GOLD

EDUCATOR'S GUIDE

www.amnh.org/education/gold

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- Suggestions to Help You **Come Prepared**
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American Museum of Natural History

KEY CONCEPTS

This exhibition examines the science and cultural influence of civilization's most sought-after mineral. Gold specimens and artifacts reveal its properties, origins, and role as a driver of human settlement and a symbol of status. Because this natural resource is unique, rare, and found globally, societies go to great lengths to acquire it.

Gold Is a Mineral, an Element, and a Metal

Gold can be defined several ways. It is a *mineral*—a natural solid with a crystal structure. Gold has a place on the periodic table as an *element*—a substance composed of a single type of atom. It is also a *metal,* one of a group of elements with characteristic properties. Metals tend to have a shiny luster, conduct electricity well, and can be malleable and ductile.

Gold's Combination of Physical and Chemical Properties Is Unique

Gold's attributes make it alluring, durable, and useful.

Color—Yellow: Gold is the only metal that is yellow in its pure, or *native*, state. In nature, gold can combine with other metals, which alters its hue.

Luster—Metallic: Gold gleams because of the way it reflects light. Only silver and copper have comparable degrees of reflectivity.

Reactivity—Nearly inert: Although gold *alloys*, or mixes, with metals easily, it reacts chemically with very few nonmetallic substances. Therefore, it resists *tarnish* and *corrosion*—forms of deterioration from gases or liquids.

Conductivity—Excellent: While copper and silver conduct heat and electricity better, gold's nonreactive nature leaves it more conductive for longer.

Density—High: Gold weighs 19.32 grams per cubic centimeter. That's nearly twice as hefty as lead.

Hardness—Very soft: On the 10-tier Mohs hardness scale for minerals, gold is a 2—very soft. It is easy to manipulate.

Malleability and Ductility—Readily deformed: A malleable metal can be hammered into sheets, and a ductile metal can be easily drawn into wire. Gold is superlative at both.

Cuff links (England; c. 1885)

Minerals Form by Geologic Processes

Over millions of years, processes such as magmatism, erosion, and sedimentation work together to form and deposit minerals in Earth's crust. Gold deposits can be dispersed microscopically in rock, or concentrated in *veins* and *placers*. Veins form when minerals dissolved in *hydrothermal* fluids rise through fractures in rocks deep in the crust and crystallize out of solution. Eventually, wind and surface waters erode gold grains away from veins. Placer deposits form when grains collect in lake-, river-, and seabeds.

Natural Resources Are Valuable to Civilizations

Gold is found worldwide, but it is rare—it comprises just five out of every billion atoms in Earth's crust. Its rarity and distribution have driven societies all over the world to seek and cherish gold since its first known use about 6,000 years ago. As the population increases, so does the demand for gold.

Using gold: Gold's most common use is for adornment. It is also used for religious objects, tableware, awards, commerce, electronics, and medical applications.

Seeking gold: History reveals that where gold was found, human settlement often followed. After the late 15th century, gold owned by South and Central American cultures drew plundering European explorers and colonists. Gold deposits have set in motion prospectors and prosperity in many locales.

Valuing gold: People use gold to signify social status. Archaeologists find gold artifacts from societies stratified by wealth or power, such as the ancient Egyptians and the Inca. Less stratified societies typically do not value gold as highly.

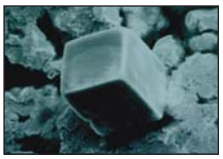
Acquiring Natural Resources Affects the Environment

Gold mining employs massive amounts of rock and hazardous chemicals; it deforms and can pollute landscapes. Since the largest, most accessible gold deposits in Western countries have long been tapped, gold mining companies today often operate in developing countries, which can have weak environmental and human rights protections. As gold's environmental and social tolls become more apparent, communities, workers, companies, and consumers are weighing gold's costs against its value.

