

By Joan Brodsky Schur

Introduction

This lesson on the trade of aromatic resins focuses on the origin of frankincense and myrrh in the Arabian Peninsula and the ways that demand for these aromatics integrated the peninsula into the trade routes of Eurasia.

Students first examine frankincense and myrrh resins to make hypotheses about their origins and uses. They use a variety of maps to make deductions about how trade routes would have connected southern Arabia to empires that rose and fell on the borders of the Arabian Peninsula. The lesson then addresses the sources of our historical knowledge about the Incense Routes. Students read and analyze a document written by Pliny the Elder in the first century and study artifacts from the Incense Routes in the exhibit "Roads of Arabia." In followup activities students may write about an imaginary journey on the Incense Routes, research and compare the use of incense in a variety of religious traditions, or analyze the ways in which infrastructure developed along the Incense Routes then facilitated travel on the pilgrimage to Makkah (Mecca) after the seventh century.

This lesson provides material relevant to understanding the exhibit "The Roads of Arabia." It can be taught as a freestanding lesson, or as a followup to the lesson "The Geography of the Arabian Peninsula."

Grade Level
7th through 12th grades

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Time Required

Two to four class periods, depending on how many of the activities you choose to implement.

Materials

Atlases

Frankincense and myrrh resins (easily ordered online from Amazon.com)

Essential Questions

How does the balance between the supply and demand of a commodity affect its value?

Why did the Arabian Peninsula remain geographically isolated from Eurasia, while connected through trade routes it controlled?

What was the effect of the Incense Routes on trade, travel, and cultural exchange?

Skills Taught

Use of maps to make historical deductions.

Close reading of a primary source document.

Artifact analysis.

Standards

National Standards for World History (7-12), Standard 5: Major trends from 1000 BCE-300 CE.

- Analyze ways in which trade networks, merchant communities, state power, tributary systems of productions, and other factors contributed to the economic integration of large regions of Afro-Eurasia.

Common Core Reading Standards for Informational Text Grades 9-10

- Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Procedure

Activity 1: Introduction to Resins

Distribute to students pieces of resin, but do not tell them where they come from, their names —frankincense and myrrh — or how you acquired them (via Amazon.com or elsewhere). Simply tell the class that the globules are organic substances called resins that at one point in history were extremely valuable, or almost “as good as gold.”

Ask students working in pairs to describe their pieces of resin in the following categories:

- Shape and size
- Color
- Odor
- Texture

Then, ask students to make hypotheses in the following categories. (At this point this is pure guesswork, but the mystery is part of the fun.)

- Potential sources of the resins – where do they come from?
- Potential use of resins — how were they used?

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Next ask students to look up a definition of resin and/or share with them the following information:

Resins are natural substances exuded by plants. They are insoluble in water, but flammable. The fluid secreted by a resin-bearing tree when its bark is cut into dries out and hardens into pieces or "tears." Resins are usually semi-transparent shades of yellow and brown. Amber is a fossilized resin, and rosin, a derived form of resin, is applied to the bows of stringed instruments. Resins can be manufactured synthetically and are used as shellac and lacquers.

Tell students that the resins in their hands are called frankincense (yellowish-white) and myrrh (brownish). Ask students if they have ever heard of these substances mentioned in the Bible. Gold, frankincense, and myrrh were the gifts brought to the baby Jesus by the Three Kings coming from the East. Because they are mentioned along with gold, the implication is that they were extremely valuable.

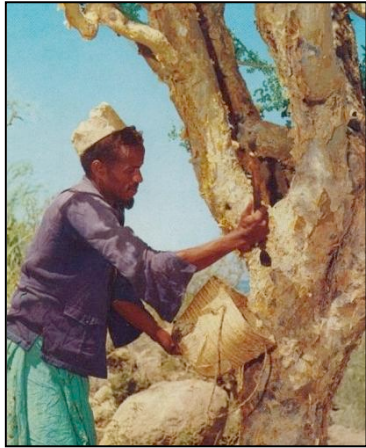
What made these substances desirable is that they were flammable and when burned exuded wonderfully sweet odors. Thus they were used as incense. Frankincense and myrrh oils (created by steam distillation) were also prized for their fragrance and were thought to have medicinal qualities. Ask the class how frankincense and myrrh might have been used long ago, in Ancient Egypt or Rome. Examples of students' answers might include:

- Burning incense at religious ceremonies
- Embalming process for dead bodies (Ancient Egypt)
- Scenting the home
- Perfumes and body oils
- Medicinal purposes and home remedies, like making plasters to help wounds heal.

