



EDGE THINKING -EDGE THINKING + CIRCULAR ECONOMY

Quick Lesson Starters: Minerals, Metals & Devices

(5–10 mins)





E – Ethical Edge: “What’s Inside Your Phone?”

Starter Prompt

Ask learners to imagine opening a phone and tipping out all the minerals inside.

Questions:

Who mined these materials?

Under what conditions?

Is it ethical to replace devices frequently?

EDGE Focus

Ethics includes human rights, labour safety, and responsibility for materials we rely on daily.





D – Design Edge:

“Why Are Devices So Hard to Repair?”

Starter Prompt

Show an image of a sealed phone or laptop.

Ask:

What design choices make repair difficult?

Who benefits from non-repairable design?

How would circular design change this?

EDGE Focus

Design decisions determine whether metals stay valuable or become waste.





G – Global Edge: “The Unequal Map of Minerals”

Starter Prompt

Display a world map showing mineral-rich regions.

Ask:

Which countries extract most minerals?

Which countries depend on imports?

Is the current system fair?

EDGE Focus

Global dependence makes circular use essential, especially for countries without natural supplies.





E – Environmental Edge: “The Scarcity Reality”

Starter Prompt

Ask:

What happens to land, water, and ecosystems when metals are mined?

What happens if we run out?

Then:

Is recycling metals an environmental choice or a necessity?

EDGE Focus

Environmental limits demand careful stewardship of finite resources.





Devices Edge: “Replace or Recover?”

Starter Prompt

Ask:

When a device is replaced, what happens to its metals?

Which metals are most valuable to recover?

Then:

Is e-waste actually a future mine?

EDGE Focus

Introduces the idea of urban mining and material recovery.





EDGE Combo: “A Country With No Minerals”

Starter Prompt

Give learners this scenario:

“Your country has no metal or mineral resources at all.”

Ask:

How would you secure materials ethically?

Why would circular economy systems be vital?

What risks exist without them?

EDGE Focus

Circularity becomes strategic survival, not just sustainability.





Design for Circular Metals:

“What If Devices Had to Come Back?”

Starter Prompt

Challenge learners:

“Every electronic device must be returned to the maker.”

Ask:

How would companies design differently?

Would devices last longer?

Would consumers buy fewer, better products?

EDGE Focus

Extended Producer Responsibility and smarter design.





Ethical Global Starter: “Who Carries the Risk?”

Starter Prompt

Ask:

Who handles the toxic parts of e-waste?

Who benefits from the devices?

Then:

How does a circular economy protect people as well as resources?

EDGE Focus

Ethics includes protecting vulnerable communities.





Environmental Reality Check:

“Metals Don’t Disappear”

Starter Prompt

Ask:

Can metals be destroyed?

If not, where do they go when
we throw them away?

Then ask:

Is landfill a design failure?

EDGE Focus

Metals are permanently valuable
— waste is a system flaw.





Final Provocation: “Is Circular Metals
Use a Global Justice Issue?”

Starter Prompt

Statement on the board:

“Countries without mineral resources
depend on circular economies.”

Learners respond:

Agree / Disagree

One EDGE-based reason

EDGE Focus

Positions circular economy as ethical,
global cooperation, not just
environmentalism.