- ***Italicized* words are defined in our online glossary: www.amnh.org/resources/rfl/web/goldguide**

Gold in Many Forms

Gold's smallest building block is a microscopic cube-shaped *crystal*. The distinct symmetry of a gold crystal results from the way gold atoms organize themselves.

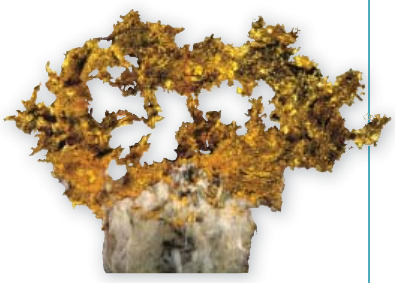


Gold crystal under a scanning electron microscope

Gold crystals build upon each other during deposition. The space available in the Earth determines the appearance of the resulting specimen. Only rarely can gold crystals freely aggregate into well-developed, visibly crystalline shapes. More often they aggregate imperfectly, in cramped spaces, resulting in a variety of forms: chunky nuggets, wiry branches, undulating ribbons, and so on.

Nuggets are lumps of natural gold, often eroded to smoothness.

Although all gold is made of individual crystals, aggregates with a clearly visible geometry are often dubbed **crystallized**.



Gold **veins** are deposits that form in fractures in the Earth.

Gold **grains** and **flakes** erode from veins and other deposits.

Ores can contain **microscopic particles** of gold, each made of one or more gold crystals.

Come Prepared

Review this guide and additional online resources to plan your visit to *GOLD*. An in-depth description of the exhibition, glossary, and reference lists are available at **www.amnh.org/education/gold**. For general information about school visits to the Museum, go to www.amnh.org/education/schools.

Class Discussion

Before you arrive, discuss the Key Concepts with students. To start the dialogue, ask:

- What do you think of when you hear the word "gold"?
- What are different ways gold is used?
- How do you think society values gold compared to other metals?
- What does gold adornment signify to the wearer and an observer?

Observation Activity

Students will be observing objects in the exhibition. Have them practice this important scientific skill beforehand by inspecting either a natural specimen (a rock) or an artifact (a coin). Students can use magnifying lens, metric ruler, balance, or other tools to:

- Measure its size and mass
- Describe its shape, color, texture, and hardness
- Record what is visible under magnification (crystals? the engravers' initials?)

To extend the activity, have students compare and contrast with other rocks and coins. They can also infer the significance of the artwork on the coin.

Your visit to the exhibition can be correlated to the national standards listed below. Additional correlations to New York State and City standards can be found at www.amnh.org/resources/rfl/web/goldguide.

National Science Education Standards

All grades A1: Abilities necessary to do scientific inquiry; A2: Understanding about scientific inquiry; E2: Understanding about science and technology; G1: Science as human endeavor

K–4 B1: Properties of objects and materials; D1: Properties of Earth materials; D3: Changes in the Earth and sky; E1: Abilities to distinguish between natural objects and objects made by humans; F3: Types of resources; F4: Changes in environments; F5: Science and Technology in local challenges

5–8 B1: Properties and changes of properties in matter; D1: Structure of the Earth system; F2: Populations, resources, and environments; F3: Natural hazards; F4: Risks and benefits; F5: Science and technology in society

9–12 B1: Structure of atoms; B2: Structure and properties of matter; B3: Chemical reactions; D1: Energy in the Earth system; D2: Geochemical cycles; F3: Natural resources; F4: Environmental quality; F5: Natural and human induced hazards; F6: Science and technology in local, national, and global challenges

National Curriculum Standards for Social Studies

Thematic Strands 1 Culture; 2: Time, continuity, and change; 3: People, places, and environment; 8: Science, technology, and society; 9: Global connections

National Standards in the Arts

Understanding the visual arts in relation to history and cultures

TEACHING IN THE EXHIB

Explore the Key Concepts with your students using the following objects and questions. Refer to the Map of the Exhibition as you tour through each area.

1. AURUM NATURAE

This area showcases stunning natural gold specimens and introduces the variety of forms gold can take.