⇒ Optional activity. Purchase a small incense burner (from Amazon.com or elsewhere), take the class to an outside paved location and burn the incense so that students can smell it. (The aromas are quite wonderful!)

Activity 2: Geography of the Arabian Peninsula

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A myrrh tree

Source: Wikimedia Commons
http://commons.wikimedia.org/wiki/File:Somali_man_Myrrh_tree.jpg



A frankincense tree

Source: Alexandre Baron (Flickr)
<http://blogs.scientificamerican.com/extinction-countdown/2011/12/21/christmas-frankincense-uncertain-future>

Tell students that the goal of this lesson is to discover:

- Why frankincense and myrrh were so highly valued.
- Why they cost so much.
- The consequences of trade along the Incense Route.

Now tell students that one thing that made these resins so highly valued is that they were hard to get. The resin-bearing trees only grew in one region of the Arabian Peninsula (and across the peninsula in East Africa). This fact helps to explain the supply side of what makes things valuable. If there is less of something that is in great demand, people will be willing to pay a higher price to obtain it.

Introduce aspects of the lesson on “The Geography of the Arabian Peninsula” to your students with a focus on the rainfall and ground water maps (Maps 3 and 4). Tell students that frankincense and myrrh grew in *only one region* of the peninsula. Ask students to infer possible habitats of the resin-bearing trees, keeping in mind that trees need water to grow. One possibility, which is the correct one, is the most southern portions of the Arabian Peninsula closest to East Africa (current-day Yemen and adjacent portions of Oman). Display Images 1 and 2 and ask students how the resin-bearing trees have adapted to a hilly and dry climate. (They have few leaves and thus retain more water; their roots can cling effectively to rocks.)

Divide the class into groups of three to five students.

Next ask students to study a set of historical maps including the following:

- The Assyrian Empire
- Persian Empire
- Macedonian Empire (Alexander’s Hellenic Empire)
- Mauryan Empire (India under Asoka)
- Roman Empire

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Ask students what they know about the rise and fall of these empires, some of which overlapped in time. For example, what types of religious practice did they observe?

Also ask students to analyze the maps in the Geography lesson plan, which include:

- Map 1. Map of the Arabian Peninsula and Vicinity
- Map 2. Rainfall of the Arabian Peninsula
- Map 3. Groundwater of the Arabian Peninsula
- Map. 4 Indian Ocean ports and currents

Students should now answer the following questions while viewing the above maps:

- Did any of these empires include all of the Arabian Peninsula? (no, none did)
- Did any of these empires include some of the Arabian Peninsula? (The Romans moved into the peninsula along the coast of the Red Sea.)
- Why do you think none of them conquered all or significant parts of the Arabian Peninsula? Use the relief, rainfall, and groundwater maps to help you decide this. (Essentially the desert climate was an impediment to intruders.)
- Since all of these empires had traders who wanted to acquire frankincense and myrrh (available only from southwestern Arabia) how were they going to get it?
Using the maps at hand, propose selected routes to each of these empires that Arabian traders might have used to transport their valuable aromatics. Be certain to avoid the most treacherous routes. At least three of your routes must be primarily overland, since shipping routes developed well after camel caravan trade. Pay attention to prevailing wind patterns if you use water routes.
- How would the distance between the source of frankincense and myrrh and its buyers increase their cost?
- Once groups have delineated their preferred routes, ask them to present their choices to the rest of the class.
- Compare their routes to the ones actually used on the Incense Routes by distributing or projecting Map 5: Roads of Arabia.

Activity 3. Primary Source Document Analysis: Pliny the Elder and the Incense Routes

Tell students that they are going to use a primary source document to discover why the trade in incense became so profitable. It was written by the Roman statesman Pliny the Elder (23-79 CE) who is most famous for his vast comprehensive work, *Natural History*. In it Pliny covers the natural sciences, including botany, geology, and mineralogy, as well as how natural resources can be used. To write it he consulted and referenced a wide variety of known sources of information.

Distribute the primary source document Handout 1. Working in pairs or small groups ask students to fill in the second and third columns in Handout 2.

Share students' answers. Afterwards synthesize information with the entire class by holding a discussion in which students enter information on the balance scale graphic organizer, Handout 3.

Activity 4. Assessing Archaeological Evidence and Artifacts

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Pliny the Elder wrote an account of the incense trade, parts of which historians can confirm or reject based on other evidence, both written and physical. Recently uncovered archeological evidence gives historians (and students) a new opportunity to assess what we know and think we know about trade along the routes and their significance.

