

SOCCER MINERALS

Soccer is a global sport played professionally and for fun. It is more commonly known as "football" in all countries except the United States of America. Today, soccer equipment and soccer fields are made with materials that come from mining.

Think About It: Does soccer have anything in common with rocks or minerals? Explain your answer using only your background knowledge. _____

Mineral Resources Needed for Playing Soccer

Mineral Resource	Net % Imported	G	B	Major Sources	% Self Sufficiency (Subtract % Imported from 100%)
		u	a		
		r	i		
		d	s		
		s			
ANTIMONY	87	X	X	China, South Africa, Bolivia, Russia	13
ASBESTOS	100			Russia, China, Brazil, Kazakhstan	
BARITE	80			China, India, Morocco, United States	
BAUXITE and ALUMINA	100			Australia, China, Brazil, Indonesia	
BERYLLIUM	10			United States, China, Mozambique	
BORON (boric acid)	0			Turkey, United States, Argentina, Chile, Russia	
CHROMIUM	70			South Africa, Kazakhstan, India	
COBALT	78			Congo, China, Canada, Russia	
COPPER	35			Chile, China, Peru, United States, Australia	
FLUORSPAR	100			China, Mexico, Mongolia, South Africa	
GRAPHITE	100			China, India, Brazil, North Korea	
GYPHUM	12			China, Iran, Spain, Thailand, United States	
IODINE	88			Chile, Japan, China, Azerbaijan, Russia	
IRON ORE	0			China, Australia, Brazil, India, Russia	
LIME	1			China, United States, India, Russia, Japan	
MAGNESIUM (compounds)	46			China, Russia, Turkey, Austria	
MANGANESE	100			South Africa, Australia, China, Gabon	
MICA (scrap and flake)	31			China, Russia, Finland, United States	
MOLYBDENUM	0			China, United States, Chile, Peru, Mexico	
NITROGEN (fixed, ammonia)	35			China, India, Russia, United States	
PHOSPHATE ROCK	5			China, United States, Morocco, Russia	
POTASH	81			Canada, Russia, Belarus, China, Germany	
QUARTZ (industrial sand)	0			United States, Italy, Germany, Australia	
SALT	19			China, United States, Germany, India	
SELENIUM (from copper refineries)	0			United States, Germany, Japan, Belgium, Russia	
SILICON (ferrosilicon)	<60			China, Russia, United States, Brazil, France, Norway	
SULFUR	19			China, United States, Russia, Canada, Saudi Arabia	
TALC and PYROPHYLLITE	2			China, Brazil, India, United States, South Korea	
TITANIUM (mineral concentrates)	77			South Africa, Australia, Canada, China, India	
ZINC	72			China, Australia, Peru, United States, India	



Source: USGS Mineral Commodity Summaries 2013

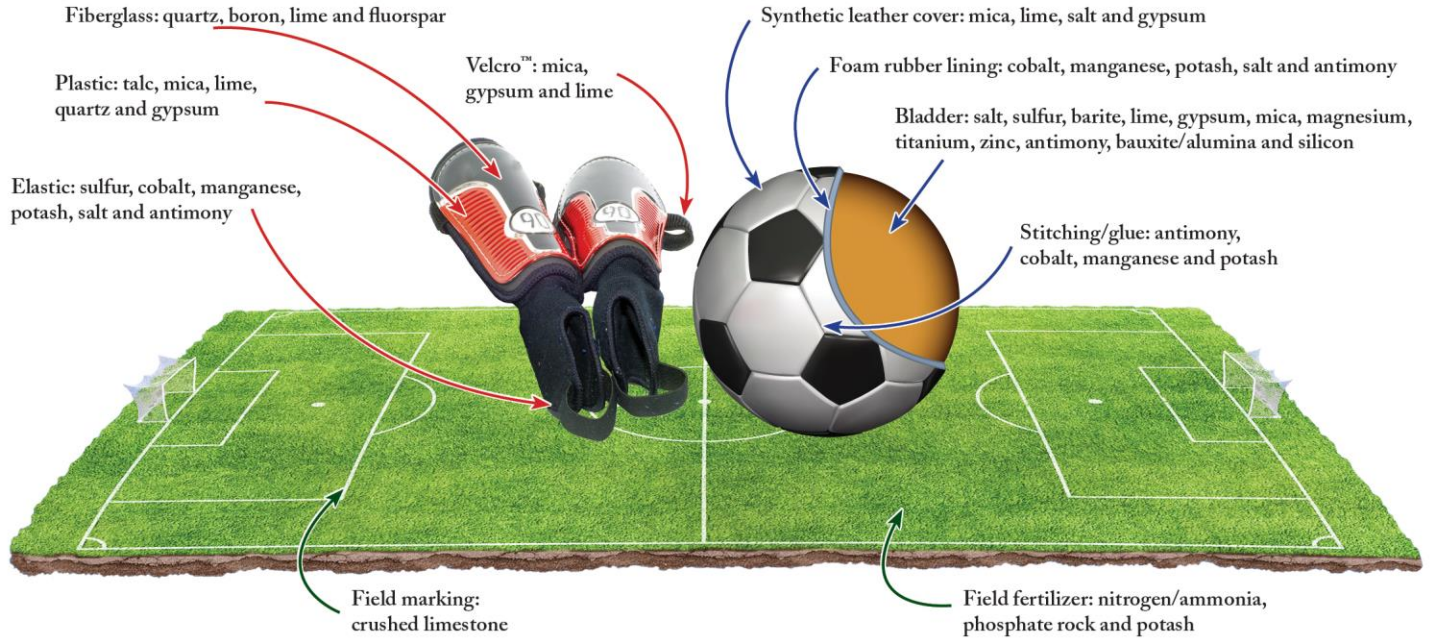
Directions for Activity: The table above lists some of the mineral resources needed to play soccer, the percentage of the resource that is imported by the United States and major sources. Use the table above and the figure on the next page to answer the questions. To check your answers, go to www.MineralsEducationCoalition.org/k-12-education.

FUN FACTS:

- ♦ The oldest soccer ball in the world is 450 years old, made from deer skin and a pig's bladder filled with air. It's on display in a museum in Scotland.
- ♦ The highest scoring professional soccer game was 149-0 in 2002. The losing team scored over 100 goals on itself to protest bad refereeing.
- ♦ Soccer is the most played and most watched sport on Earth.

Shin Guards

Soccer Ball



1. What is the fewest number of countries needed to manufacture a soccer ball and a pair of shin guards? _____

2. Lime (as a processed limestone product) is used in making synthetic materials, such as the rubber and plastic used to make soccer equipment. The white powder for marking the lines on a sports field is from crushed limestone. If you were a lime producer, in what countries could you live? Which would you choose to live in and why?

3. List the three countries that have the most mineral resources needed to make a soccer ball. _____

4. Could any of the countries listed make shin guards without using imported mineral resources? Explain.

5. If you were a professional soccer player, why would mining and minerals be important to you and your job?

Two Extension Activities

- Research the minerals needed to make soccer cleats, nets and goal posts.
- Label stickers or post-it notes with the mineral resources listed in the table and place them on a world map to show the geographic distribution of major sources for the mineral resources needed for playing soccer.