Newmont gold mass

- **The Newmont gold mass, the "Boot of Cortez" nugget, and a gold and quartz vein in metamorphic rock:** No matter what form it takes, gold is a mineral, an element, and a metal. Have students observe, compare, and contrast these three natural specimens.
- **Theater:** To give students a sense of the exhibition's scope, have them watch this six-minute video.

Key Concept: Gold is a mineral, an element, and a metal.

2. INCOMPARABLE GOLD

This area explores gold's properties and its geologic formation, as well as gold rushes and mining.

- **Display case of gold's properties ("No Other Metal or Mineral Measures Up to Gold"):** What is gold most frequently used for? What are its other uses?
  - **Apollo 11 space helmet:** When does gold both transmit and reflect light?
  - **Computer PCI card:** Copper is a better conductor than gold. Why is gold, the more expensive material, used in this chip?
  - **1/2 oz gold and 1/2 oz quartz crystal:** Compare the density of these two specimens.

Apollo 11 space helmet

- **Gold room:** Why do you think that nearly pure gold (and not an alloy) was used to decorate this room?
- **Panel and wall case of gold charms ("The Language of Gold"):** What accounts for the different colors of gold?
- **Display case of gold crystals ("Wire, Leaf, Branch, and Tree"):** Have students describe the different shapes of gold crystals. If all gold is made of crystals, what accounts for the differences in appearance?

Porphyry copper-gold ore (Argentina)

- **Display case of gold ore and veins ("Hydrothermal Cocktail") and wall illustration of "Forming Earth's Gold Deposits":** Have students observe the gold deposits in this case and look at the illustration. Where does the heat come from? What role do hydrothermal fluids play in the formation of gold deposits?
- **Platform of ore boulders ("Squeezing Gold from Rocks") and wall panel on "Gold Mining and the Environment":** How do you think gold mining affects the surrounding environment and human beings that live there?
- **The Summitville Gold Boulder and wall case and graphic on gold rushes ("Chasing Gold, Then and Now"):** To what lengths do people go to acquire gold? Do you think it would be as easy for you to find gold today as it was for prospectors during the gold rushes? Why or why not?
- **Sluice box:** What property of gold makes it possible to separate gold from gravel with this tool?

Key Concepts: Gold's combination of physical and chemical properties is unique. Minerals form by geologic processes. Acquiring natural resources affects the environment.

Mixing Metals

Alloys

Metallurgists have long modified gold's properties by *alloying*, or mixing, it with other metals to meet aesthetic and technological needs. Melting gold with other metals both hardens it and changes its color. Gold alloys can also be blue, purple, and brown.

Colors of Gold

Yellow	White	Green	Pink	Black
75% gold 16% silver 9% copper	75% gold 17% palladium 4% silver, 4% copper	75% gold 25% silver	75% gold 25% copper	gold plus rhodium or ruthenium

BITION

Spanish coins recovered from a shipwreck

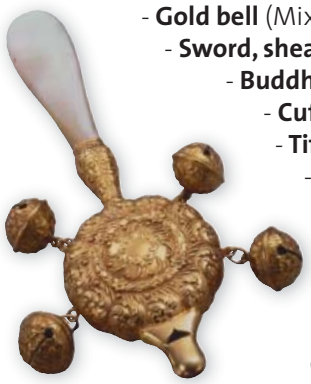
3. GOLDEN AGES

This area features human-worked gold objects from all over the world.

• **All objects:** Have students observe gold artifacts in this room (suggested highlights, in chronological order, are listed below). Why do you think gold appears across many different cultures and time periods? Who do you think owned these objects? How are the objects used to signify status?

