The Uluburun Late Bronze Age Shipwreck

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Freemont, California

Subject: Ancient World History

Level: Grades 6 and 7

Length of Unit: One week

Readings for the Teacher: Casson, Lionel. *Travel in the Ancient World*. Baltimore: Johns Hopkins University Press, 1994. (Note: Please see Teacher and Student Resources in the lesson plan below for additional readings and resources.)

Part One: Introduction

Fremont is a fast-growing city of 240,000 in the southeast San Francisco Bay region. It is adjacent to the famed Silicon Valley and is currently undergoing extensive expansion related to high tech industries. Thornton Jr. High School is one of five junior high schools in the Fremont Unified School District. Thornton has distinguished itself in the areas of curriculum development in the teaching of history and science and has been named a State Middle School Demonstration School. It is the only school in the district to have received a Golden Bell award from the State School Boards Association for innovative and creative curriculum development. The program was the "Trekking through the Stone Age" project which I wrote and developed. Approximately 800 students attend Thornton. As chairperson of the History Department, I teach Honors World History and regular World History classes. I have taught at Thornton for twenty years.

Encouraging students to use the multitude of electronic resources available in our expanding definition of education for the twenty-first century requires the development of a wide range of decision making abilities. The process includes determining what is known for certain, what is possible, and what questions are still left to be answered. Marine archaeology offers an exciting opportunity for students to look beyond the trade paths etched in distant lands and realize that great winds have given full sail to ancient ships that sang strongly on seas, galleys heavily laden with cargo, and small crafts plying coastal trade. By expanding the panorama of history, the intricacies of economic expansion and cultural contact become interlaced with technology, the arts, and a new appreciation of resources.

Part Two: Objectives & Resources

Rationale:

A shipwreck raises a number of intricate questions regarding technology, resources, trade paths, and cultural contact. The large museum in the world is the sea, and as yet archaeologists still have many questions to answer regarding how early people navigated and traded in the ancient Mediterranean. The careful preservation of underwater finds and analysis of artifacts may lead us a step loser to understanding our ancient forebears.

Objectives:

Students will:

1. Collect information regarding early Minoan trade and Mycenaean trade and complete a chart showing import goods, export goods, and evidence that proves cultural contact.
2. Complete a map of the Mediterranean area indicating resources and location
3. Select cargo to load on the Uluburun ship and place in the ship's hull
4. Analyze selected cargo and compare with debris field of the Uluburun wreck
5. Determine what is known for certain, what is possible and what questions are still left to be answered.

Teacher Resources:

Web Sites:

- http://www.cobblestonepub.com/
  This site is the homepage for Cobblestone, the publisher of *Faces*, *Calliope*, *Cobblestone*, *Dig*, and other magazines for students. You may visit the archive to check for back issues related to archaeology or order the issue on Mediterranean Trade by calling 1-800-821-0115 directly. Back issues are around $4.00 each.
- http://projectsx.dartmouth.edu/history/ bronze_age/
  This site is an excellent source of information on aspects of Mycenaean trade. Although the shipwreck under discussion is the Cape Gelidony shipwreck and not the Uluburun wreck, there are some obvious similarities between the two. George Bass was the lead archaeologist on both the Uluburun and the Cape Gelidonia excava-

tions. Both shipwrecks are close in date and carried similar cargo—ox-hide ingots, tin, bronze scrap, pottery, weights, scarabs, cylinder seals, and amber. This article is nine pages long and an excellent source of information.

- http://www.d.umn.edu/~ahartley/Proposal_intro.html. Mr. Alan H. Hartley has been working on a historical dictionary of Mediterranean nautical terms which may be of interest. A brief chart can be downloaded from the Internet showing the same term in a number of languages although closely related to Italian. This raises a question that deserves some consideration. How did ancient traders ply their coastal trade successfully when different language on board the same ship as well as port presented a problem? The site is extensive and worth your consideration of this topic, in light of the many languages involved in ancient as well as modern trade.

Periodical:

Archaeology is a periodical published by the Archaeological Institute of America. It is an authoritative and engaging magazine with wide public appeal. It should be included in your reading library. http://www.archaeology.org

Student Resources:

Readings:

1. Bass, G., "Oldest Known Shipwreck" (see General Bibliography). This back issue may be purchased for $2.50 on the Internet at http:kbc.com/sales.ngs/mags.htm Items used in lessons (taken from articles by George Bass mentioned above): 1A—Bronze Age Trade Map, p. 697–698. Figure 2, and 1B—Bronze Age Trade, p. 699. Figure 3.

