Problem Solving: What in the World?

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a. Presentation Evaluation
Please fill out and return to the museum after the presentation. Thank you!

b. Fax Sheet
Use this form for shorter questions or concerns relating to the Art To Go visit.

Cover: Horse Bit with Ibex-Shaped Cheekpieces, 9th–7th century BC. Iran, Luristan. Bronze, W. 23.6 cm. Purchase from the J. H. Wade Fund 1980.102

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Introduction
The Problem Solving: What in the World? suitcase contains nine different kinds of objects that originate from various time periods and cultures of the world. The Art To Go presentation seeks to lead students to identify these objects by thinking in terms of their original purposes and the meanings they may have held for the people who created them. They may be difficult to identify at first glance. Even though these objects may represent different religious or cultural beliefs, uses, and designs, they also demonstrate how humans tend to solve problems in similar ways.

At a Glance
During the Art To Go presentation, the students will be encouraged to describe what they are viewing and begin to build on group knowledge to determine what the object’s original use may have been. Within this inquiry-driven setting, facts and ideas about the cultures that created these things will emerge. From the information generated by this conversation, the students will use the scientific method of inquiry to solve these problems: observation, reasoning, questioning, and comparison. It is hoped that they will develop an appreciation and understanding of the objects by successfully placing each of them within their specific historic, geographic, and cultural contexts.
One way to go about discovering just what the objects actually are is to try to determine what their original functions might have been. Humans make things for many reasons—for personal adornment, food preparation, or as useful tools to make a job simpler. Where would these things have been used? Knowing this may help! An object may have been used in the home, at work, during recreation, or perhaps in a religious ceremony. The following describes the objects in detail to help the classroom teacher participate and guide the students’ process of problem solving.

**Presentation Outline**

Oil lamps, such as the one in the Art To Go presentation, were used by people in ancient times for the illumination of homes, businesses, temples, and public buildings. They were also used as votive offerings at shrines, and included in burials. The decorative elements of the lamp served to attract the purchaser, and had little to do with its use. Everyone in the ancient Roman world used oil lamps. The wealthy elite of Rome could afford to have lamps made of fine materials such as silver or bronze with many beautiful decorations, while peasants had simple lamps made of clay. The oil lamp in the suitcase is made of clay and decorated with dolphins, a popular design of the ancient Romans.

The people that produced the brass earrings in the suitcase are called the Dayak, or Dyak, the aboriginal people of the island of Borneo, in the South Pacific. Ethnically, they are a mixture of Chinese,
Malay, and Negrito people. While some Dayak have converted to Islam, others have maintained their ancient traditions and religious beliefs. Their traditional practices once included headhunting, but that ancient custom appears to have died out as the Dayak came into contact with other cultures during the nineteenth and twentieth centuries. The Dayak continue to excel in crafts, making fine cloth and iron weapons.

These heavy, ornate earrings are fashioned into a form called an aso, usually described by the Dayaks as a dragon or dog, enhanced with tendrils and an open mouth. The aso symbol is considered to have powerful protective function and can only be used by members of the ruling class. Among the Dayak, the earlobes of infants are pierced and the resulting holes are slowly widened and stretched by the addition of more and more thin metal hoops or rings over the years. The gradually increasing weight of the earrings (as much as five or six ounces) pulls the pierced lobes into long slim hoops of skin up to seven or eight inches long for women, and just above shoulder length for men.

The snuff box, or snuff mull, from Scotland is made of an animal horn that has been fitted with a silver lid. The lid is decorated with a shamrock design and bears the initials “A McW.” The owner was most likely a man of upper- to middle-class society. Animal horns have been used by humans since Neolithic times, about 10,000 BCE, and horns have been made into containers, such as this one, for several thousand years. The horn was probably made into a snuff mull between 1820 and 1850. The oxhorn was altered by a horner who whittled down
the tip of the horn, then heated and curled it to pro-
duce a tight spiraled end. If it had been left in its
natural state, the pointed horn would have poked
holes in the pocket of the man carrying it!

Snuff is pulverized tobacco that is inhaled
through the nostrils, chewed, or placed in the cheek
People used snuff to gain the effects of tobacco. To-
bacco contains nicotine, which is a dangerous and
addictive substance. European explorers first saw
indigenous people smoking tobacco leaves in pipes
when they arrived in the New World in the 1500s.
Later, European colonies in the New World grew to-
bacco as a crop, and by the 1600s smoking was a
popular activity in Europe.

