Government of Western Australia
School Curriculum and Standards Authority

Western Australian Curriculum

Science

Fair test investigation template

Pre-primary

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

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Disclaimer

Any resources, such as texts and websites, that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandated or that they are the only resources relevant to the course. Teachers must exercise their professional judgement as to the appropriateness of any resources they may wish to use.

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Investigations in Science

Science investigations follow a scientific process of answering a question, exploring an idea or solving a problem. Investigations require activities including planning, collecting and interpreting data and forming a conclusion.

Advice to teachers

The Science inquiry sub-strands listed below describe the skills students are to be taught in each phase of schooling from Pre-primary to Year 10:

- Questioning and predicting
- Planning and conducting
- Processing, modelling and analysing
- Evaluating.

The Science inquiry content is banded by phase of schooling.

Children are required to communicate their findings from investigations to others. The Communicating sub-strand describes the appropriate communication skills for each phase of schooling.

This investigation template has been developed for the early childhood phase of schooling (Pre-primary) to guide children through the investigation process.

The choice of approach taken when conducting investigations will depend on the type of investigation, the context and purpose of the investigation. In the primary years, science investigations mostly involve fair testing, the changing of one variable and the measuring of another.

In this phase of schooling investigations are guided and modelled by teachers, with some input from the children.

The Principles and Practices of the *Early Years Learning Framework*, as well as the Learning Outcomes, should underpin and guide all learning experiences and activities in Pre-primary. Science investigations provide ideal opportunities for children to explore their ideas and curiosities through a hands-on approach using concrete materials.

Teachers may choose to:

- use this template as a guide only for structuring investigations
- complete the template as a whole-class group, using teacher modelling to guide responses
- use a combination of whole-class and individual work to complete an investigation template
- allow for children to draw, write or have their responses scribed by an adult
- provide simple sentence stems to support children when questioning, predicting and explaining the results using verbal cues as required.

Using the template

The annotated template exemplifies an investigation based on the Western Australian Curriculum: Sciences, Physical sciences in Pre-primary:

- The way objects move depends on factors, including their size, shape, material and the force applied

The annotated template exemplifies one approach to teaching an investigation in Pre-primary; investigations may be presented in many ways. The investigation should be adjusted to meet the learning needs of the children, and the content being taught.

Teachers may use the template to facilitate a whole class activity, small groups, and/or individual teaching and learning opportunities.

Fair test investigation template Name_____

1. Question

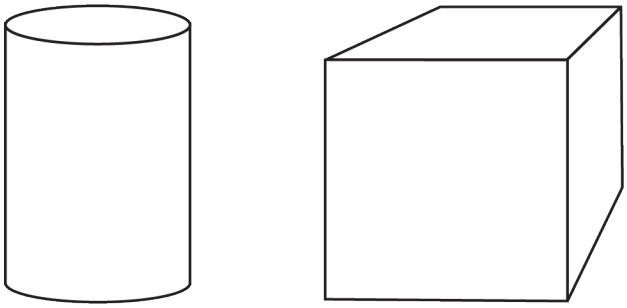
In the example a question is supplied 'Which block will roll the furthest?'. Teachers may choose to keep the question to supply to children, model how to **pose a question** or ask children to work in small groups to **pose a question**.

Which block will roll the furthest?

2. Prediction

Children select by circling one of the two options provided. Teachers may change or take away the options, choose as a class, take a class vote or ask children to point to the object they **predict** will roll the furthest.

Draw a circle around the block you **predict** will roll the furthest:



3. Prediction

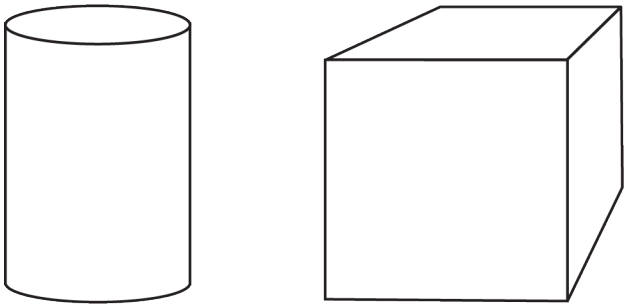
The rationale facilitates a class discussion, verbal predictions or scribing by an adult to capture children's thoughts and ideas. Encourage children to make connections based on their prior knowledge and shared experiences.

Why do you think that block will roll the furthest?

4. Results

In Pre-primary, children are required **to make observations using comparisons**. The template exemplifies one way to do this. However, guided conversations will be necessary to ensure children are making connections between their experience and scientific understanding. These conversations provide opportunities **to represent and discuss observations, identify patterns** and **make comparisons between predictions and results**. These conversations could be recorded in a variety of ways, such as photographs, scribing, videos, drawings and diagrams.

Colour in the block that did roll the furthest.



How do you know that block rolled the furthest?

5. Plan for follow-up experiences or tasks such as:

- conducting further tests with new materials to **determine patterns**, e.g. all the round items rolled further
- pose 'I wonder' questions to extend and support children's thinking, e.g. I wonder what would happen if we added …?
- record and/or share the learning process, e.g. in a class big book, photo displays, on communication platforms
- provide opportunities for **self-initiated investigation** through play. For example, a variety of three-dimensional objects and ramps in the construction area.

Note: words in bold indicate direct links to **Science inquiry** curriculum.

Fair test investigation template Name_____

Question

Prediction

Rationale

Results