→ Optional Activity: You may also ask students to compare the physical evidence left to us in the artifacts to other Roman accounts written about Arabia Felix, such as Herodotus (c. 430 BCE) and Strabo (c. 22 CE). Go to Fordham University's "Ancient Accounts of Arabia" at <http://www.fordham.edu/halsall/ancient/arabia1.asp>.

Distribute Handout 4: Artifacts from the Incense Routes (adapted from the exhibit "Roads of Arabia"). All of the objects come from within the borders of what is now Saudi Arabia. Also distribute Handout 5: Assessing Artifacts from the Incense Routes.

Assign students to work in small teams divided by geographic region (as per below). Make certain that students read the background information about their region, can point to key places on a map, and understand the region's role along the Incense Routes. Students should fill in a printout of Handout 5 for each object they are assigned. For further information about two of these regions go to the Incense Routes Map at <http://www.roadsofarabia.com/exhibition/index.html> and click on the arrows to see a brief movie.

The artifacts used in this activity will not necessarily tell us about the Incense Routes per se. What they can attest to is the wealth acquired by some regions along the routes and the exchange of material goods, artistic styles, and religious practices along the routes. Stylistically we can see the influence of Egyptian and Mesopotamian art forms in the Arabian Northwest, and Hellenic and Roman influence in the Arabian Southwest and Northeast.

⇒ Optional: Assign students to read, "Ruins in Yemeni Desert Mark Route of Frankincense Trade" (*New York Times*, January 28, 1997). Ask them to assess the reliability of Pliny's account in relation to the discovery of new artifacts as described in the article.

Geographic Regions

- Southwest:
 1. Fragment of a Funerary Bed
 2. Incense Burner
 3. Head of a Man
 4. Statuette of Heracles

- Northwest:
 1. Pedestal or Altar
 2. Head of a Statue
 3. Al-Hamra Stele
 4. Statue of a Man

- Northeast:
 1. Funerary Mask
 2. Anthropomorphic Leg of Bed

3. Necklace with Came

After all groups have finished analyzing their artifacts ask them to share what they have learned about the impact of trade in their region with the entire class. Use the questions below to guide discussion. Keep a running list of answers and evidence on the board.

What can these artifacts tell us about life along the Incense Routes?

- What do these artifacts tell us about the material wealth and lifestyles of Arabian communities along the Incense Routes? Do they confirm that the trade brought wealth to the ruling classes and other members of society?
- Was there an exchange of material goods, artistic traditions, or religious practices along the Incense Routes? What is your evidence?

Suggested Follow-Up Activities

- Assign students to write an account of an imaginary journey along the Incense Routes, from its source to one of its markets. Students should draw on information they garner from the background essay for this lesson, the lesson on Arabian Geography, Pliny's account of the Incense Routes, and the artifacts from the Roads of Arabia exhibit.
- Assign students to research and write about the use of incense in religious traditions along the Incense Routes, including Judaism, Roman and Eastern Christianity, Hinduism, Zoroastrianism, Buddhism, and the pagan religious traditions of the Greeks and Romans. How are they similar and how are they different?
- Ask students to create an exhibit of incense burners from many cultures along the Incense Routes. What things do they share in common? How is their design related to their use, as well as to the beliefs of their users? Is there evidence of cultural exchange from the incense burners from different geographical and civilizational regions?
- Assign students to write an essay in which they compare the reach and impact of the Incense Routes to the Spice Routes and Silk Routes.
- In order to support trade on the Incense Routes, different types of infrastructure were developed to facilitate the movement and safety of camel caravans – from wells to caravanserais. Study ways in which the Incense Routes paralleled routes later used on pilgrimage to Mecca (Makkah) and Medina. Use the map in Activity 2 of this lesson, which shows the Incense Routes as well as pilgrimage routes.

Resources:

Caravan Kingdoms Yemen:

<http://www.asia.si.edu/exhibitions/online/yemen/launch.htm>

Herodotus, The Histories c. 430 BCE and Strabo, Geography c. 22 CE"

<http://www.fordham.edu/halsall/ancient/arabia1.asp>

The Frankincense Trail, BBC:

<http://www.bbc.co.uk/programmes/b00mfzjr/episodes/guide>

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Map of the Civilizations of West Asia 1-500 CE, Metropolitan Museum of Art:
<http://www.metmuseum.org/toah/world-regions/#/05/West-Asia>

Also see the Metropolitan Museum of Art's Timeline of Art History:
<http://www.metmuseum.org/toah/>

Robert G. Hoyland, *Arabia and the Arabs: From the Bronze Age to the Coming of Islam*, (New York: Routledge, 2001).

