

Aligning curriculum, pedagogies and assessment

An example of practice in Prep

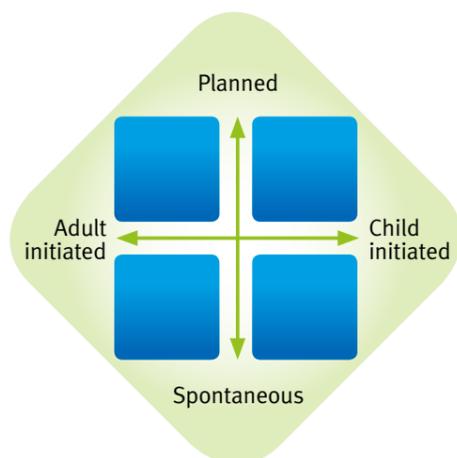
Project approach - 'Obstacle course engineers'

Australian Curriculum - Science

Sequencing teaching and learning

How do I teach it?

Achieving range and balance*



Approach

- Project approach

Practices

- Child initiated
- Whole class project
- Extended duration
- Specific focus

Strategies

- Planning sessions
- Modelling
- Drawing plans
- Construction

Characteristics of age-appropriate pedagogies*

- **Active**
- **Agentic**
- **Collaborative**
- **Creative**
- **Explicit**
- Language rich and dialogic
- Learner focused
- Narrative
- Playful
- **Responsive**
- **Scaffolded**

*See over for an explanation of approaches, practices and strategies, and the characteristics of age-appropriate pedagogies evident in this Example of practice.

Our students

Working together to ensure that every day, in every classroom, every student is learning and achieving

This is an example of how one teacher incorporated a **project approach** whilst implementing the *Australian Curriculum* Science (Physical sciences) learning area.

A school-based decision had been made to teach Physical sciences during Term Three. After having engaged with teacher made obstacle courses during outdoor learning time in Terms One and Two, two of the children expressed interest in designing, building and operating their own obstacle courses. The teacher realised that this interest had a strong link to the Science curriculum which was planned to be taught. A class meeting was held, during which the two children presented their idea to their classmates. The teacher decided to employ a project approach to allow the children to apply and explain their scientific knowledge of movement as they worked in pairs to design, construct, explain and manage their obstacle courses.

The project was planned with the children. The children's ideas drove the project (for example, 'We can draw plans and maps', 'Everyone will have a turn on the obstacle course'), while the teacher made the curriculum links explicit for the children, modelling what was expected, including drawing

an obstacle course plan/map using symbols, labels and a key, and using the scientific language of movement and position. The children then worked with a friend to design their obstacle course during indoor learning time.

During the first two weeks of this six week project, the teacher and children held twice-weekly planning sessions during indoor learning time to monitor the project, discuss any issues that the children might be having and share progress and successes. During this time, the teacher gathered work samples and annotated children's comments. On completion of all obstacle course plans, the children devised a voting system to determine the order in which the obstacle courses would be constructed during outdoor learning time.

With the support of the teacher aide, the children then took turns in constructing their obstacle courses. After construction, the children were responsible for explaining, modelling and monitoring the use of their obstacle courses, under the supervision of their teacher.

N.B. The children were carefully monitored by an adult at all times when constructing and then using their obstacle courses as per the school's Curriculum Activity Risk Assessment.

Assessment

What do my students already know? How well do they know it?

Assessment **for learning** - anecdotal observations, annotated artefacts (obstacle course plans/maps), transcripts of obstacle course explanations, photographs
 Assessment **as learning** - pre and post obstacle course discussions, peer feedback, teacher feedback
 Assessment **of learning** - C2C Unit 4 - Science - Year Prep (V3.0) Guide to making judgments

Making judgments

How will I know how well my students have demonstrated the Achievement Standard?

