



Tracing Waste in Ipswich: From Raw Material to Recovery

Purpose of This Investigation

In this activity, you will investigate the life cycle of a common product used in Ipswich and explore how different disposal choices affect the environment. You will examine how products move through a linear economy (use → waste) and how they could fit into a circular economy (reuse → recovery → regeneration).

Key Concepts

- **Life Cycle Analysis (LCA):** Examining a product's environmental impact from raw material extraction through to disposal
- **Circular Economy:** A system where materials are reused, recycled or composted instead of being thrown away
- **Waste Road Map:** A visual flow chart showing a product's journey from creation to disposal

The Investigation

Step 1: Choose Your Product

Select one product commonly found in Ipswich. You may choose from the examples below or select your own:

- ☐ Takeaway coffee cup
- ☐ Reusable coffee cup
- ☐ Food container (plastic or cardboard)
- ☐ Garden waste item (leaves, grass clippings)
- ☐ Another everyday item: _____



Step 2: Create Your Waste Road Map

You will create a **flow chart (Waste Road Map)** tracing your product through each stage of its life cycle.

Your flow chart can be drawn:

- On the back of this worksheet
- On a separate page
- Digitally (if instructed)

Your Waste Road Map must include:

1. **Raw Material Extraction**

- What materials are used?
- Where do they come from?
- How are they sourced?
- What type of energy is used to source them and what type of waste does it produce?
- Where are they transported for manufacturing?
- How are they transported and what type of waste does the transport produce?

2. **Manufacturing**

- How is the product made?
- Does this process use energy, water, or chemicals to manufacture?
- What waste materials are produced?

3. **Transport & Distribution**

- How is the product transported to Ipswich?
- What type of energy is used for the transport?
- What type of waste does the transport produce?

4. **Use**

- How is the product used by consumers?
- Is it single-use or reusable?

5. **Disposal in Ipswich**

- What happens after use?
- Does it go in an Ipswich City Council bin or is it managed another way?



Step 3: Linear vs Circular Economy

Linear Economy

Describe what happens to your product in a linear system (use → dispose):

Circular Economy

Describe how the same product could be part of a circular economy:

Step 4: Comparison Task

Compare the Environmental Impact

Use the table below to compare a single-use version of your product with a reusable, recyclable or compostable alternative.

Feature	Single Use Option	Circular Option
Raw Materials Used		
Number of uses		
Waste generated		
End-of-life outcome		



Step 5: Reflection & Evaluation

Answer the questions below in full sentences

1. Which stage of the product's life cycle do you think has the greatest environmental impact? Why?

2. How does correct sorting into Ipswich waste streams improve environmental outcomes?

3. What changes could individuals or households make to support a circular economy in Ipswich?

Extension (Optional)

Choose one:

- Redesign the product to reduce waste
- Suggest a simple behaviour change campaign to reduce waste
- Propose a council or community initiative that supports circular economy principles

Success Criteria

You have successfully completed this task if you can:

- ☐ Clearly trace a product's full life cycle
- ☐ Explain differences between linear and circular systems
- ☐ Accurately identify local waste streams
- ☐ Reflect on environmental and behavioural impacts