Bibliography from the Sackler Gallery:
http://www.roadsofarabia.com/pdf/Roads_Of_Arabia_Bibliography.pdf

Email your request for complimentary classroom copies of Saudi Aramco World's special exhibition issue "Roads of Arabia" to EK.Catchings@AramcoServices.com, using the subject line "Roads of Arabia Special Request." Requests will be filled as long as supply lasts. Full-text digital articles, and the "Classroom Guide," are available at www.saudiaramcoworld.com.

Articles in Saudi Aramco World available for free download at
<http://www.saudiaramcoworld.com/issue/201206/default.htm>

- "Roads of Arabia" By Richard Covington, 2011
- "Discovery at al-Magar" By Peter Harrigan, 2012
- "Mapping Arabia" Written by James V. Parry, Maps courtesy of Bukhari Collection of Antique Maps of Arabia, 2008
- "New Pieces of Mada'in Salih's Puzzle" By Peter Harrigan, 2007
- "Journeys of Faith, Roads of Civilization" By David W. Tschanz, 2004
- "The Hidden History of Scented Wood" By Erik Hansen, 2000
- "Art Rocks in Saudi Arabia" By Peter Harrigan, 2002
- "Early Mankind in Arabia" By Norman M. Whalen and David W. Pease, 1992

THE INCENSE ROUTES:
FRANKINCENSE AND MYRRH, AS GOOD AS GOLD

Background Essay

Frankincense and myrrh were the most highly prized commodities in the lucrative trade in aromatics from southern Arabia, which lasted for at least a thousand years, reaching its peak in the second to the third century CE. Both frankincense and myrrh are resins from trees that grew only in southern Arabia (today's Yemen and parts of Oman) and in northeast Africa (Somalia). Myrrh is derived from the tree species *Commiphora myrrh*, which produces resins that are reddish-brown. Frankincense, also known as olibanum, comes from the genus *Boswellia*. Its resins are yellowish white.

These resin-bearing shrub-like trees are able to grow in dry and rocky areas. In turn, their roots help to prevent further erosion of the soil. When their barks are cut into, resin exudes from the wounds, forming tear-shaped globules. The aromas produced by burning the resin of frankincense and myrrh mask the stench of everything from dead bodies to garbage to body odor. The Ancient Egyptians used frankincense to embalm mummies. Oils produced from frankincense and myrrh were valued as perfumes and cosmetics. They were believed to have medicinal qualities, for example as poultices applied to wounds. The resins were also used as insect repellents. Both aromatics were used—and continue to be used—as incense at religious ceremonies in many parts of the world. The fragrant smoke was thought to purify holy places as the scent rose heavenward. For all of these reasons, resins were highly sought after in places as far away from Yemen as Mesopotamia, Egypt, Rome, India, and even China.

Frankincense and myrrh became highly prized luxury goods because of their limited supply and high demand. Transporting them from the Arabian Peninsula to faraway locations only increased their expense. In the New Testament Matthew describes the gifts brought by the Three Kings from the East to the baby Jesus of “gold, frankincense, and myrrh” — suggesting the aromatics were as highly prized as gold.

The early centuries of the aromatics trade relied on overland routes. The kingdom of Saba (biblical Sheba) and Himyar, both located in today's Yemen, grew wealthy by nurturing the resin-bearing trees. The domestication of the camel was crucial to the trade in transporting frankincense and myrrh out of their limited habitat. Most of the Arabian Peninsula is desert, and only camels are able to carry heavy loads for long distances without frequent watering (See the companion lesson on, “The Geography of the Arabian Peninsula”). Camel caravans were organized to prevent robbers from stealing these costly goods.

One route took the caravans hundreds of miles from current-day Yemen into Egypt and Palestine via an inland route that paralleled the Red Sea. Other routes crossed the Arabian Peninsula from west to east. One such pathway stopped at the oasis towns of Qaryat al-Faw and Riyadh (in current-day Saudi Arabia), then paralleled the Arabian Gulf to Basra, in present-day Iraq. The lost city of Gerrha on the Persian Gulf was one city that profited from the trade of aromatics in exchange for spices, silk, and precious stones from Asia. The Nabataeans in the northwest of Arabia grew wealthy as

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middlemen between southern Arabian and the Romans to the north. The Incense Routes encouraged the maintenance of wells and the building of forts and caravanserais, where traders could temporarily store their animals and goods.

