which the video segment is a part; and the important conceptual understandings you wanted your students to gain as part of that unit of work.

- 4.1 What were the goals for this investigation sequence, including concepts, attitudes, processes, and skills you want students to develop? Why are these important learning goals for your students? What specific goals did you have for the activities, discussions or presentations seen in the videotape?
- 4.2 How did you plan to engage your students in developing inquiry skills and taking responsibility for their own investigation?
- 4.3 How did you plan to ensure that students engaged in collaborative group work that was purposeful and inclusive?
- 4.4 What was the nature of the work that students carried out prior to the activities and discussions featured on the videotape? What were the key questions being explored and how were the data collected? (It might be helpful to refer to the **Teaching materials** to help assessors understand what the students did prior to the discussion.)

Section 5: Analysis of the video segment (max. five pages)

Choose a video segment that gives you the opportunity to illustrate that you established clear guidelines for student inquiry, procedures to support collaborative investigations and reporting on their investigations in ways that show the development of their inquiry skills.

In this section, address the questions below. In citing specific evidence, it may be helpful for the assessors if you point them to particular sections in the videotape by referring to specific events in the videotape; for example, ‘when the girl in the green jumper pointed to the chart’.

5.1 How does what we see in the video segment fit into the lesson or teaching sequence as a whole? (i.e. what happened in the balance of the classroom time, either before or after the video was taken?) Why did you choose this segment of the lesson? Provide specific information about the purpose of the inquiry or investigations under discussion.

How does what we see in the video indicate that students had taken responsibility for their investigations?

How does what we see in the video segment illustrate that students were developing their inquiry skills (e.g. in clarifying questions, planning investigations, gathering and analysing evidence or data, or reporting findings?)

How does what we see in the video illustrate that you established a learning environment that encouraged all students to participate, share ideas and respect each other’s contribution?

How does what we see in the video illustrate other ways in which you supported students in their inquiry, or facilitated discussion to help them question or make sense of their data? Point to specific interactions and evidence in the videotape.

What evidence is there that students were also deepening their knowledge and understanding of relevant concepts as a result of their inquiries or investigations? Cite specific evidence from the videotape.

Section 6: Evaluation and Reflection (max. three pages)

In this section you should step back and review the unit of work as a whole, discussing the extent to which it was successful in achieving your goals and its implications for future teaching of inquiry skills. Address the following questions:

- 5.1 How did your knowledge of your students influence your approach to your teaching in this situation?
- 5.2 Which parts of the unit of work do you think were particularly effective in engaging your students purposefully in planning and conducting their investigation and developing their inquiry skills? Why do you think so?
- 5.3 Which parts of the unit of work do you think were particularly effective in developing their knowledge and understanding of related content and concepts?
- 5.4 How well did you achieve your overall goals for this unit of work?
- 5.5 What, if anything, would you do differently the next time if you were to pursue this approach next year with a different class? Why?

How will my entry be assessed?

[Type text]

ACER

[Type text]

Assessors will be looking for clear and convincing evidence that you have engaged your students in a collaborative investigation that strengthened their inquiry skills and deepened their conceptual understanding, as described in the Australian Curriculum. Your entry will show how you set long- and short-term learning goals for students referenced to the Australian Curriculum, how your students were responsible for planning, conducting and reporting their investigations, how the groups worked collaboratively, purposefully and inclusively and how your students progressed in their inquiry skills.

Further details about the assessment process can be found the Evaluation Guide for Portfolio Entry 3. ([Link](#))

Summary of requirements for Entry 3: Building Inquiry Skills

Components of the entry	Summary	Length
Video Segment	A continuous and uninterrupted segment providing evidence of groups of students actively engaged in their conducting or reporting on investigations.	15-20 min
Teacher artefacts	Materials developed by the teacher to interest, guide, or support students in their investigations.	4 pages
School context	Characteristics of the school and wider community that provide the context for your teaching.	1/2 page
Your students	Characteristics of your students and the opportunities and challenges they provide in developing their inquiry skills.	1 page
Written commentary:		
Provides a description, analysis, reflection and evaluation of how you have planned and implemented a unit of work that has engaged students in collaborative investigations that have strengthened their inquiry skills and deepen their conceptual understanding.		
Research on effective teaching practice in science	Demonstrates how educational research has informed your approach developing students' inquiry skills and understanding of science.	1 page max.
Planning the unit of work	Your plan for engaging students in collaborative investigations and developing their inquiry skills.	3 pages
Analysis	Points to and analyses evidence in the video segment that students are engaged in collaborative group investigations that are developing their inquiry skills and conceptual understanding.	5 pages
Evaluation and reflection	Provides a review the unit of work as a whole, discussing the extent to which it was successful in achieving your goals and its implications for future teaching of inquiry skills.	3 pages

Note: Total page length of the written commentary should not exceed 12 pages. When completed, each of the components will be uploaded to a website. Guidelines for uploading will be provided later.