

The Early Days

Modern pencils are the descendants of ancient writing instruments.

In ancient Rome, scribes wrote on papyrus (an early form of paper) with a thin metal rod called a stylus, which left a light but readable mark. Other early styluses were made of lead. Today we still call the core of a pencil the "lead" even though it is made from nontoxic graphite.

Graphite came into widespread use following the discovery of a large graphite deposit in Borrowdale, England in 1564. Graphite left a darker mark than lead, but was so soft and brittle that it required a holder. At first, sticks of graphite were wrapped in string. Later, the graphite was inserted into wooden sticks that had been hollowed-out by hand! The wood-cased pencil was born.

THE MODERN ERA

The first mass-produced pencils were made in Nuremberg, Germany in 1662. Until the war with England cut off imports, pencils used in America came from overseas. (William Monroe, a cabinetmaker in Concord, Massachusetts, made the first American wood pencils in 1812.) Benjamin Franklin advertised pencils for sale in his *Pennsylvania Gazette* in 1729. George Washington used a three-inch pencil when he surveyed the Ohio Territory in 1762. Click here to learn more about famous people who have used pencils.

The first mass-produced pencils were unpainted, to show off their high-quality wood casings. However, by the 1890s, many manufacturers were painting their pencils and giving them brand names. There's an interesting story behind the familiar yellow color of the common pencil. Click this link to find out why pencils are yellow.

Early American pencils were made from Eastern Red Cedar, a strong, splinter-resistant wood that grew in Tennessee and other parts of the southeastern United States. By the 1900s, pencil manufacturers needed additional sources of wood, and turned to California's Sierra Nevada mountains. There they found Incense-cedar, a species that grew in abundance and made superior pencils. California Incense-cedar soon became the wood of choice for domestic and international pencil makers.

To ensure the continued availability of Incense-cedar, forest workers have carefully managed the stands of trees in which Incense-cedar grows, and timber companies have been careful to harvest the trees on a sustained-yield basis. "Sustained-yield" means that the annual growth of the forest is greater than the amount harvested from the forest. Forests managed on a sustained-yield basis are abundant and healthy, and will continue to provide wood for people and habitat for animals for generations to come.

Want more information about Incense-cedar pencils and pencil making? Click here for a list of references.



Believe it or not . . . There's no lead in pencil lead!

The center of the pencil -- known as the writing core -- is made of a nontoxic mineral called graphite.

Graphite came into widespread in the 16th century, following the discovery of a large graphite deposit in Borrowdale, England. As the story goes, a passerby found bits of shiny, black graphite clinging to the roots of a fallen tree. The whole countryside was abuzz with talk about this mysterious mineral, which soon came to be known as "plumbago" or, more commonly, "Blacklead."

Graphite left a dark mark, making it ideal for use by writers and artists. But it was so soft and brittle that it required a holder. At first, sticks of graphite were wrapped in string. Later, the graphite was inserted into wooden sticks that had been hollowed-out by hand! The wood-cased pencil was born.

Graphite in America.

In 1821, Charles Dunbar (the brother-in-law of author Henry David Thoreau) discovered a graphite deposit in New England. This graphite was certified as far superior to any previously found in the United States. With this high-quality material for its writing cores, the Thoreau pencil company came to be known as the maker of the finest pencils in America.

Graphite in Siberia.

While searching for gold in the streams of Siberia, French merchant Jean Pierre Alibert came upon some very round, very smooth pieces of pure graphite. Reasoning that they must have been carried a long distance downstream, Alibert trekked some 270 miles until he found the source of his discovery.

Alibert had supplies packed in by reindeer to set up a mine at this mountainous site near the Chinese border. During the first seven years of operation, the mine produced graphite of marginal quality. Then a rich and unbroken deposit of the highest-quality graphite was uncovered, a find that yielded pieces of pure ore weighing as much as 80 pounds! Pencils using Asian graphite were <u>painted yellow</u> as an indication of the source of the superior material in the writing core.