2. "Mediterranean Trade." *Faces* (January 1990).

Web Site:

http://ina.tamu.edu/ (click on "Virtual Museum of Nautical Archaeology," then click on "The Uluburun Bronze Age Shipwreck"). This is a detailed report of the excavation of the Uluburun shipwreck.

Handouts for Classroom Use:

(Note: The handouts listed below, some drawn from the readings listed above, are planned to be used in the lessons which follow.)

Handout 1: Ancient Minoan Trade chart based on article "Minoan Trade," *Faces*, pp. 4–8 (see supplementary material and Answer Key at end of section).

Handout 2: Oversized Map of the Mediterranean, *Faces*, pp. 18–19. Note: Original map should be enlarged at least 200% (if you are unable to obtain map, other maps contained in this book may be used as substitutes).

Handout 3: Uluburun Hull (drawn by student R. Lozano).

Handout 4: Cargo Manifest for Uluburun Ship- declaration of what is on board (original creation).

Handout 5: Partial Cargo of Uluburun Ship—chart with pictures (from article in *National Geographic*).

Handout 6: Debris field of Uluburun Wreck (Cemal Pulak article, "1994 Excavation of the Uluburun, the Final Campaign," at http://ina.tamu.edu/QUARTER/ulub.htm. Go to http://ina.tamu.edu, click on "Virtual Museum of Nautical Archaeology," then click on "The Uluburun Bronze Age Shipwreck," then "Site Plan."

Part Three: Classroom Procedures

Lesson One

Introduction: Establish the Bronze Age dates from circa 3000 to 1100 B.C. The historical period of the Bronze Age derives its name from the use, during that era, of metal, rather than the stone used in earlier periods. Bronze is an alloy, a mixture of copper and tin. Bronze is harder than either of the two metals and will hold a cutting edge. The word Mediterranean means in its Latin roots "the middle of the earth." The Mediterranean Sea was an important trade path as early as the Bronze Age. Assist students in defining "export," "import," and "cultural contact."

1. Using Handout 2, Mediterranean World map from *Faces*, have students read "Minoan Trade" by Bernice R. Jones, pp. 4–8, in the issue of *Faces*. Then direct students to complete the Ancient Minoan Trade chart (Handout 1) by writing information in the appropriate boxes.

2. Using the *National Geographic* article on the Uluburun shipwreck (listed above under George Bass) and map of the Mediterranean (Handout 2), have students draw in the location of resources as indicated on the *National Geographic* map (Resource 1A, figure 2). Internet student resource #2 may also be helpful, to a very limited degree.

3. Add to the Oversized Map of the Mediterranean (Handout 2) the location of goods imported and exported by the ancient Minoan Trade chart (Handout 1). Caution students to make their drawings clear and label them since they will need this information to "set sail" in the activity that follows.

Questions to Think About

Why was tin an important metal?
Answer: Tin was in limited supply in the ancient world.

When copper and tin are melted together so that their atoms are thoroughly mixed, the alloy bronze is formed. Bronze is useful for making tools and weapons. Probably rock with copper ore and other rocks with tin ore were heated in a fire, since copper and tin reduction by carbon (fire) bonds the two metals. Because this process was developed, bronze became an important metal that could be sculpted into many shapes and used for many purposes. It was more durable than stone.

How large was the Uluburun ship, and how much copper and tin did it carry in its cargo?
Answer: The ship was 50 feet long, yet was carrying enough copper and tin to make 3,000 spearheads, 3,000 bronze swords, 300 bronze helmets, and 300 bronze corselets; it was also carrying a large number of amphoras and other items.

Lesson Two

1. Direct Students to study the map of the possible trade route for the Uluburun as printed in *National Geographic* (Resource 1A, figure 2).

Notice the possible route is circular using the old Minoan route and connecting islands, the Middle East, and Africa. Also note that it is primarily a coastal route offering the opportunity to stop numerous times and take on cargo and off-load as well.

Notice the placement of Baltic amber and other resources like African ebony that are a great distance from the possible route. How could resources from such a distance possibly become part of the east Mediterranean trade circuit?

2. Divide students into teams of four or five. Give each team one copy of drawing of the Uluburun ship's hull (Handout 3) and one copy each of a Cargo Manifest (Handout 4) and Partial Cargo chart (Handout 5).

