

Year 11-12 Example Earth and Environment Science Depth Study Inquiry Questions

This document provides example questions that can be used to guide senior students (Years 11–12) during an in-depth site study at the Kimbriki Resource Recovery Centre. Teachers may use this as a planning resource to frame learning outcomes, while students can use it for revision, reflection, and deeper investigation.

Teacher Pre-Prepared Assessment Questions

These are examples of the types of extended-response questions teachers may use to assess students' understanding of waste management, sustainability and resource recovery following the site visit:

- **Evaluate the sustainability of Kimbriki Resource Recovery Centre's overall approach to waste management and resource recover.** In your response, consider environmental, economic, and social sustainability, and give specific examples to justify your evaluation.
- **Analyse how modern landfill design reduces environmental risks.** In your response, discuss leachate management as well as at least one other environmental protection strategy used at Kimbriki.
- **Evaluate the importance of demand for recycled and recovered materials in determining the long-term sustainability of waste management systems.** Refer to materials recovered at Kimbriki to justify your response.
- **Analyse how resource recovery contributes to more sustainable waste management compared to traditional landfill disposal.** Use examples from Kimbriki to explain how recovering materials supports long-term sustainability.

Student Questions Commonly Asked During the Excursion

These are real questions from students that highlight areas of interest and potential teaching moments during a site tour:

- What environment was this area before it became a tip?
- Do they put creatures in the compost piles?
- What causes the steam in the windrows?
- When all the landfill areas run out in Sydney, where will it all go?
- How do we use gas to convert to energy?
- How many tonnes of vegetation/concrete/metal do you get a year?
- How do you break down e-waste?
- Where does the water naturally flow in this environment?
- What is the name for the waste that is allowed to be landfilled at Kimbriki?
- How much does it cost to dispose of different types of waste?
- What are the fans at Australian Native Landscapes for?
- How does Kimbriki generate revenue?
- How much leachate can the leachate treatment plant deal with?
- Do you think the government will start to mandate change?
- When do you think the site will fill up?
- Has the water ever overflowed in the leachate dam?
- How do you handle grease in compost? Can you put it in?
- What is the methane used for?
- Is all the methane captured?