Today's writing cores are a mixture of graphite and clay.

By varying the ratio of graphite to clay, pencil makers can adjust the "hardness" of the writing core.



From authors to presidents to footsoldiers alike, people making history have made their mark with cedar pencils.

John Steinbeck, who wrote *The Grapes of Wrath* and *Cannery Row*, used as many as 60 cedar pencils every day!

Ernest Hemingway, author of *The Old Man and the Sea* and *The Snows of Kilimanjaro*, also favored cedar pencils for putting down his thoughts.

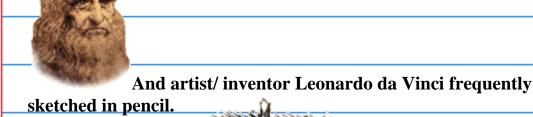
Before he wrote *Walden*, Henry David Thoreau manufactured pencils in his father's factory. Thoreau's pencils held the reputation of being the hardest, blackest pencils in the United States!

Thomas Edison's bright idea was to keep a 3-inch-long pencil in his vest pocket just to jot down notes! Pencils were standard issue for soldiers during the Civil War.



The hardness of the core is often marked on the pencil -- look for a number (such as "2" or "3"). The higher the number the harder the writing core. You might see other markings on pencils. Some pencil manufacturers use the letter "H" to indicate a hard pencil. Likewise, a pencil maker might use the letter "B" to designate the blackness of the pencil's mark. The letter "F" is also used to indicate that the pencil sharpens to a fine pont.

Pencil makers also use combinations of letters -- a pencil marked "HB" is hard and black; a pencil marked "HH" is very hard, and a pencil marked "HHBBB" is very hard and really, really black!



Do you know of a famous person who made his or her mark on history with cedar pencils? Send us the story! We might include it in a future web page! Click on the Cedarmark below to send us email.



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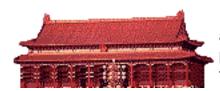
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Pencils have been painted yellow ever since the 1890s. And that bright color isn't just so you can find them on your desk more easily!



During the 1800s, the best graphite in the world came from China. American pencil makers wanted a special way to tell people that their pencils contained Chinese graphite.



In China, the color yellow is associated with royalty and respect. American pencil manufacturers began painting their pencils bright yellow to communicate this "regal" feeling and association with China.



The rest, as they say, is history. Today, 75% of the pencils sold in the United States are painted yellow!

Back to Pencil History

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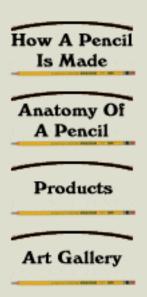


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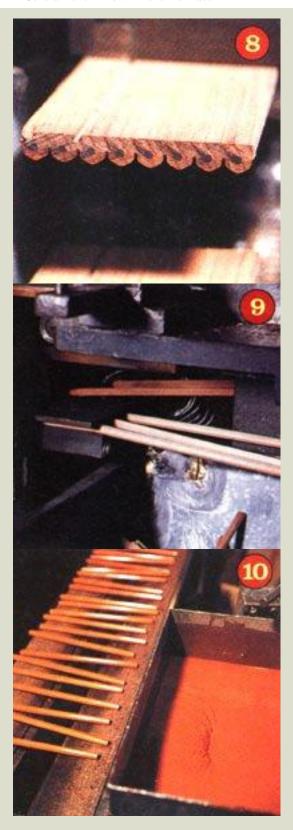