Historians have long known about the Incense Routes from primary source documents (including maps and histories) written in the Hellenic and Roman eras. Archaeologists have also uncovered an increasingly rich source of artifacts from along the Incense Routes. Unearthed objects such as incense burners, pottery, and steles provide visual documentation of the ways in which different societies along the routes influenced each other's aesthetic traditions. One archeological expedition found stone monuments called triliths, thought to be markers along the caravan routes.

The Romans called southern Arabia *Arabia Felix* or "Happy Arabia" because of the wealth generated there by the Incense Routes. At several points in history the Romans tried to co-opt the overland trade in aromatics, but they never mastered the deserts that protected it. They did, however, learn to sail the monsoon winds (see "Geography"), which provided them with other routes to the luxury goods they sought.

The rise of Christianity took a toll on the Incense Routes. The early Christians frowned on pagan cremations infused with incense, preferring simple burial of the body. Christianity also discouraged sacrifices, in which aromatics played such an important part. Beyond religious practice, early Christians were critical of the lavish incense-infused lifestyle of Rome's "rich and famous." However, the eventual replacement of pagan practices requiring incense by Christian practices did not entirely repress the trade, as aromatics eventually found their way back into church ceremony. However, the trade never again reached the heights it enjoyed during the pre-Christian era. Today both frankincense and myrrh are still widely used as incense and in beauty products.

Handout 1

Primary Source Document: "The Incense Trade," by Pliny the Elder (23-79 CE)*

[1]The chief products of Arabia then are frankincense and myrrh... no country besides Arabia produces frankincense, and not even the whole of Arabia. About in the middle of that country are the Sabaei [Pliny refers to the Kingdom of Saba in the southwest of the Arabian Peninsula] situated on a lofty mountain. Eight days' journey from Saba is a frankincense-producing district belonging to the Sabaei called Sariba — according to the Greeks the name means 'secret mystery.' The region faces north-east, and is surrounded by impenetrable rocks, and on the right hand side bordered by a seacoast with inaccessible cliffs....

[2]It was these people who originated the trade and who chiefly practice it. None of the Arabs beside these have ever seen an incense-tree, and not even all of these, and it is said that there are not more than 3000 families who retain the right of trading in it as a hereditary property, and that consequently the members of these families are called sacred, and are not allowed to be polluted by ever meeting women or funeral processions when they are engaged in making incisions in the trees in order to obtain the frankincense. In this way the price of the commodity is increased owing to scruples of religion. Some persons report that the frankincense in the forests belongs to all these peoples in common, but others state that it is shared out among them in yearly turns. Nor is there agreement in regard to the appearance of the incense-tree itself.

[3]We have carried on operations in Arabia, and the arms of Rome have penetrated into a large part of it; indeed, Gaius Caesar, son of Augustus, won great renown from the country; yet no Latin writer, so far as I know, has described the appearance of this tree. The descriptions given by the Greeks vary...It is well known that it has the bark of a bay-tree, and some have said that the leaf is also like that of the bay. At all events that was the case with the tree when it was grown at Sardis — for the Kings of Asia also interested themselves in planting it. The ambassadors who have come to Rome from Arabia in my time have made all these matters still more uncertain, which may well surprise us, seeing that even some sprigs of the incense-tree find their way to Rome, on the evidence of which we may believe that the parent tree also is smooth and tapering and that it puts out its shoots from a trunk that is free from knots.

[4]It used to be the custom, when there were fewer opportunities of selling frankincense, to gather it only once a year, but at the present day demand introduces a second harvesting. The earlier and natural gathering takes place at about the rising of the Dogstar [the bright star Sirius], when the summer heat is most intense. They make an incision where the bark appears to be fullest of juice and distended to its thinnest; and the bark is loosened with a blow, but not removed. From the incision a greasy foam spurts out, which coagulates and thickens, being received on a mat of palm-leaves... while the residue adhering to the tree is scraped off with an iron tool, and consequently contains fragments of bark.

[5]The forest is divided up into definite portions, and owing to the mutual honesty of the owners is free from trespassing, and though nobody keeps guard over the trees after an

incision has been made, nobody steals from his neighbor.

[6]At Alexandria, on the other hand, where the frankincense is worked up for sale, good heavens! No vigilance is sufficient to guard the factories. A seal is put upon the workmen's aprons, they have to wear a mask or a net with a close mesh on their heads, and before they are allowed to leave the premises they have to take off all their clothes: so much less honesty is displayed with regard to the produce with them than as to the forests with the growers....