C2C Unit 4 - Science - Year Prep (V3.0) - Guide to making judgments

Applying (AP) - Explains how properties influence movement of familiar objects. Makes predictions relevant to questions. Explains observations and ideas about properties and movement. Shares observations and ideas using scientific language.

Making Connections (MC) - Compares movement of familiar objects.

Working With (WW) - Describes properties and movement of familiar objects. Responds to questions to make observations. Describes and represents observations and ideas. Shares observations using scientific and everyday language.

Exploring (EX) - (The C2C Guide to making judgments provides no task-specific descriptors for this phase of learning)

Becoming Aware (BA) - Identifies objects that can move. Responds to a question about an object. Makes observations about objects. Communicates using everyday language.

Feedback

What do my students already know? What do my students need to learn next?

The teacher used anecdotal observations, annotated artefacts (obstacle course plans/maps), transcripts of obstacle course explanations and photographs to inform feedback.

The feedback provided the children with progress on their learning to date (*Shelby, I noticed that you have been talking to your partner about how you will need to have ball bouncing on a hard surface when you construct your obstacle course*), and gave specific information about what to do next (*Remember to record that information on your obstacle course plan*).

Feedback was embedded throughout this project and included feedback from peers, teacher and teacher aide.



Curriculum intent

What do my students need to learn?

Australian Curriculum - Science

Foundation (Prep) Year Level Description

In Foundation, students observe and describe the behaviours and properties of everyday objects, materials and living things. They explore change in the world around them, including changes that impact on them, such as the weather, and changes they can effect, such as making things move or change shape. They learn that seeking answers to questions they pose and making observations is a core part of science and use their senses to gather different types of information.

Foundation (Prep) Year Content Descriptions (as applicable to this project approach)

Physical sciences

- **The way objects move depends on a variety of factors, including their size and shape (ACSSU005)**

Science as a Human Endeavour

- **Engage in discussions about observations and represent ideas (ACSI233)**

Science Inquiry Skills

- **Share observations and ideas (ACSI012)**

Foundation (Prep) Year Achievement Standard

By the end of the Foundation year, students describe the properties and behaviour of familiar objects. They suggest how the environment affects them and other living things. **Students share and reflect on observations, and ask and respond to questions about familiar objects and events.**

Characteristics of age-appropriate pedagogies evident in this example of practice

This project involved the children's physical engagement with the outdoor learning environment and a range of outdoor learning equipment. The children's initial idea of planning and constructing their own obstacle courses was enacted on, and planned for by the teacher. After designing and constructing their obstacle courses in pairs, the children were required to explain, model and then manage the obstacle courses during outdoor learning time. They worked in pairs throughout this project. The children were also asked to develop a schedule for timetabling turns as *Obstacle course engineers*, that was equitable for all members of the class. They were encouraged to consider new ideas to incorporate into their obstacle courses. The children were made explicitly aware of the requirement to describe the movement of familiar objects, make and represent observations, and share observations and ideas as per the unit summative assessment. The teacher was flexible in delivery of this curriculum content, responding to the children's interest by using the age-appropriate pedagogy of a project approach. The children's learning was scaffolded throughout the project through the use of modelling, questioning and receiving feedback from both their teacher and peers.

Although only seven of the characteristics of age-appropriate pedagogies have been highlighted here, opportunities for each of the eleven characteristics to be embedded were evident.

Characteristics of age-appropriate pedagogies

Active

Requiring physical and embodied engagement across all areas of learning. Whether this is indoors or outdoors, activity is essential in order to activate children's full potential. Their focus, concentration, motivation and self-regulation are enhanced through moving, doing and interacting within a range of learning environments.

Agentic

Ensuring that children have voice in their learning. Their ideas and interests initiate, support and extend learning possibilities in order to build on their real-world understandings and experiences.

Collaborative

Being social and co-constructed. Children and educators work together to identify ways of learning and understanding through sustained shared thinking and action.

Creative

Inviting children to consider "What if?" They encourage investigation, inquiry and artistry to explore new possibilities and ways of thinking.