Bronze mirrors were commonly used among the
ancient Egyptians, Greeks, and Romans. The bronze
mirror in the presentation has changed a great deal
from the day that it was new, at least 2,000 years
ago. Originally, the surface was polished to a high
shine or plated with silver, but now it is dull from
corrosion. The other side is decorated with several
concentric rings in relief and a rim around the edge.
This mirror came from Greece and was made some-
time during the first century BCE. It probably be-
longed to an upper- to middle-class man or woman
who considered their appearance to be important.

Chocolate has been one of the world’s favorite
flavors for a very long time! Indigenous people, liv-
ing in the area now known as Mexico, began making
chocolate about 1,900 years ago. The ancient Maya
people used cocoa beans as money and drank a
chocolate drink during religious ceremonies. In the
early 1500s the Spanish conquistador, Hernando
Cortes, introduced chocolate to Spain. By the 1650s
there were shops selling chocolate in London. We’ve been hooked ever since! The item in the suitcase is a chocolate beater, called a *molinillo* (moh-leh-NEE-yoh), made during the twentieth century in the state of Michoacan of central Mexico. This wooden beater is made from a single piece of wood and decorated with an inlay of bone or ivory with three freely-moving rings that rattle around its central core. To use the beater, the handle is rotated back and forth between the palms of the hands with a rubbing motion (as though to keep warm). The rattle-like rings whip a mixture of chocolate, water, and sugar to produce a frothy drink of cocoa. This drink is still enjoyed by many in Mexico today where they have been using this type of beater for centuries.

By the 1600s, armorers active in Europe were making fewer and fewer full suits of armor because changes in warfare and advancements in weaponry made the use of armor obsolete. However, there were still many uses for steel hooks, such as the one shown during the presentation. It is handcrafted with finely chiseled openwork decoration. It has a loop for attaching something to it and a lever that opens by applying pressure. The steel hook came into the museum’s collection along with the Severance Collection of armor in 1916, although no one is certain of its exact use. It probably was made in Germany during the 1500s. It might have hung from a belt or chest strap. It could have held a gun powder flask, a pouch, a purse, or keys. In order to be sure about its original use, researchers will need to locate similar examples in other museums, or find images of similar hooks in tapestries, paintings, and books of that period.
India is the world’s third largest producer of cotton, after the United States and China. Cotton cloth is often dyed with bright colors in India. Though sometimes producers of cloth in India use modern synthetic dyes, they often use natural dyes obtained from plants, minerals, insects, and shellfish. For instance, the root of the madder plant makes a red dye and the indigo plant’s leaves produce a blue dye. The wood block in the presentation is a printing block from India. It is carved with the design of a flower edged by borders. This type of printing block was used to print colored designs on cotton cloth before it was made into a garment. A traditional type of Indian clothing that continues to be worn by women is the sari, a long piece of cloth dyed in bright colors with printed patterns. It is worn wrapped around the waist with the remainder draped over the shoulders.

As in many places of the world, aristocratic ladies in China went to great lengths to improve their appearance. During the 1800s, aristocratic ladies grew their fingernails to incredible lengths, which was considered quite beautiful. Nail guards such as the ones in the presentation would have protected their long nails. Aristocratic ladies with long nails were not able to work with their hands. The nail guards were only used by the wealthy, because they did not need to work. A famous Chinese woman, the Empress Dowager of China, (Tz’u-Hsi 1835–1908), grew out the nails of her third and fourth fingers on each hand to a length of approximately four to six inches. She wore nail guards to protect and decorate them. A person who once shook the Empress’s hand said that it was like clutching a handful of pencils!
The ancient Egyptians favored the use of eye paint as cosmetics for both men and women. The use of eye paint goes back as far as 4000 BCE. Cosmetics were certainly used to enhance the eyes, making them seem larger and more luminous, but eye paint had other uses as well. Two colors were popularly used—green and black. The green color had a powerful symbolic value as a representation of the eye of the god Horus. The black was the foundation for many eye medications and helped in reducing the glare of the sun (think about modern football players). Egyptians used a mortar and pestle such as the one shown in the presentation to prepare their eye paint. They began by placing a natural pigment, usually a mineral like malachite, on the mortar and grinding it to a powder with the pestle. The powder was then mixed with water or a gum adhesive to produce a paste that could be applied easily to the eyes. This mortar and pestle were carved from basalt sometime during Dynasty XII–XIII (1980–1648 BCE).
Here are a few sample questions that will guide the students to Problem Solve.