[7]Alexander the Great in his boyhood was heaping frankincense on the altars in lavish fashion, when his tutor Leonides told him that he might worship the gods in that manner when he had conquered the frankincense-producing races; but when Alexander had won Arabia [in fact he only reached its edges] he sent Leonides a ship with a cargo of frankincense, with a message charging him to worship the gods without any stint.

[8]Frankincense after being collected is conveyed to Shabwa on camels. The prices vary with the supply of buyers. A tithe [tax of one tenth] estimated by measure and not by weight is taken by the priests.... It can only be exported through the country of the Qatabanians and accordingly a tax is paid on it to the king of that people as well. Their capital is Timna, which is 1487 miles distant from the town of Gaza in Judaea on the Mediterranean coast.

[9]The journey is divided into sixty-five stages with halts for camels. Fixed portions of the frankincense are also given to the priests and the king's secretaries, but besides these the guards and attendants and the gatekeepers and servants also have their pickings. Indeed all along the route they keep on paying, at one place for water, at another for fodder, or the charges for lodging at the halts and the various tolls. Hence expenses mount up to 688 denarii [Roman coin] per camel before the Mediterranean coast is reached. Then again payment is made to the customs officers of our empire. Consequently the price of the best frankincense is six, of the second best five, and of the third best three denarii a pound.

[10]No tithes are given for myrrh as it also grows in other countries. However the growers have to pay a quarter of the yield to the king of the Qatabanians. For the rest it is bought up all over the district from the common people and packed into leather bags. Our perfumiers have no difficulty in distinguishing the different sorts [of myrrh] by the evidence of the scent and consistency. There are a great many varieties. The prices vary with the supply of buyers. That of myrrh-oil ranges from three to fifty denarii a pound, whereas the top price for cultivated myrrh is eleven denarii.

*As edited from the *Natural History* by Pliny the Elder, 12:51-70 available on the Internet Archive, at http://archive.org/stream/naturalhistory04plinuoft/naturalhistory04plinuoft_djvu.txt, and as quoted in Robert G. Hoyland, *Arabia and the Arabs: From the Bronze Age to the Coming of Islam* (London: Routledge, 2001), 105-106.

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Handout 2: Close Reading of Pliny the Elder

Answer each question, citing information from the document by paragraph number.

1. What sources does Pliny refer to?

2. Give an example of information provided by Pliny that is not convincing. Why do you think so?

3. Give an example of information that you believe is reliable. Why do you think so? Why do you think Pliny is interested in detailing this trade?

4. What is the route that Pliny describes from the source of frankincense and myrrh to its final destination?

5. Why is it in the interest of the Sabaeans to control the supply of frankincense and myrrh? Explain how they do this.

6. What evidence is there that the demand for frankincense and myrrh has increased?

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7. How do regional powers profit from gaining control of a stop along incense route?
How does this increase its price?

8. How does the cost of transportation increase the cost of frankincense?

9. What other factors determine the amount that buyers are willing to pay for the product?

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Handout 2: Close Reading of Pliny the Elder (Answer Key)

Questions	Possible Answers	Paragraph cited
1. What sources does Pliny refer to?	"according to the Greeks" "the descriptions given by the Greeks vary"	1. & 3.
2. Give an example of information provided by Pliny that is not convincing. Why do you think so?	The sacred Sabaen families who can never meet women or funeral processions. This would require intimate knowledge of their society, yet Pliny admits that they cannot even be sure what F. & M. look like. This sounds like hearsay and a bit of fantasy, needing further verification.	2.
3. Give an example of information that you believe is reliable. Why do you think so?	The method of making incisions on the trees is very detailed and can be corroborated from what else we know. "Then again... customs officers of our empire." Pliny would know this first hand.	4. 9.
4. Why do you think Pliny is interested in detailing this trade?	As a Roman he would want Rome to get the best possible price of F. & M., if not control of the trade itself.	
5. What is the route that Pliny describes from the source of frankincense and myrrh to its final destination?	Pliny describes the trade that parallels the Red Sea from Saba, through Qataba, up to Gaza.	All
6. Why is it in the interest of the Sabaens to control the supply of frankincense and myrrh? Explain how they do this.	If other regions planted the trees the Sabaens would lose control of the profits. The Sabaens keep secret information about the resins and how they are made. Their ambassadors in Rome seem to intentionally give the wrong description of the trees.	2.
7. What evidence is there that the demand for frankincense and myrrh has increased?	There are two plantings instead of one. At Alexandria the workers steal the goods if not watched. It is used unstintingly by Leonides to show off a victory.	4.
8. How do regional powers profit from gaining control of a stop along incense route? How does this increase its price?	It is tithed by the regional powers in control of production or transportation en route. The Qatabanians also tax it.	8.
9. How does the cost of transportation increase the cost of frankincense?	At every step of the way the transporters must pay tithes or taxes to regional powers. Priests, secretaries, gatekeepers and servants take a cut. Transportation costs include paying for	8. 9.

