Balance Busters Year 4 Day Visit

"Something strange is happening in the ecosystem..."
A local fish population is mysteriously declining. As trained Balance Busters, your mission is to solve The Case of the Vanishing Fish. But this isn't just about one species — it's about uncovering how the whole food chain works, who depends on whom, and what happens when just one part of the system starts to fail.
Your investigation will take you from the muddy shallows to the tree canopy as you:

- Pump for yabbies and examine their role in freshwater food chains
- Cast a net and fishing line to survey fish species and identify energy pathways
- Dissect a fish to explore internal adaptations and feeding structures
- Observe ant colonies and decomposers at work
- Play the Web of Life game to uncover interdependence
- Construct real food webs from evidence you collect in the field
- Take on a sustainable fishing challenge to test your decision-making as ecosystem managers

You'll explore the environment from the bottom of the food chain to the top, discovering producers, consumers, and decomposers along the way. Only by understanding the full picture will you solve the mystery — and help restore balance to the web of life.

CURRICULUM LINKS

Science Understanding
Biological Science - AC9S4U01 - Describe how living things depend on each other and the environment to survive, including through food chains.

Science as a Human Endeavour
Use and influence of science - AC9S4H01 - Describe how science knowledge helps people to care for environments.
Students engage in sustainable fishing simulations and habitat care discussions, applying science knowledge to explore human impacts and sustainable resource use in ecosystems.

Science Inquiry Skills
Questioning and predicting - AC9S4I01 - Pose questions to identify and explain relationships in food chains.
Planning and conducting - AC9S4I03 - Make and record observations of living things and their interactions.
Communicating - AC9S4I06 - Communicate scientific ideas using appropriate terminology.

GENERAL CAPABILITIES

Aboriginal & Torres Strait Islander Histories & Cultures
A_TSICP1 - First Nations peoples' deep connection to Country and sustainable custodianship of land and water.
Acknowledge First Nations Australians' deep connection to Country and traditional knowledge of ecosystem management and interdependence.

Sustainability Systems

- *SS1 - Interdependence of life through Earth's systems.*
- *SS2 - Sustainable patterns of living and resource use.*

Investigate how all life forms are connected through Earth's systems and explore sustainable practices for preserving healthy environments.

GENERAL CAPABILITIES

Critical and creative thinking
Inquiring, Generating, Analysing, Reflecting

- *Students explore interdependence in aquatic and terrestrial ecosystems by identifying producers, consumers, and decomposers through activities such as yabby pumping, cast netting, organism behaviour investigations, and a food web game.*
- *Fish dissection deepens understanding of external and internal features related to feeding and survival, reinforcing an organism's role in the food chains,*

Personal & Social Capabilities
Self Awareness, Self –management, Social Awareness, Social Management
Work cooperatively in field-based investigations and reflect on actions that support environmental sustainability.

Ethical Understanding
Consider the impact of human activity on ecosystems and explore ethical responsibility in sustainable fishing and habitat care.

CARA's

·Walking on uneven surfaces
·Science activities
·Animal Observation
Fishing & netting
Animal handling

LEARNING INTENTIONS

WHAT... are we learning?
Students, in the role of Food Chain Explorers, will:

- Investigate and identify producers, consumers, and decomposers in aquatic and terrestrial food chains
- Describe how living things depend on each other and their environment for survival

WHY... should we be Food Chain Explorers?
Food Chain Explorers develop scientific understanding to appreciate ecosystem balance and sustainability. They learn how human actions affect living things and how to care for natural environments responsibly.

HOW... will you know you're successful?

- Identify organisms at different levels of the food chain in freshwater and terrestrial habitats
- Construct simple food chains and explain the connections between living things
- Recognise the role of sustainable practices in protecting ecosystems

BIEEC PEDAGOGY

Our student-centred learning approach focuses on hands-on, interactive activities that engage students and encourage exploration. By allowing students to take ownership of their learning and set personal goals, they develop independence and critical thinking skills. Teachers act as mentors, supporting students by asking questions throughout their learning journey to assist with building a lifelong love of learning.

SAMPLE ITINERARY

****Please note this program must be run on a 12pm low tide day****

Please Note: This is a SAMPLE itinerary and your Program Manager will forward your individual program shortly.

"Empowering Extraordinary Minds"

Time	Activity
Welcome	Students arrive at the Boyne Island Environmental Education Centre and are met by BIEEC teachers. Introduction to BIEEC and the *Balance Busters* program. Followed by goal setting, their call to action for today, icebreakers and a fruit break.
Morning Session	**Activity 1** Balance Busters split into two groups and participate in food web games for understanding – rotation of 3 games
Morning Tea	toilet break / sunscreen / refill water / insect repellent
Middle Session	**Activity 2** - Put on your gloves and step into the role of a real balance buster as we dig deeper (literally!) into the food web: • **Dissect a fish** to explore its internal features and discover what it eats and how it survives • **Investigate microplastics** found in aquatic animals — what are they, and how do they affect the food chain? • **Construct a real food web** based on your evidence, showing who eats who, and how energy flows through the system
Lunch	toilet break / sunscreen / refill water / insect repellent
Afternoon Session	**Activity 3** -Grab your wet boots and head into the wild! This is your chance to get wet, muddy, and hands-on as you search for clues in the field: • **Pump for yabbies** and learn their role as prey and predators in the freshwater ecosystem • **Sift through benthic samples** to discover tiny organisms living in the mud and how they fit into the food chain • **Sustainable fishing, cast nets and drag nets** to survey fish and macroinvertebrates in the shallows • **Use a plankton trawl** to collect microscopic producers and early links in the food chain You'll be working from the bottom up — starting with producers like algae and ending with top predators. Every sample helps complete the puzzles.
	Debrief and Reflection Reflection: Students communicate their findings and share ideas about their experiences and how they connected with country and how to actively care for country
Farewell	Students depart BIEEC

Students and adults will need:

- Closed in shoes
- spare pair of wet shoes (muddy activities)
- spare change of clothes
- Sun-safe clothing and hat
- Sunscreen and insect repellent already applied
- Water bottle
- ·Morning tea and lunch (litter-free)

Litter-free Lunch: We encourage students and staff to pack a litter-free lunch. Everything in it can be re-used, composted or recycled. Drinks are brought in refillable bottles.

www.boyneislandeec.eq.eu.au