YEAR 4 - SCIENCE

Assessment Rationale — Build an Ecosystem (Biological sciences)

Teacher-facing assessment rationale for the Biological sciences summative task 'Build an Ecosystem'. Maps each part of the task and each rubric criterion to the specific WA Curriculum (SCSA) Year 4 Science content descriptions and achievement-standard language it assesses, and explains why the task design is valid and fair. For teacher/moderation use, not given to students.

This document shows how the summative task **Build an Ecosystem** assesses the mandated Western Australian Curriculum (SCSA) Year 4 Science content, and explains the reasoning behind the task design and marking key. It is for teacher planning and moderation and is not given to students.

Curriculum content assessed

The task is drawn directly from the Year 4 Science curriculum. It provides evidence against the following mandated content descriptions:

Strand / sub-strand	Content description (SCSA Year 4)
Science understanding — Biological sciences	"Producers, consumers and decomposers have roles within an ecosystem and interact in ways that can be represented by food chains."
Science inquiry — Communicating	"Communicate ideas using scientific vocabulary."
Science inquiry — Collaborating and applying	"Use science knowledge to propose explanations for observed phenomena and solutions to problems."

Alignment with the Year 4 achievement standard

The relevant extract of the Year 4 achievement standard states that students "represent the relationships between consumers, producers and decomposers using food chains" and "use science knowledge to propose explanations." Each part of the task is designed to elicit exactly this:

Task part	What it asks	Achievement-standard / content link
Part A — Draw your ecosystem	Construct an ecosystem with producers, consumers and a decomposer, joined by correctly directed food-chain arrows.	"Represent the relationships between consumers, producers and decomposers using food chains." Directly assesses the Biological sciences content description.
Part B — Name the roles	Classify each living thing as producer, consumer or decomposer.	Understanding of the roles within an ecosystem; use of scientific vocabulary.
Part C — Explain the relationships	Explain the flow of energy along a chosen chain (from the Sun) and the role of decomposers.	"Use science knowledge to propose explanations"; communicating using scientific vocabulary.
Part D — What if it changed?	Predict and explain the flow-on effects of removing one living thing.	"Use science knowledge to propose explanations for observed phenomena"; applying understanding of interdependence.

How the marking key reflects the standard

The four rubric criteria and their weightings map to the balance of the content being assessed. The two criteria carrying the most weight — *Roles* (30) and *Food chains and the flow of energy* (30) — target the core Biological sciences content description, because representing the relationships with food chains is the mandated understanding. *Ecological relationships and change* (25) assesses the "propose explanations" inquiry content through Parts C–D. *Communication and scientific vocabulary* (15) assesses the "communicate ideas using scientific vocabulary" content across the whole response. The High / Sound / Limited descriptors mirror the language of the SCSA judging standards so that on-balance judgements are defensible and can be moderated across a teaching team.

Why this task is valid and fair

- **It matches how the content was taught.** Students build food chains (Lesson 2), extend them into webs and meet decomposers (Lesson 3), then synthesise this into a whole ecosystem (Lesson 4) — so the task assesses learning that has been explicitly developed, not assumed.
- **It allows every student to show what they know.** The diagram (Part A) lets students who are still developing written fluency demonstrate understanding visually, while Parts C–D give able students room to reason and extend. This supports the diversity of learners (consistent with the ABLEWA-informed adjustments planned for the unit).
- **It targets a known misconception.** The arrow-direction requirement in Part A directly checks the common Year 4 error of treating a food chain as "what can beat what" rather than the

direction energy flows.

Cross-curriculum priorities. The learning that leads into this task engages **Sustainability** (how the parts of an ecosystem depend on one another and why balance matters) and **Aboriginal and Torres Strait Islander histories and cultures** (First Peoples' knowledge of Country and of local species, and caring for Place). Students are encouraged to build their ecosystem from a local Australian habitat, which keeps the task authentic to the Western Australian context.

Moderation note. Collect a small set of responses across the range and annotate them against the descriptors before marking the class set, so the meaning of "High", "Sound" and "Limited" is agreed and applied consistently.