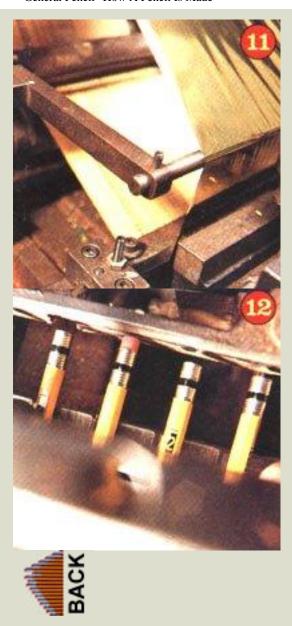


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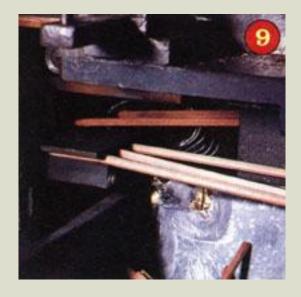
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When the glue dries, the slats are fed through a cutting machine. Fast revolving steel blades trim the wood into round or hexagonal shapes, one side at a time.



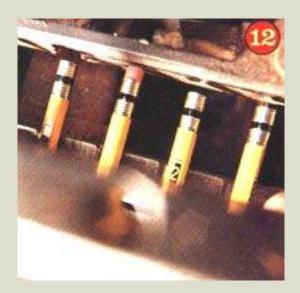
The same machine cuts apart each slat into eight separate pencils.



The pencils are sanded, and each one receives from five to eight coats of paint.



A heated metal stamp presses the name of the company and a number (such as the number 2) on the pencil in gold foil or in paint. The number indicates how hard the pencil lead is.



A metal band, called a ferrule, is wrapped tightly around one end of the pencil. It holds the eraser, which is being added here. The pencils are then ready to be packaged, sharpened, and used.

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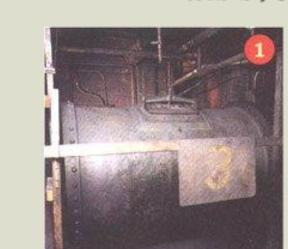




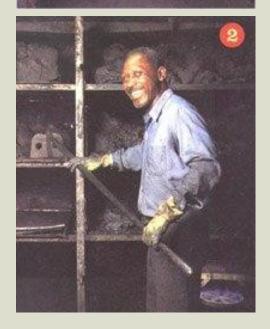


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Step-by-Step How a Peneil Is Made



Chunks of graphite (a soft, dark mineral) and clay are placed inside a huge rotating drum. Large rocks inside the drum crush the graphite and clay into a fine powder. Then water is added, and the mixture is blended in the drum for up to three days.



A machine squeezes all the water out of the mixture, leaving behind a gray sludge. Here, a worker puts the sludge in a cabinet where it air-dries and hardens for four days.

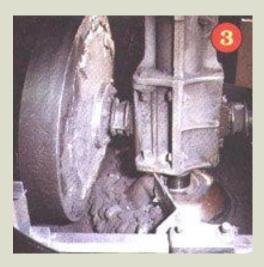
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Huge wheels grind the dried sludge into another fine powder, and water is blended in again to make a soft paste.



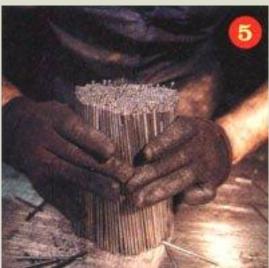
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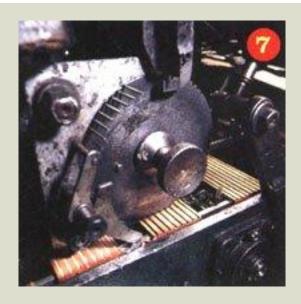
The paste is pushed through a metal tube and comes out in the shape of thin rods. Then the rods are cut into pencil-length pieces, called leads, and sent along a conveyor belt to dry.



After drying, the pencil leads are put into an oven heated to 1,800°F. The intense heat makes the leads smooth and hard, which makes for good writing points.



In another part of the factory, the wood is prepared. Machines cut blocks of cedar into wide slats. Eight shallow grooves are sawed lengthwise into each slat.

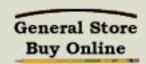


A thin coat of glue is applied to the slats, and one pencil lead is placed into each of the eight grooves. Within seconds, another wide grooved slat is glued on top, sandwiching the leads.

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