Ask students to locate Knossos on the map. Compare map of the Mediterranean in Bass article (Resource 1A) with Oversized Map of the Mediterranean from *Faces* (Handout 2).

Uluburun Ship Role Play (Part of Step Two)
Teacher: As the captain aboard the ship, you announce the following as you prepare to sail from Knossos:

"You are deckhands aboard the ship and in charge of loading cargo. Look at the pictures in the Partial Cargo handout (Handout 5). Review what you have written on your chart on Ancient Minoan Trade (Handout 1), and notice what resources you have drawn on Oversized Map of the Mediterranean (Handout 2). At the end of your journey you expect to return to Knossos."

- What will you load on your ship at Knossos?
- How much of this product will you load?
- Where will you place it on the Uluburun Ship? Why?

When you have made your decision as a team, ask one student to become the first mate and complete your Cargo Manifest (Handout 4). Other members of the crew will cut and paste the cargo into the Uluburun hull. Your crew may also elect to draw and label pictures for products they wish to load on the ship in the boxes provided and then cut and paste them into the Uluburun ship's hull.

When your team has completed loading and filled out the Cargo Manifest, your boat will set sail for Mersa Matruh. Please label it on your map. Once you have reached the port of Mersa Matruh, you will make some decisions. What cargo will you load? How much of it will you load? Where will you place it on the Uluburun ship? Will you off-load a product? If so, what and how much? Refer to your Oversized Map of the Mediterranean (Handout 2) to help in these decisions.

Continuation of Role Play (Steps 3 and 4 of Lesson Two)

3. The students should continue to each of the ports indicated on the National Geographic map: Tell el-Ajjul, Ascalon, Akko, Tyre, Byblos, until they reach the port Kyrenia, Cyprus. All teams will wait at Cyprus and leave together for Kas.

4. Announce: We will sail to the Kas point and anchor. Please check your cargo Manifest (Handout 4) and made sure that it is complete. Collect all of the Cargo Manifest sheets and loaded hull sheets.

Lesson Three (Another Role Play)

1. Announce the following: It is now 1984. The Uluburun ship has been lying at rest in a watery grave off Point Kas, Turkey, since the fourteenth century B.C. Thirty-four centuries have passed. You are a team of marine archaeologists who have discovered the debris field.

2. Redistribute the completed Uluburun ship's hull and Cargo Manifest handouts. (Do not give the originating team their materials). Also distribute handout of debris field of the Uluburun wreck (Handout 6).

Ask the students to compare the debris field with the loading pattern seen in the ship's hull. Now check the artist's sketch from *National Geographic*. The Uluburun ship was heavily laden. There is some speculation that his small ship was sunk when a gust of wind came over the Kas hills and caught her broadside (personal interview, July 1997, with Sam Mark, the marine archaeologist who for three seasons excavated the Uluburun ship's copper ingots). One possibility is that the load aboard the Uluburun ship shifted. If so, the vessel would have sunk in minutes, accounting for the loss of lives indicated by personal treasures in the debris field.

3. Ask students to concentrate on the debris field of the shipwreck. What artifacts can they distinguish among the debris? How are they making that determination?

4. What artifacts cannot be determined among the debris? Why?

5. How does the original Cargo manifest match up with what was discovered in the excavation? (Refer to Resources 1B [**Figure 3**] and Web site 2.)

6. Did all boats have the same cargo even though they visited the same ports?

7. Ask each member of the team of archaeologists to answer the following three questions about the Uluburun shipwreck in writing:
   What can you know for certain about this shipwreck?
   What is a possible explanation, but not yet certain?
   What questions do you want answered now?

8. Encourage the archaeologists to now share their finding with the class as investigating archaeologists speaking at a meeting of the Archaeological Institute of America.

Appendix: Material related to Article "Minoan Trade," in *Faces*, "Mediterranean Trade" Issue

The Bronze Age civilization of Crete was ruled by a Minoan dynasty, probably named after the legendary King Minos. Minoan trade flourished on the large island of Crete in the Bronze Age; from 2000 to 1450 B.C. the Minoans were the most powerful force in the Aegean Sea. Workshops for the storage and redistribution of food as well as workshops for potters, weavers, jewelers, sculptors, and other craftspeople produced some of the finest luxury goods in the ancient world. Small islands near Crete, like Thera and Naxos, were known as the Cyclades. Crete exercised power over them, and the Cyclades reflected the Minoan influence.