- **Gold sheet mouflon** (Iran; c. 2500–2000 BC)
- **Stirrup spout bottle** (Chavin cult, South America; c. 900–200 BC)
- **Gold helmet with crocodile deity** (Sitio Conte, Panama; c. 700–900)
- **Gold bell** (Mixtec/Aztec, Mexico; c. 1200–1521)
- **Sword, sheath, and guards** (Japan; c. late 1800s)
- **Buddha** (Tibet; c. late 1800s–early 1900s)
- **Cuff links** (England; c. 1885)
- **Tiffany baby rattle** (U.S.A.; c. 1890)
- **Gold mask pendant** (Asante, Ghana; c. early 1900s)

Iranian gold mouflon



Tiffany baby rattle

• **Case with Incan figurine and Spanish escudo coins:** Why do Spanish gold coins appear in a case of Incan artifacts? This figurine is considered the rarest artifact in the exhibition. Why do you think that is so?

Key Concept: Natural resources are valuable to civilizations.

4. LOST AND FOUND

This area showcases gold as treasure: coins, bars, and shipwreck contents.

• **$3,000 Treasure Box:** What physical and chemical properties of gold are responsible for the shininess of these coins, even after 130 years underwater?

Key Concepts: Gold's combination of physical and chemical properties is unique. Natural resources are valuable to civilizations.

5. GOLD STANDARD

This area displays gold currency throughout the ages.

• **All coins:** What symbols appear on the coins? Why do you think these symbols were chosen?

Key Concept: Natural resources are valuable to civilizations.

6. GOLDEN ACHIEVEMENT

This area features gold awards for cultural achievement.

• **All objects:** Why do you think gold was the metal of choice for these objects? What does gold symbolize? If these were objects of a culture unknown to you, what would they tell you about the society?

Key Concept: Natural resources are valuable to civilizations.

Emmy® award

Be an Exhibition Explorer in *GOLD*: Students can conduct independent explorations of this exhibition by recording their observations of specimens and artifacts. They can use a notebook or copies of "Be an Exhibition Explorer," available at **www.amnh.org/education/gold**. Back in the classroom, the recorded data will be a great springboard for further discussion and/or research.

Explore Precious Metals in Other Museum Halls: Students can use the enclosed inserts to continue their investigation of gold and other precious metals in the Halls of Minerals and Gems and the Hall of South American Peoples. Middle and high school students can tour the halls independently following the highlighted stops, while the Explore More section is geared towards elementary students.

Karats

The proportion of pure gold in an object is measured in *karats*, a unit initially based on the weight of dried carob seeds. One karat is 1/24th of the total weight of the object. Therefore, 100 percent pure gold is 24 karats.

Weights of Gold

BACK IN THE CLASSROOM

Use these activities to explore and extend the themes of the *GOLD* exhibition.

Mixtec bell
(Mexico; c. 1200–1521)

Write a review of the exhibition: Ask students to choose an object they consider the most compelling. From the perspective of either a science writer or a cultural reporter, have students describe the object and its significance. Students can use the exhibition website to remind them of what they saw (www.amnh.org/gold).

Grow crystals: Pour a cup of water (any temperature) into a foil pie plate. Add table salt and stir until the salt no longer dissolves. Have students observe the plate daily by eye and with a magnifying lens, and record what they see. Have students infer the relationship between the rate of evaporation and crystal size. Students should note that crystals near the edge form more rapidly and are smaller than those in the interior. This occurs because the water evaporates faster near the edges. Students will also note that all crystals maintain their cubic shape no matter the size.

The Archimedes experiment: Relate the story of how Archimedes determined that a gold crown (likely a wreath) commissioned by the king of Syracuse in the first century BC was a fraud. The mathematician discovered that the goldsmith replaced a portion of the quantity of gold he was given to make the crown with an equal mass of silver. Teach concepts of *mass*, *volume*, and *density* by exploring with students the method used by Archimedes to solve the king's problem. (An object will displace its own volume when submerged in water. The object's mass is directly proportional to this volume. Therefore, while the crown's mass was equal to the original gold quantity, its volume was larger as it contained the lighter metal.) A good reference website: math.nyu.edu/~crorres/Archimedes/Crown/CrownIntro

Corrode metals: Have students soak different metals in salt water for two days to compare how they react to water and oxygen: steel or iron nails/bolts, brass paper fasteners, coins, gold jewelry, etc. (Note: prepare steel objects before class by soaking in vinegar overnight to remove the rust-proof coating and rinsing.) Use the results to explain *corrosion* and *tarnish*. See our online glossary at www.amnh.org/resources/rfl/web/goldguide.

