A Phone's Footprint

Trace the global connections and trade-offs behind a familiar device.

SS24.CWI.10 "Explain how scientific and technological changes impact the worldwide economy and the process of globalization. 10a Evaluate the positive and negative impacts of scientific and technological changes on society and on the environment."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two ways technology connects phone production or sales across borders, circle one social benefit and one social harm, and number two environmental effects with a + or – beside each.

The World Inside a Phone

1. A phone can cross borders long before its owner sends a message. Its design may come from a company in the United States, its chips from factories in Taiwan or South Korea, and its battery materials from mines in several countries. Cobalt, used in many rechargeable batteries, is mined in the Democratic Republic of the Congo. Assembly often takes place in countries such as China or Vietnam. Digital design files, specialized machines, and container shipping help firms coordinate these steps. This network creates jobs and trade, but a flood or factory shutdown in one place can delay sales elsewhere.

2. Better chips and faster mobile networks make phones useful for more than calls. A market seller can advertise to customers across borders and receive digital payments, reaching buyers who once lived too far away. Families can share news instantly, and students can reach learning materials online. These gains are not shared equally: data plans and devices cost money, and some places lack reliable service. At the same time, pressure to make phones cheaply and quickly can leave workers with low pay or unsafe conditions if protections are weak. A technology can expand opportunity while deepening an existing divide.

3. Making a phone also uses energy, water, and mined materials. Mining can damage habitats or pollute water when safeguards are poor, while discarded phones add to electronic waste if their materials are not recovered. Newer chips may use less electricity for a given task, and repairs can keep a working phone in use longer. Yet lower energy use per task does not guarantee lower total use if people buy more devices or use them more often. Governments and companies can require safer mining, protect workers, and support repair and recycling. Each choice shifts costs and benefits across communities and borders.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do the technologies described in the first paragraph connect countries in the phone economy? Explain one benefit and one risk of that connection.

2. How can faster mobile networks expand a market seller's opportunities, and why might some sellers miss out?

3. Why might a newer chip reduce electricity use for one task without reducing total electricity use?

4. Evaluate one benefit and one harm phone production can bring to workers or communities.

3 YOUR TURN

Your own words

Your town library can buy new or refurbished phones for a lending program. In five or six sentences, recommend one option and explain an effect on global trade or jobs, a social benefit and drawback, and an environmental benefit and drawback; include a practical safeguard.

ANSWER KEY

A Phone's Footprint

HIGH SCHOOL · SS24.CWI.10

PART 1 · READ AND MARK

Underline two ways technology connects phone production or sales across borders, circle one social benefit and one social harm, and number two environmental effects with a + or − beside each. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do the technologies described in the first paragraph connect countries in the phone economy? Explain one benefit and one risk of that connection.	**Digital files, specialized machines, and shipping help firms coordinate production across countries. This creates jobs and trade, but a shutdown in one country can delay sales elsewhere.**
2	How can faster mobile networks expand a market seller's opportunities, and why might some sellers miss out?	**Sellers can advertise across borders and receive digital payments from distant buyers. Some cannot afford a device or data plan, or lack reliable service.**
3	Why might a newer chip reduce electricity use for one task without reducing total electricity use?	**A newer chip may use less electricity per task, but total use could still rise if people buy more devices or use them more often.**
4	Evaluate one benefit and one harm phone production can bring to workers or communities.	**The production network creates jobs and trade. If worker protections are weak, pressure for cheap, fast production can lead to low pay or unsafe conditions.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I recommend refurbished phones for the library's lending program. Choosing them instead of new phones may mean fewer orders for the international mining, chipmaking, and assembly network that creates jobs and trade. Loans could help residents who cannot afford devices reach online learning materials. Still, some borrowers might not be able to pay for data plans, so the library should offer access to its Wi-Fi. Keeping working phones in use longer could reduce demand for new materials, although these phones will eventually become electronic waste. The library should arrange responsible recycling when a phone can no longer be repaired.

Accept either purchasing recommendation if the response explains all requested trade-offs with plausible links to the passage. Safeguards may address access, working conditions, mining, repair, or disposal.