The Uluburun ship sank in the 14th century B.C. off the Turkish coast, near Kas. Its cargo represents a vast trade network stretching great distances over land and sea, including Mycenaean Greek, Canaanite, Cypriot, Egyptian, Kassite, Assyrian, and Nubian cultures. The Mycenaean Greeks imitated Minoan goods and utilized their trade routes, making an understanding of Minoan trade necessary to fully appreciate the cargo of the Uluburun ship.

Answer Key for Handout 1

Minoan Trade Exports
- Olive oil, wine, pottery
- Fine metal ware
- Melos exports obsidian
- Minoan artisans export goods
- Pottery vessels sent as gifts to an Egyptian noble
- Minoan daggers sent to Mycenae
- Minoan daggers

Evidence of Contact
- Pottery from Crete found on Thera
- Minoan weapons and goblets were sent to King Hammurabi's palace at Mari on the Euphrates River
- Minoan-style paintings on walls of some houses on Phylakopi
- Painting of landscape in Syrian city of Alalakh shows Minoan influence
- See picture, p. 7
- Daggers with bronze blades and inlaid with gold, silver and enamel found in princely warrior graves
- Lion hunt (favorite Mycenaean scene) and leopards hunting ducks in a papyrus swamp (favorite Egyptian scene) suggest links with both cultures

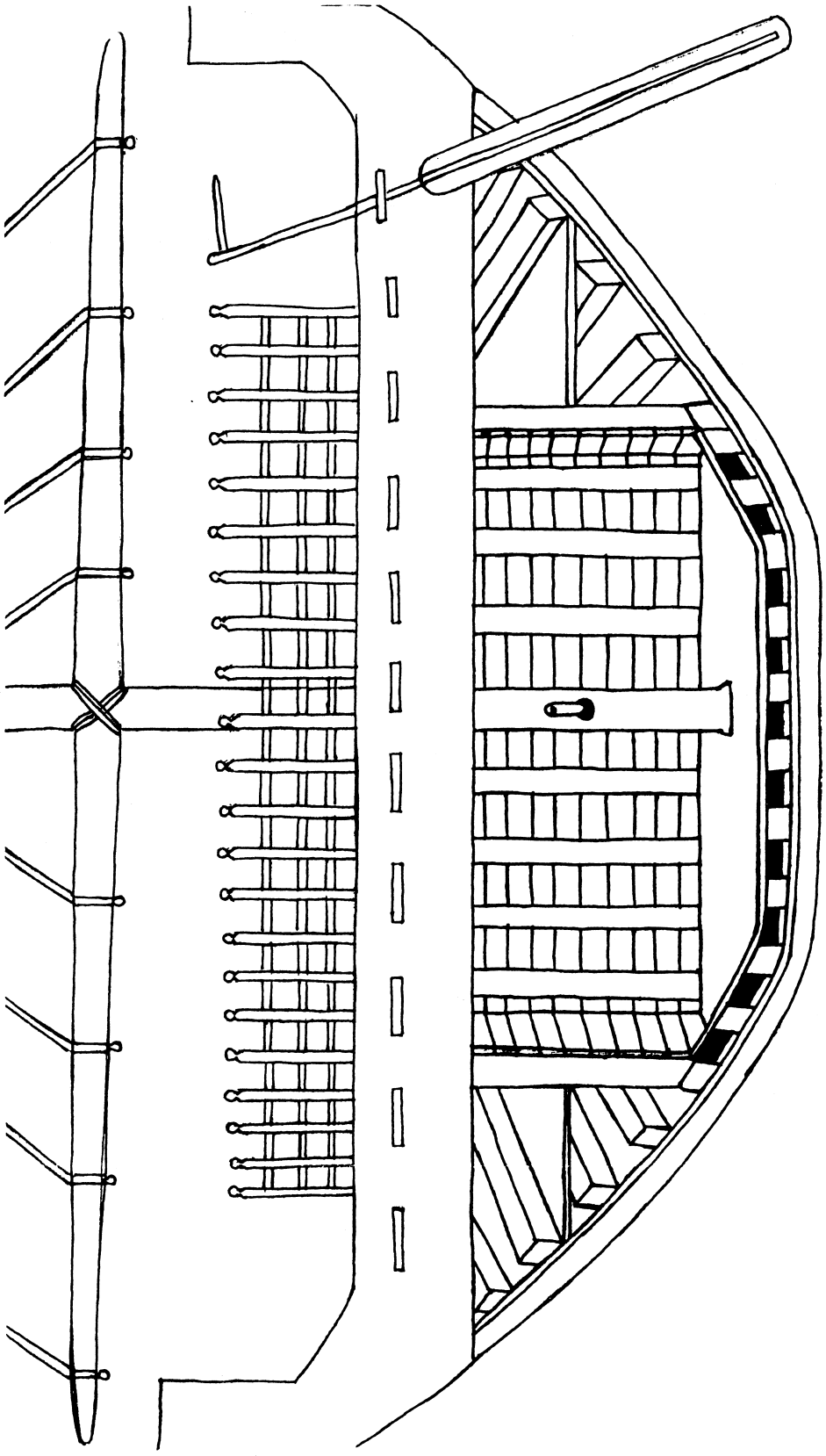
Minoan Trade Imports
- Foodstuffs
- Tin was sent from Iran to Mari, then to Minoan merchants based in Ugarit
- Arrowheads and tools found to be same obsidian from Melos
- Lapis lazuli imported and used to create Minoan weapon for Mari's King Zimrilim
- Minoans import Egyptian stone vases and imitate Egyptian vases