- When you are faced with an unfamiliar object, what are some of the steps you can take to help identify it? What are some of the questions you would try to answer?

- What is it made of? Is it complete? Can you see patterns in the decoration of the piece? Does the size, shape, or color tell you anything about it?

- What could it be? Is there anything that it couldn’t be? Can you make a guess and back it up with several reasons?

- What else do you need to know to solve this problem? How was the object made?

- What does it tell us about the culture that took the time to make it beautiful?

- What characteristics does it have in common with things that you know? Do we use something similar for a similar purpose?

- Today you will see things that were familiar to people who lived a long time ago. Can you imagine archaeologists finding something of yours 2,000 years from now? Would they be able to figure out what it is?
List of Objects

The suitcase contents may vary, depending on the condition of the objects.

- Oil lamp, Italy. 30–70 CE
- *Aso* earrings, Borneo. 20th century
- Snuff mull, Scotland. 19th century
- Mirror, Greece. 1st century BCE–1st century CE
- *Molinillo*, Mexico. 20th century
- Hook, Germany. 16th century
- Printing block, India. 20th century
- Fingernail guards, China. Early 20th century
- Mortar and pestle, Egypt. 1980–1648 BCE

Note: All of the objects in the suitcase are not suitable for handling. However, all works may be observed closely. Supervision of object handling is the responsibility of the Art To Go volunteer teacher. Suitcase contents may be affected by weather and object condition. The Cleveland Museum of Art reserves the right to change the objects in the suitcase at any time.
Lesson Plan

Focus
Students will be introduced to unfamiliar objects from the Art To Go collection. Students will attempt to identify objects by observation and reasoning, by questioning and comparison. They will be asked to use a scientific method of inquiry to determine in what ways these objects might have been used. The lesson will be appropriate for an upper elementary grade audience, but can be adapted to older audiences as well.

Purpose
To foster an appreciation of different cultural and historical perspectives and increase sensitivity to other cultures from around the world—how they are different from us and in what ways they are similar.

Motivation
Students will be motivated through a direct, hands-on experience. Students may be further motivated through classroom discussion, follow-up questioning, or a hands-on art project.

Objectives
● Students will learn different functions of each of the objects and how their original use affects the way they were made.
● Students will learn how each object was made.
● Students will learn about the cultures that created these objects.
● Students will explore their own modern society and discover ways in which these objects are similar or different from our own.
● Students will gain an understanding of how museum collections serve a valuable purpose by caring for objects from around the world.

Participation
The students will be asked questions from simple to complex in order to promote discussion. The students will be asked to “problem-solve” by identifying what they see. They will employ the techniques of scientific inquiry, building upon their previous knowledge through questions and responses as the lesson proceeds.

Comprehension Check
The students will be asked questions as the lesson is taught. The homeroom teacher may follow the presentation with curriculum ideas in this packet or sources listed in the bibliography. Teachers may also incorporate ideas from the lesson in an art project.

Closure
The students will reinforce what they have learned during the lesson by visiting the permanent collection of the Cleveland Museum of Art. They will be asked to make connections between the museum’s galleries and the Art To Go lesson.

Getting Ready for the Visit

● The Art To Go presentation will take about 40 minutes.
● Anyone who wishes to handle objects must wear gloves from the Art To Go presentation, which will be provided by Art To Go staff.
● We respectfully request that a homeroom teacher or events coordinator be present and attentive during the presentation.

Classroom Setup
● Please have a small table or desk available at the front of the room.
● If possible, arrange the students in a semicircle facing the presentation. This allows the Art To Go staff to pass works of art among the students.
● Please provide student identification so that the Art To Go teachers may call on students by name.
**Vocabulary**

**Aso**
A decorative design described by the Dayak as symbolic of a dragon or a dog.

**Basalt**
A type of igneous rock, usually dark in color.

**Borneo**
The third largest island in the world after Greenland and New Guinea; it is located in the southwest portion of the Pacific Ocean and its land is divided into four states: two are part of Indonesia (Sabah and Sarawak), one belongs to Malaysia, and one is the sovereign state of Brunei. Borneo is called “Kalimantan” by its inhabitants.

**Brass**
An alloy (mixture) consisting of copper and zinc in varying proportions, producing metal in many colors, often in gold. Brass lends itself well to the process of casting but tarnishes when exposed to air.