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	water, fodder and lodging. Sellers must charge more to cover these costs.	
10. What other factors determine the amount that buyers are willing to pay for the product?	The quality of the two resins is judged with great specificity. Myrrh-oil can vary from 3 to 50 denarii	10.

Handout 3: Balance Scale

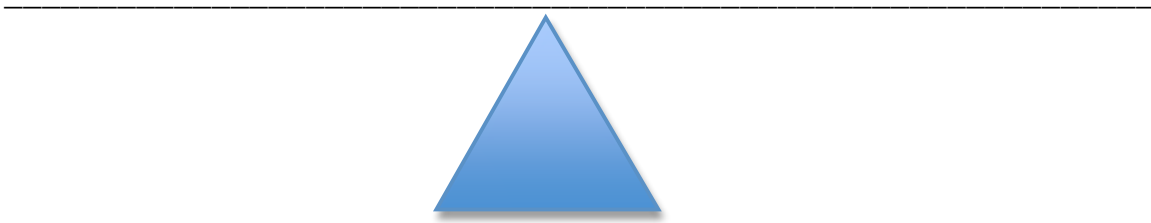
What Factors Might Increase or Decrease the Cost of Frankincense and Myrrh?

Increase

1.
2.
3.
4.

Decrease

1.
2.
3.
4.



Handout 4: Artifacts from the “Roads of Arabia” Exhibit

Southwest

Qaryat al-Faw was situated on the border of the Empty Quarter, Arabia’s vast desert, and near Yemen, a center of incense production in the south of the peninsula. It was an ideal stopping point for caravans traveling from southern Arabia to the northwest and to the northeastern coastal areas. The numerous archaeological discoveries in Qaryat al-Faw attest to its strong trade relations with the Mediterranean and Yemeni worlds.



Fragment of a Funerary Bed
Qaryat al-Faw, Saudi Arabia
Early 1st century CE
Gilt bronze
H x W: 29 x 3 cm
Department of Archaeology Museum, King
Saud University, Riyadh

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Incense Burner

4th-1st century BCE

This incense burner uses architectural motifs and has a serpent running up one side. The many incense burners found at Qaryat al-Faw, a major trading center in the southwest, indicate that the population both traded and actively used incense in their own rituals. Incense burners were often inscribed with the owner's name, a dedication to a deity, or a list of incense types and perfumes popular at the time.

Qaryat al-Faw, Saudi Arabia

Limestone

H x W: 25 x 9 cm



Head of a Man

1st century BCE-2nd century CE

This bronze head was originally part of a life-sized statue. Although partially damaged, the face is visibly treated in a Greco-Roman style, while the thick curls are typical of local workmanship. During the first and second centuries CE, southern Arabia enjoyed strong commercial contacts with the Mediterranean world and the Roman Empire, which is also apparent in the arts and material culture of the period.

Qaryat al-Faw, Saudi Arabia

Cast bronze

H: 40 cm

Department of Archaeology Museum, King Saud University, Riyadh, 119 F 13



Statuette of Heracles

1st-3rd century CE

The small exceptional statue of the Greek hero Heracles is identifiable by his lion skin and club. Originally, he would have held a drinking vessel in his right hand, an attribute of Heracles-Bibax or the drinking Heracles. This form of Heracles was associated with Dionysus, the Greek god of banqueting and wine, whose cult was popular in Qaryat al-Faw.

Qaryat al-Faw, Saudi Arabia. Bronze H: 25.3 cm.

Department of Archaeology Museum, King Saud University, Riyadh, 214 F 7

Northwest

Many of the incense routes to Egypt, Mesopotamia, and the Mediterranean region passed through northwestern Arabia. One of several stations along the route was Tayma, the most ancient oasis in Arabia. Tayma's wealth and reputation was such that in the sixth century BCE, the Babylonian king Nabonidus stayed there for ten years. Situated in the lush oasis of al-Ula, Dedan provided shelter and sustenance for caravans from the sixth to the first century BCE. Even verses in the Old Testament praise its fresh waters. The Lihyanites, who ruled the area during this period, developed a complex and original artistic tradition, including impressive monumental sculptures that are seen for the first time in this exhibition. In the first century BCE, the Lihyanites lost power to the Nabataeans, whose kingdom centered on Petra in southern Jordan. The Nabataeans actively participated in the incense trade and made their fortune by controlling trade with the Roman Empire. Like Petra, Mada'in Saleh in northwestern Arabia features many tombs that are carved into the surrounding sandstone cliffs, creating a spectacular vista in the desert.



