



We're Golden!

Bling may be the thing, but did you know that gold can help people live longer, healthier, and more productive lives?

You might think of rings, necklaces, and rap artists when gold is mentioned, but they might be amazed to learn that this sturdy and reliable element has provided answers to engineering, medical, and environmental challenges for many years.

Gold isn't found in just jewellery cases and bankers' vaults. You'll find this precious metal in dental fillings, electronics, medical devices, and even spacecraft! Satellite technology relies on gold as a heat shield. TVs, computers, and other electronic parts require gold to conduct electricity. Gold-coated lasers, thermometers, and gold compounds are used in life-saving pharmaceuticals and medicine. Gold reflective glass on buildings keeps them warm in the winter and cool in the summer. Blast into space and you'll find gold in spacecraft, in astronauts' instruments and on their visors, and even in the Hubble Telescope.

Gold has held allure for brave explorers for more than 5000 years. It was the first metal widely known to humans and was coveted by those in power and royalty. No doubt, they loved it for its timeless beauty—it doesn't corrode or tarnish.

Around 700 BC, gold was first used as currency. Punched into coins, gold was portable and permanent. The Greeks mined for gold, and the Romans advanced the mining process by mining underground. A monetary standard was established and gold coins were used to purchase fabrics from India and spices from China. Today, Canada is one of the world's largest producers of official gold coins.

Gold still forms the basis for a monetary standard used by the International Monetary Fund (IMF). The price of gold is driven by supply and demand, though influenced by the fact that almost all the gold ever mined still exists.

Gold can be tricky to find. Prospectors use sophisticated equipment to locate the gold embedded in rock. They test possible mineral deposits by drilling and extracting cores of host rock for inspection. These samples tell the miners if there's "gold in them thar hills!"

Once a promising gold deposit is located, additional sampling helps to define the project and determine its economic viability. If worthwhile, excavations begin on an underground or surface mine.

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Ore samples containing gold are taken to assay labs where a cyanide solution dissolves the gold out of the samples. The gold is then drawn from the cyanide solution using carbon. At this stage, the gold is considered impure so is further refined to 999.9 parts per thousand of PURE GOLD!

Once mining at a site is completed, reclamation of the land begins in order to off-set environmental degradation and encourage productive future use of the land. Sites are monitored and maintained for public safety following mining activity.

The weight of gold is expressed in troy ounces. One troy ounce equals 1.097 regular ounces. The purity of gold is either described as a percentage (parts of gold per 100) or in karats (parts of gold per 24). This term is not to be confused with a carat, which is used to state the weight of a gemstone.

Most of Canada's gold is found on the Canadian Shield and the Cordillera in British Columbia. In 2002, 147 tonnes of gold were mined in Canada, generating \$2.3 billion.

Gold Fun Facts

- The symbol for gold on the periodic table is Au.
- Gold is recyclable. All gold currently in use is recycled and could be up to 6000-years-old!
- Gold is the most malleable (easily shaped) metal. It's strong but yielding!
- In 3000 BC, Egyptians created gold leaf: gold beaten into very thin sheets, like foil. One ounce of gold can be beaten into an area of approximately 28 metres².
- Pure gold is soft and is often mixed with other metals. Metals mixed together are called alloys.
- A "gold bug" is a nickname given to people who love to buy and sell gold, but it also refers to bacteria (bugs) that munch on rocks that contain gold!

Fun in the Classroom

Get your hands dirty—pan for gold! Look for complete kits gold panning kits at www.mii.org/panforgold.php.