



# SACE Agriculture Design & Deconstruction Investigations

Students will use a horticultural context to develop the skills of deconstructing a topic and designing a scientific investigation (Assessment Type One Agricultural Reports).

Locate an almond, stone fruit or citrus tree and encourage students to observe its shape, structure and components. Brainstorm issues and decisions that horticultural producers face in managing their tree crops to identify possible investigation topics.

**Suggested topics that could actually be investigated:**

- Yield and quality of fruit on different orientations of the tree (eg north v south, east v west)
- Reliability and consistency of irrigation dripper output rates
- Insect distribution across the canopy

**Suggested topics that could be deconstructed but logistics would prevent from being carried out:**

- Density of tree crop plantings (trees per hectare)
- Soil amendments
- Bee support strategies
- Pruning architecture
- Irrigation methods
- Spray patterns within the tree canopy (using water sensitive paper to detect)
- The impact of orchard hygiene on pest and disease levels
- Location & density of pollination hives
- Flower colour and pollination rates
- Mechanical versus hand harvesting
- Netting types and structures

Assessment is **FORMATIVE** and addresses the specific feature **Investigation, Analysis, and Evaluation (IAE1) Deconstruction of a problem and design of an agricultural investigation.**

A	B	C	D	E
Critically deconstructs a problem and designs a logical, coherent, and detailed agricultural investigation.	Logically deconstructs a problem and designs a well-considered and clear agricultural investigation.	Deconstructs a problem and designs a considered and generally clear agricultural investigation.	Prepares a basic deconstruction of a problem and an outline of an agricultural investigation.	Attempts a simple deconstruction of a problem and a procedure for an agricultural investigation.

## CHECKLIST

Students should produce the following sections:

- DECONSTRUCTION:** the breakdown of the topic and development of the design – four pages maximum; no set format
- INTRODUCTION** with relevant agricultural concepts, the focus question and a hypothesis and variables
- MATERIALS/APPARATUS**
- METHOD**
- SAFETY AND/OR ETHICAL RISKS**