**Bronze**
An alloy (mixture) of copper and tin in varying proportions, producing a metal of rich, golden brown color that lends itself particularly well to the process of casting. Bronze was especially prized by the Greeks during the 1st millennium for small, elegant ornaments, such as a highly polished mirror.

**Dayak**
Name applied to six groups of aboriginal peoples of Borneo, especially those who live in the state of Sarawak on the island. “Dayak” is a generic term that simply means “inlander” or “uplander” to distinguish these people from coastal dwellers. They number roughly 2.5 million.

**Horner**
A craftsperson who works with animal horns.

**Kohl**
Black eye paint, usually made of galena, an ore containing lead, used by the ancient Egyptian men and women.

**Malachite**
A bright green mineral consisting of a basic carbonate of copper that often shows layers of varying colors.

**Malay**
The people of the Malay peninsula, eastern Sumatra, parts of Borneo and some adjacent islands in southeast Asia.

**Molinillo**
A Mexican chocolate beater, used for making a frothy, chocolate drink.

**Mortar and pestle**
The mortar is a strong vessel in which the substance is pounded or rubbed to a fine consistency with a pestle, a tool for pounding or grinding.

**Negrito**
A member of a black race of people who live in Oceania and the southeastern part of Asia.

**Oxhorn**
The generic term for the horns of a number of animals, such as bison, cattle, and oxen.

**Silver**
A white precious metal, capable of a high degree of polish. Silver is often extracted from ores containing other minerals such as galena and lead.

**Snuff**
Pulverized or powdered tobacco inhaled, chewed, or placed in the cheek to gain the effects of tobacco.

**Snuff mull**
The term for a container made to hold snuff, perhaps because the early containers took the form of a mill in which to grind the tobacco.

**Terracotta**
A glazed or unglazed fired clay used especially for statuettes, vases, lamps, and architectural ornaments.
Especially for students


Ganeri, Anita and Jonardon Ganeri. *Country Fact Files: India*. Austin: Raintree Steck-Vaughn Publishers, 1995. An up-to-date publication for middle school students and higher, with the country’s current production charts, pie charts, and photos of festivals and holidays.


Poulton, Michael. *Life in the Times of Augustus and the Ancient Romans*. Austin: Raintree Steck-Vaughn Publishers, 1993. Most suitable for sixth grade and up, this book tells the stories of several of Rome’s most important leaders such as Julius Caesar, Octavian, and Augustus.


Especially for teachers


Feldman, Jerome, ed. *The Eloquent Dead—Ancestral Sculpture of Indonesia and Southeast Asia*. Los Angeles: Museum of Cultural History, University of California, 1985. An in-depth look at the cultures of this region, including a good discussion and many illustrations of the aso in the Dayak culture and art.


Website

www.clevelandart.org

We encourage teachers and students alike to visit the Cleveland Museum of Art in person. We also encourage teachers and students to visit the museum’s website, where information about the museum’s permanent collection and educational programs can be found.
Webbing
Suggestions for making art the center of student learning.

Social Studies
Locate each country on a map or globe represented by the objects in the presentation. To which continents do they belong? Find out more about the cultures that have been discussed. How are they different or similar to yours?

Reading
Read more about one of the cultures described in the presentation, for example, the ancient Greeks or modern-day Dayak. Pick one of the famous people mentioned—for example, the Spanish conquistador Hernando Cortes or the Empress Dowager of China—and read more about their lives.

Problem Solving: What in the World?

Biology
Explore the long history of using animal horns as tools, vessels, and other kinds of objects. What other types of items have been made from horns throughout history? What kinds of animal horns are used and how do horners perform their jobs?

Visual Arts
Create an oil lamp out of self-hardening clay. How was the oil lamp in the presentation decorated? What type of decoration or symbol will you add to your lamp?

Science
Explore the different kinds of natural materials that people have used for thousands of years to produce colored dyes for fabrics. Find a recipe for a natural dye that you can make in your class. Collect some examples of plants, such as lichen or bark, and try to make dyes yourself.

Writing/Language Arts
Pick one of the objects in the presentation and create your own story about the person who once used the object. Use facts presented in class to add a real sense of history to your story.

Reading
Read more about one of the cultures described in the presentation, for example, the ancient Greeks or modern-day Dayak. Pick one of the famous people mentioned—for example, the Spanish conquistador Hernando Cortes or the Empress Dowager of China—and read more about their lives.
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