Explicit

Making conscious for both learner and educator the relationships between the learning purpose and processes employed and the skills and understanding these processes support.

Language rich and dialogic

Ensuring that learning occurs in environments where rich language is modelled and employed by both children and educators. Meaningful dialogues between children, as well as between children and educators, are created to support thinking, learning, engagement and imagination.

Learner focused

Recognising that all children learn in different ways and that learning is a highly individualised process. They also acknowledge differences in children's physical, intellectual, cultural, social and personal experiences and perspectives.

Narrative

Acknowledging the important role that personal, written, oral and digital stories play in all our lives. They support both the production and comprehension of narratives through active processes, especially play.

Playful

Encouraging children to make connections through imagination and creativity to explore alternate worlds and ways of thinking. These worlds, not bounded by reality, offer the freedom children need to innovate and enact new possibilities.

Responsive

Incorporating a willingness to be flexible, to ensure that learning is always child, context, content and discipline appropriate. To achieve this, educators will balance opportunities for structure and spontaneity, open-ended and specific tasks, and child-led and educator-led learning.

Scaffolded

Including such actions as modelling, encouraging, questioning, adding challenges, and giving feedback, provide the support needed to extend children's existing capabilities. Effective scaffolding by both educators and other children provides active structures to support new learning; it is then progressively withdrawn as learners gain increasing mastery.

Approach - Project

Practices*

Child initiated

After exploring different ways in which their bodies and objects could move, two of the children asked if they could make an obstacle course for the other children.

Whole class project

As this project occurred within a Science unit of work that was a school-based requirement and linked to an assessment task, the project was undertaken by the whole class.

Extended duration

This unit of work was being implemented during Term Three. The *Obstacle course engineers* project ran from weeks four through to nine, after the children expressed interest in building their own obstacle courses in week two. This six week engagement allowed for a complete plan/do/

reflect cycle by the children. It also allowed the teacher time to plan for this child-initiated project, including negotiating access to the outdoor learning space. Concluding in week nine allowed the teacher time to collate all of the evidence of learning/data to make a judgement about the children's learning.

Specific focus

The focus of the project was specific in that it was linked to a C2C unit of work and assessment task. The children were made explicitly aware of the required learning outcomes of the project and what was expected of them.

**These are examples of the Practices implemented, and not intended as a finite list.*

Strategies*

Planning sessions

The teacher and children held twice-weekly planning sessions during indoor learning time to monitor the project, discuss any issues that the children might be having and share progress and successes.

Modelling

The teacher modelled each step of the project including:

- drawing an obstacle course plan using symbols, labels and a key
- using the scientific language of movement and position
- using a plan to construct an obstacle course
- problem solving when the plan doesn't work
- giving clear directions to peers about using the obstacle course
- modelling the use of the obstacle course to peers
- reflecting on the success of the obstacle course.

Drawing plans

The teacher created a six week plan with the children including *Must Dos*, *Can Dos* and timelines.

Construction

The children were able to participate in real-life construction of their obstacle courses. This involved conversations about health and safety, physical activity, problem-solving, teamwork and regulatory oral language.

** These are examples of the Strategies implemented, and not intended as a finite list.*

Questions for teacher-based reflection

- How is an array of effective pedagogies ensured?
- How are holistic development and academic goals balanced?
- How is a balance between child-initiated and adult-initiated learning experiences fostered?
- How are positive personal relationships with children nurtured?
- How is playfulness in learning and teaching interactions embedded?
- How are high-quality, verbal interactions encouraged?
- How are interactions to scaffold cognitive challenge and develop higher order thinking incorporated?
- How are real-life, imaginary, spontaneous and planned experiences integrated?

Questions for school-based reflection

- How is the provision of training, resources and support considered?
- How are the professional demands on teachers, and the lead-in time required to establish new approaches, recognised and supported?