Pedestal or Altar
5th-4th century BCE

The so-called al-Hamra cube was discovered in the al-Hamra Temple at Tayma, an important trading city in northwestern Arabia. Its fine decoration confirms the integration of Egyptian and Mesopotamian motifs into local religious practices, such as the worship of the local god Salm. The bull with a solar disk between its horns relates to the Egyptian bull deity Apis, while the winged disk was inspired by Mesopotamian and Iranian examples. Tayma, Saudi Arabia Sandstone H x W x D: 41 x 38 x 39 cm



Head of a Statue
Tayma, Saudi Arabia
4th–2nd century BCE
Sandstone
H (approx): 50 cm
Tayma Museum



Al-Hamra Stele
Tayma, Saudi Arabia
ca. 4th century BCE
Sandstone
H x W: 102 x 45 cm
National Museum, Riyadh National
Museum, Riyadh



Statue of a Man
4th-3rd century BCE
Standing tall and erect, this impressive, larger than
life-size statue is one of several examples found in
the Lihyanite temple of Dedan in northwestern
Arabia. The formal pose and well-defined
musculature recall Egyptian and Syrian models that
have been interpreted according to the local
Lihyanite tradition. An inscription on another
statue helps identify them as kings of the Lihyanite
dynasty.

Al-Ula, Saudi Arabia
Red Sandstone
H x W: 230 x 83 cm
Department of Archaeology Museum, King Saud
University, Riyadh, 137D4, 136D4

Northeast

From about 3300 to 1300 BCE, northeastern Arabia served as a vital stop for ships from southeast Asia and Oman to Mesopotamia. The region grew so wealthy that Mesopotamian myths identified it as paradise.

The most important city in the northeast was Gerrha, but it has yet to be discovered. It was also known as one of the wealthiest centers that rose to prominence during the Hellenistic period (first and second centuries CE). Scholars have identified the site of Thaj, where they have found a royal tomb with precious objects from the Mediterranean world, with the legendary Gerrha.





Funerary Mask

1st century CE

In the summer of 1998, a group of Saudi archaeologists stumbled upon a magnificent royal tomb outside Thaj, a city in northeastern Arabia. Datable to the first century CE, it belonged to a young girl, whose body was covered with gold, rubies, and pearls. The funerary objects buried with her were decorated with Hellenistic motifs, which must have been imported. The use of a gold funerary mask was probably also inspired by Hellenistic practices and further affirms Thaj's contacts with the Mediterranean world and familiarity with its customs and traditions.

Thaj, Tell al-Zayer, Saudi Arabia

Gold

H x W: 17.5 x 13 cm

National Museum, Riyadh, 2061



Anthropomorphic Leg of Bed

Thaj, Saudi Arabia

1st century CE

Iron, bitumen, and lead

H: 46 cm

National Museum, Riyadh



Necklace with Cameo

Thaj, Saudi Arabia

1st century CE

Gold, pearls, turquoise, and ruby

W x Diam: 38.5 x 5 cm

National Museum, Riyadh

THE INCENSE
ROUTES

*All written and visual information in this packet is taken from the "Roads of Arabia" website at <http://www.roadsofarabia.com/>

Handout 5: Assessing Artifacts from the Incense Routes

Question	Sources of Information	Answers
Artifact Studied:		
Origin: Where is this artifact from?	Label. Research the place it is from.	
Age: How old is it?	Label. Research this time in history across Eurasia.	
Materials: Are all of the materials used in this artifact indigenous to where was it made? Were some imported?	Label. Research whether the materials are indigenous to the place it was found. Were they natural or manmade?	
Manufacture: What tools and processes might have been used to make it?	Inference. Research into the process of making things in stone, bronze, etc.	
Size: What are the artifact's dimensions?	Label. Is it miniature, life-size, or monumental? What might this say about its use?	
Form and Function: What shape is it? How do its size and form relate to how it was used?	Label and Observation. Does the label tell us for certain how this artifact was used? What other possibilities does the artifact suggest?	
Aesthetics Does this object reflect or share artistic styles with another ancient culture that borders the Arabian Peninsula?	Label. Maps of surrounding civilizations. The Heilbrunn Timeline of Art History at http://www.metmuseum.org/toah/	