Explore the impact of gold mining: The environmental and human impacts of gold mining have been the focus of much attention in recent years. Have students research news articles and other sources to learn about these effects. Does what they learn affect their consumer choices?

Research gold in culture: Have students select a cultural group of interest (Mixtec, Inca, Asante, Japanese, etc.) and research how its artifacts reflect the culture. Students may also research how gold's use has changed in these regions from ancient to contemporary times.

Gold in language: Have students use what they learned in the exhibition to explain the origins and meaning of common phrases such as "mother lode," "mint condition," "fool's gold," "gold standard," and "golden age."

Online Activities

Visit OLogy (ology.amnh.org): Have students explore OLogy, the Museum's website for kids, for information and activities on geology, natural resources, archaeology, and more. Check out the features titled *Earth: Our World in Motion*, *Archaeology: Clues from the Past*, and *What's This?*.

Visit Science Explorations Web Quests (teacher.scholastic.com/activities/explorations/webquests.htm): Students can go on this virtual trip to the Museum to learn more about gold and investigate other precious minerals and metals from the Earth.

Credits

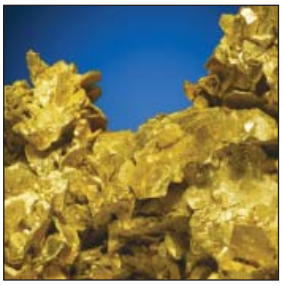
Gold is organized by the American Museum of Natural History, New York (www.amnh.org), in cooperation with The Houston Museum of Natural Science. This exhibition is proudly supported by The Tiffany & Co. Foundation, with additional support from American Express® Gold Card.

This Educator's Guide is produced by the Education Department at the American Museum of Natural History.

AMERICAN MUSEUM OF NATURAL HISTORY

PHOTO CREDITS: Cover – Gold bars, © Federal Reserve Bank of New York; crystallized gold, AMNH / Denis Finnin; vessel, AMNH / Craig Chesek **Key Concepts** – cuff links, AMNH / Craig Chesek **Gold in Many Forms** – gold under microscope, AMNH / George Harlow; ore with microscopic gold, AMNH / James Webster; all other photos, AMNH / Craig Chesek **Teaching in the Exhibition** – space helmet, NASA; porphyry copper-gold ore, AMNH / James Webster; mouflon, AMNH / Jackie Beckett; Tiffany baby rattle, © Tiffany & Co. Archives; Emmy®, AMNH / Craig Chesek; all other photos, AMNH / Craig Chesek **Mixing Metals** – all photos, AMNH / Craig Chesek **Back in the Classroom** – Mixtec bell, AMNH / Craig Chesek **Inserts** – all photos, AMNH / Craig Chesek.

Map of the Exhibition



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2 INCOMPARABLE GOLD
explores gold's properties and its geologic formation, as well as gold rushes and mining

3 GOLDEN AGES
features human-worked gold objects from all over the world

4 LOST AND FOUND
showcases gold as treasure: coins, bars, and shipwreck contents

5 GOLD STANDARD
displays gold currency throughout the ages

6 GOLDEN ACHIEVEMENT
features gold awards for cultural achievement

Connections to Other Museum Halls

A journey through the Museum is a great way to explore the science of precious metals and their role in culture.

Guggenheim Hall of Minerals and Morgan Memorial Hall of Gems

Compare gold to other minerals, elements, and metals among the natural treasures displayed in these halls. Near the entrance, explore mining implements from the California gold rush. Look for other precious metals, "fool's gold" (pyrite), and a video on gold.

