Government of Western Australia
School Curriculum and Standards Authority

Western Australian Curriculum

Science

Fair test investigation template

Years 1–2

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.

Science investigations

Investigations in science follow a scientific process of answering a question, exploring an idea or solving a problem. Investigations require activities that include 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 (Years 1–2) to guide children through the investigation process.

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

In this phase of schooling, investigations are guided and modelled by teachers, with input from the children. To find more information on investigations for each year level, look at the examples that accompany the Science inquiry strand on the School Curriculum and Standards Authority website.

The Principles and Practices outlined in the *Early Years Learning Framework* should underpin any activities and learning opportunities in Years 1 and 2. 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 for structuring investigations
- complete the template as a whole-class group, using teacher modelling to guide responses
- use a combination of whole-class, small group 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: Science, Biological sciences in Year 2:

- Plants and animals have life cycles through which they grow, change and have offspring

This example illustrates an investigation that would continue over several weeks. During the investigation, children would continue to make observations and engage in guided discussions about the growth of plants. Children may participate in additional science activities to further support their understanding of the science content.

The annotated template exemplifies one approach to teaching an investigation in Years 1–2; 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, 'When we change the type of seed, which will germinate the quickest?'. The underlined words denote sections that could be omitted for children to fill in with guidance. Teachers may supply the complete question, model how to **pose a question**, ask children to work in small groups or independently where appropriate.

When we change the type of seed, which will germinate the quickest?

2. Prediction

A sentence stem has been provided to guide children to make a relevant prediction. Teachers could offer options for children to choose from, remove the sentence stem, create a class prediction, scribe or use digital devices to aid in making a prediction. Encourage children to attempt to make a connection based on their prior **knowledge and experiences** to explain their ideas.

I think the _____ seed will germinate the quickest because …

_____

_____

3. Observations

This exemplar allows children to **make and record observations**, by drawing or taking an image of what they see at the beginning and end of the investigation. Children may add appropriate labels once their drawing or image is ready.

After planting Draw what your seeds look like	**After three weeks** Draw what your seeds look like

4. Results

Once the investigation is complete, children are given the opportunity to **sort and order** their **data**. This may be through diagrams, provided tables, pictures or physical objects.

The _____ seed germinated the quickest.

Draw and label the seeds below in order of germination

5. Facilitate a discussion to **compare** children's **observations to their predictions**. Guide children to make connections between the data gathered in their investigation and scientific understanding. Encourage children to communicate their findings using both **everyday and scientific vocabulary**.
6. Plan for follow-up experiences or tasks, such as:
   - conducting further tests with new materials to determine patterns; for example, exploring similarities between insect and plant life cycles
   - posing 'I wonder' questions to extend and support children's thinking; for example, I wonder what would happen if we grew …?
   - applying their scientific understanding of plant life cycles and offspring to their local context; for example, a nature walk around the school to compare plants
   - providing opportunities for self-initiated investigation through play; for example, role-play opportunities such as a garden centre or zoo.

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

Fair test investigation template Name _____

Question

When we change _____ what will happen to _____ ?

Prediction

I think _____ because …

_____

_____

_____

Observations

Before	After

Results

What did you notice?

_____

_____

_____

Draw and label your results.