Mycenaeans conquered Minoans in 1450 B.C.; Mycenaeans imitate Minoan goods- difficult to tell whether an object is made in Crete or Greek mainland

Mycenaeans may have commissioned Minoan artists to create works of art.

Minoan Trade Exports	Evidence of contact	Minoan Trade Imports

Handout 1: Ancient Minoan Trade Chart



Handout 3: Uluburun Hulll

Port____

CARGO MANIFEST FOR THE ULU BURUN

	Cargo Loaded on	Quantity	Weight	Off Load Cargo	Weight
1.					
2.					
3.					
4.					
5.					
6.					

Port____

CARGO MANIFEST FOR THE ULU BURUN

	Cargo Loaded on	Quantity	Weight	Off Load Cargo	Weight
1.					
2.					
3.					
4.					
5.					
6.					

Port____

CARGO MANIFEST FOR THE ULU BURUN

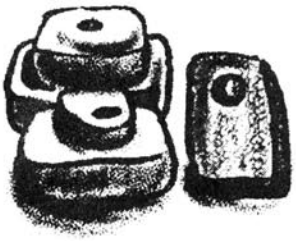
	Cargo Loaded on	Quantity	Weight	Off Load Cargo	Weight
1.					
2.					
3.					
4.					
5.					
6.					

Port____

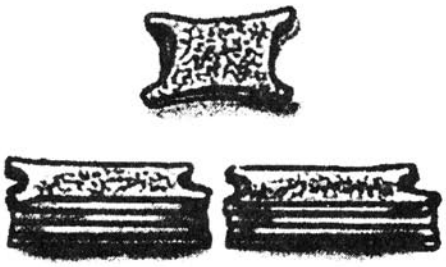
CARGO MANIFEST FOR THE ULU BURUN

	Cargo Loaded on	Quantity	Weight	Off Load Cargo	Weight
1.					
2.					
3.					
4.					
5.					
6.					

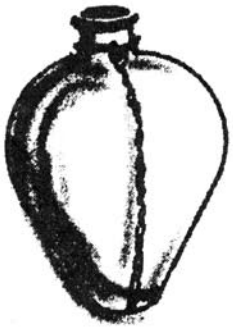
Partial Cargo (pictures)



Anchors



Copper Ingots (Oxhides)

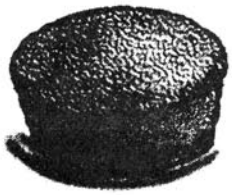


Storage Jars—Pithos

Canaanite Amphora

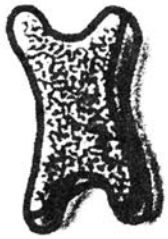
Rhyton Drinking Cup Made of Faience

Cypriot Pottery



Glass Identical to
Blue Egyptian Glass

Quartz Cylinder Seal



Tin Ingot

Canaanite Sword

Mycenaean Sword

Mycenaean Cup

Nefertiti's Scarab

Raw Ivory

Baltic Amber

Handout 5: Partial Cargo—Uluburun