

CELL PHONE MINERALS

Cell phones are used for staying connected, internet access, text messaging, playing games, various applications, entertainment, and taking photos. They have mineral components that can only come from mining.

Think About It: Do cell phones have anything in common with rocks and minerals? Explain. _____

Minerals & Elements in a Cell Phone

Arsenic	Amplifier, receiver
Copper	Electrical circuitry
Gallium	Amplifier, receiver
Gold	Electrical circuitry
Indium	Liquid Crystal Display (LCD Screen)
Magnesium Compounds	Phone casing
Palladium	Electrical circuitry
Platinum	Electrical circuitry
Silver	Electrical circuitry
Tin	Liquid Crystal Display (LCD Screen)
Tungsten	Electrical circuitry

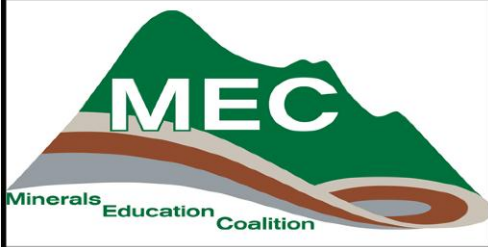


Directions for Activity:

Compare the table that shows the percentage of mineral resources imported into the US to the minerals and elements needed to make a cell phone, then answer the questions on the back of this page.

Mineral Resource Imports into the United States 2012

Mineral Resource	% Imported	Major Import Sources
ALUMINUM	13	Canada, Russia, China, Mexico
ANTIMONY	87	China, Mexico, Belgium
ARSENIC	100	Morocco, China, Belgium
ASBESTOS	100	Canada, Zimbabwe
COPPER	35	Chile, Canada, Peru, Mexico
DIAMOND (dust, grit and powder)	89	China, Ireland, Republic of Korea, Russia
GALLIUM	99	Germany, Canada, United Kingdom, China
GEMSTONES	98	Israel, India, Belgium, South Africa
GOLD	36	Mexico, Canada, Colombia, Peru
GRAPHITE	100	China, Mexico, Canada, Brazil
INDIUM	100	China, Canada, Japan, Belgium
IODINE	99	Chile, Japan
MAGNESIUM COMPOUNDS	53	China, Canada, Brazil, Austria
MANGANESE	100	South Africa, Gabon, China, Australia
MICA, sheet	100	China, Brazil, Belgium, India
NIOBIUM (columbium)	100	Brazil, Canada, Germany, Russia
PALLADIUM	56	Russia, South Africa, United Kingdom, Norway
PLATINUM	88	Germany, South Africa, United Kingdom, Canada
QUARTZ CRYSTAL (industrial)	100	China, Japan, Russia
SILVER	75	Mexico, Canada, Peru, Chile
TIN	76	Peru, Bolivia, Indonesia, China
TITANIUM MINERAL CONCENTRATES	68	South Africa, Australia, Canada, Mozambique
TUNGSTEN	36	China, Bolivia, Canada, Germany



Fun Facts 2012:

- The first cell phone call was made on April 3, 1973 by a Motorola executive named Martin Cooper.
- The phone weighed 2.5 pounds, only had 30 minutes of talk time and took 10 hours to charge!



1. Does the US have the resources to make cell phones without using any mineral resources from imported sources?

Explain your answer. _____

2. Gold is important for electricity conduction in cell phones and computer circuit boards. If you were a gold miner, what countries could you live in? Which one would you choose to live in? Why? _____

3. How many countries can it take to get the minerals needed to make a cell phone? _____

4. Are there any minerals in a cell phone that we get only from a domestic source? Explain. _____

5. Rank the minerals in a cell phone from lowest percent imported to highest percent imported.

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|----------|----------|-----------|
| 1. _____ | 5. _____ | 9. _____ |
| 2. _____ | 6. _____ | 10. _____ |
| 3. _____ | 7. _____ | 11. _____ |
| 4. _____ | 8. _____ | |

6. Describe some other uses you know for the minerals and elements used in a cell phone. _____

7. Explain why minerals and mining are important to you and your daily life. _____

Extension Activity

Individually or in a small group use the internet to research how the minerals in a cell phone are mined. Create a diagram for each type of mining done to extract these minerals



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