Hall of South American Peoples

See how precious metals were buried with high-status members of society in an extraordinary Peruvian tomb. You'll also see the tools and techniques pre-Columbian peoples used to extract South American gold and shape it into the objects for which these cultures are renowned.

Gottesman Hall of Planet Earth

Enter the Hall of Planet Earth off the Central Park West first floor entrance. Along the left ramp you can compare three samples of important natural resources—gold ore, coal, and salt—and find remarkable examples of metallic vein deposits in rocks. Beyond the ramp are diagrams of the rock and water cycles that help drive the deposition of metal-rich deposits.

Hall of African Peoples

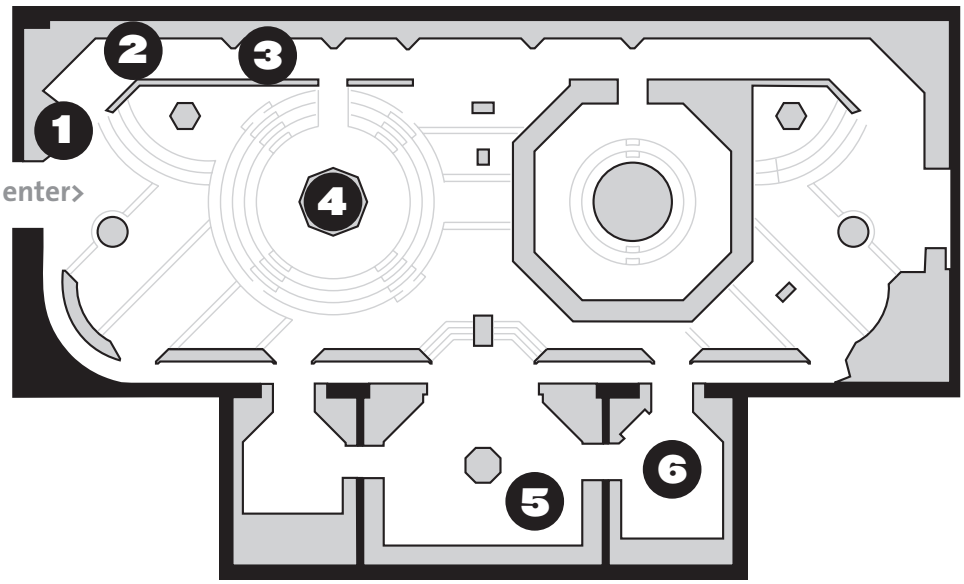
Gold figures prominently in Ghana's Asante society. See the display case labeled "Divinity and Authority," situated on the opposite side of the Mbuti diorama. Examine the elaborate brass weights and scales used to weigh gold, and the containers used to store gold dust.

Hall of Mexico and Central America

View the luminous hallmarks of status in pre-Columbian Mexico, Panama, and the "rich coast"—Costa Rica—in the central case of this hall.

Explore Gold and Other Precious Metals in the HALLS OF MINERALS AND GEMS

Investigate gold and other minerals, elements, and metals in the Guggenheim Hall of Minerals and Morgan Memorial Hall of Gems. Record your observations and answer questions on a separate piece of paper or field journal.



1 California Gold case
After you enter the hall, turn to your left. Examine the specimens and describe the different shapes gold can take.

2 Systematic Mineralogy case
Walk to your right to the "Elements" section of the Systematic Mineralogy wall case. What is the definition of an element? Observe the examples of the three groups of elements. How does gold compare to other metals? To semi-metals and nonmetals? Find gold on the periodic table.

Walk down the corridor and look to your right until you reach the Pyrite wall case.

3 Pyrite case
Observe the properties of pyrite. Why is this mineral called "fool's gold"? How is it different from gold?

Take a right into the amphitheater with the Properties of Minerals display.

4 Properties of Minerals display
- **Atoms, Space Lattices, and Crystals**
  The unit cell of gold has a cubic crystal structure. Observe how the atoms of a cubic crystal fit together, and how that structure manifests in minerals (specimens 1–5). Note that not every mineral specimen with a cubic crystal structure looks like a cube.
- **Physical Properties**
  Observe how hardness, cleavage, fracture, and specific gravity differ among mineral samples. How does gold's specific gravity compare to that of other minerals? Which is denser: gold or water?
- **Chemical Properties**
  Most minerals show some solubility in water. What happens to the crystal structure of halite when dissolved in water?
- **Optical Properties**
  Observe the varying colors and lusters of these specimens. What determines a mineral's color? Then look at specimens 52–61. How are their lusters different?

Walk up the stairs to the Morgan Memorial Hall of Gems and look at the wall on the left.

5 Precious Metals case
Compare and contrast the three precious metals: gold, silver, and platinum. What makes a metal "precious"? Which is more common in nature: gold or silver? How does a mineral's rarity affect its value?

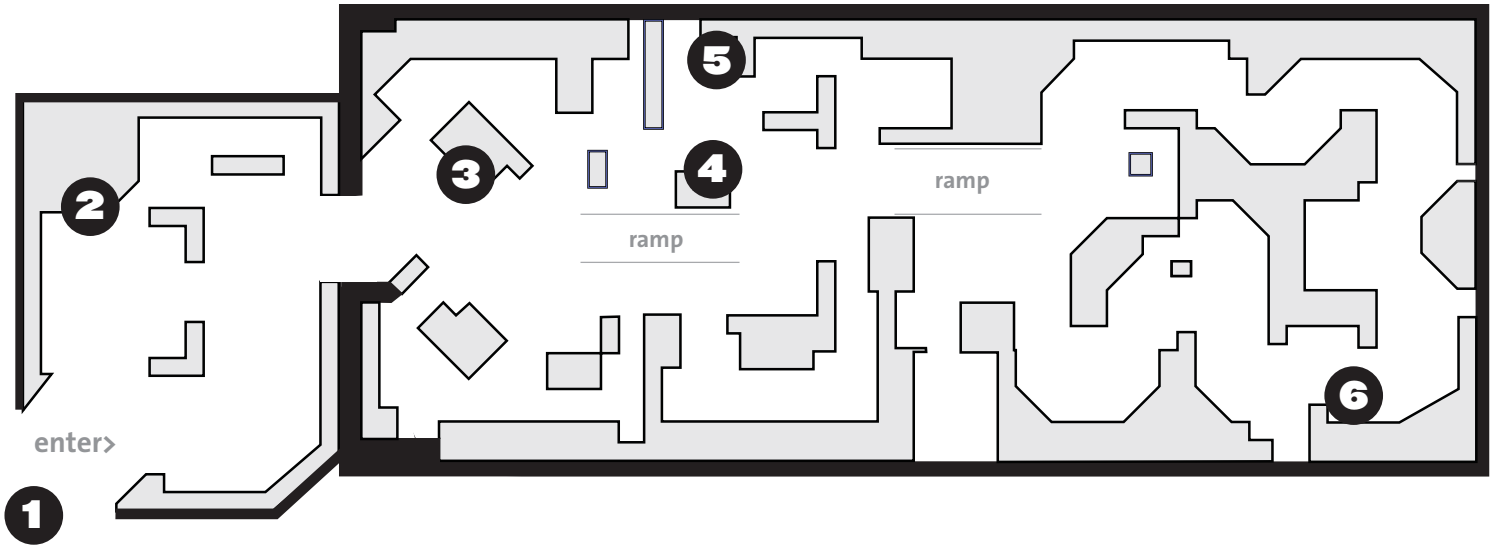
6 Gold video (c. 1985)
Watch the video to learn about the history and properties of gold. How has gold mining changed since the gold rushes? How do you think society's changing views may affect the future of gold mining?

Explore More
Find your favorite specimen in the Halls of Minerals and Gems. Observe it carefully and draw the specimen. Then answer:

- Is this specimen a mineral, an element, or a metal?
- Where was it found?
- What are its properties?

Explore Gold and Other Precious Metals in the HALL OF SOUTH AMERICAN PEOPLES

Investigate the symbolisms of gold and other precious metals in South American societies. Record your observations and answer questions on a separate piece of paper or field journal.



1 Gold display case in the Hall of Mexico and Central America

On your way to the Hall of South American Peoples, stop at the central case in the Hall of Mexico and Central America. Take a look at the fine examples of Mixtec, Costa Rican, and Panamanian gold.

Continue straight into the Hall of South American Peoples.

2 Sipán tomb excavation

At the far wall you will see an open-air model of a Sipán tomb excavation from the Moche civilization on Peru's north coast. The Lord of Sipán was buried with remarkable metal work. What objects do you see? What does this burial suggest about how the Moche valued gold and its leaders?

Turn right and walk through the glass doors labeled "Andes and Amazonia."

3 Chavin case

After you walk through the doors, look immediately to your left for the Chavin case. It contains the earliest South American gold in the hall. Describe the gold objects that were found in this burial.

Walk up the ramp and turn immediately to your left.

4 Mining and Smelting/Andean Copper Miner case

Find the photographs of Andean mining sites and a mummified miner. What tools did ancient miners use to crush ore and recover its precious metals? What types of metals were they after?

Turn around and look for the Metallurgy case.

5 Metallurgy case

Explore how Andean peoples turned metal from the Earth into the useful objects on display. Do you think these techniques are still used today? Why or why not? Then turn to your right to explore metal alloys and the role of color. Why do you think gold was alloyed with other metals? Why would metallurgists plate one metal to another? How was color used by these artisans?

Walk into the Indians of Amazonia room. Follow the exhibit to the right until you reach the Tools case, which will be on your right near the Baskets case in the far corner.

6 Tools case in Amazonia room

Explore this case and other objects nearby. Do you see any tools made of metal? What materials did Amazonian Indians use to make tools? What might be some reasons why these cultures did not use metal tools until Europeans introduced them in the 16th century?

Explore More

Find your favorite metal object in the Hall of South American Peoples. Observe it carefully and draw the object. Then answer:

- How old is this object?
- Where was it found?
- What is it made of?
- What was it used for?
- What can you discover about its significance?

Be an Exhibition Explorer in GOLD

Science Explorers: Investigate natural specimens in the GOLD exhibition. These include gold nuggets, rocks, and minerals. Use the back of this sheet if you need more space.

1. Choose your favorite natural specimen. Observe it carefully and draw it below.

What is it?

Where was it found?

Describe its color, texture, shape, size, and other properties.

How much of this object seems to be made of gold? Mark your guess on this scale.

|----------|

almost no gold all gold

If this specimen contains more than gold, what other minerals does it contain?

2. Choose a specimen that looks very different from the first one. Observe it carefully and draw it below.

What is it?

Where was it found?

Describe its color, texture, shape, size, and other properties.

How much of this object seems to be made of gold? Mark your guess on this scale.

|----------|

almost no gold all gold

If this specimen contains more than gold, what other minerals does it contain?

Compare the two specimens. What are their similarities and differences?

What affects the color of gold?

BONUS: Find a map titled "World's Gold Deposit" (hint: near the gold room). Then look for the source location of your two specimens on the map.

Be an Exhibition Explorer in GOLD

Cultural Explorers: Investigate objects made by humans in the GOLD exhibition. These include jewelry, armor, personal objects, coins, and awards. Use the back of this sheet if you need more space.

1. Choose your favorite human-made object. Observe it carefully and draw it below.

What is it?

Who made it? Where and when was it made?

Describe this object.

What was it used for?

Why did you chose it?

Look at all the objects in this case. What generalizations can you make about the region?

2. Choose an object from a different case. Observe it carefully and draw it below.

What is it?

Who made it? Where and when was it made?

Describe this object.

What was it used for?

Why did you chose it?

Look at all the objects in this case. What generalizations can you make about the region?

Compare the two cases that you have selected. What comparisons can you make between the two regions?