



Dig It!

In this activity, you are an archaeologist and anthropologist. Analyze the contents of a midden and compare it to your own trash. Then assume the identity of an imagined culture and prepare a box of “archaeological artifacts” for discovery and analysis by other members of the class.

Focus questions

What methods do scientists use to examine the Channel Islands' past?

What makes this area unique for historical research?

Materials

For each student

Copy of Master D (pie chart)

Copy of Master E (diagram of Chumash midden)

Colored pencils

Protractor

For each group

Plastic shoebox, ice cream bucket, or similar tank

Sand or outside dirt, enough to fill the box

Whisk broom or brush

Tongue depressor, popsicle stick, or similar

Mason's trowel or other small shovel

Sieve

Tape measure

Paper bag containing 5 “artifacts”

Graph paper

Procedure

Part A: Examining a Midden

1. What can you learn about a culture from what the culture discards? Keep track in your JASON Journal of what you throw away in 1 day. Estimate percentages of different categories of

items (food waste, packaging, paper waste, and so on). Then use your protractor to construct the “Personal Garbage” pie chart on **Master D**. *Hint: To convert your categories into wedges of a pie chart, you need to convert percentages to degrees in a circle. Use this equation:*

$\%/100 = n/360$, where n = number of degrees.

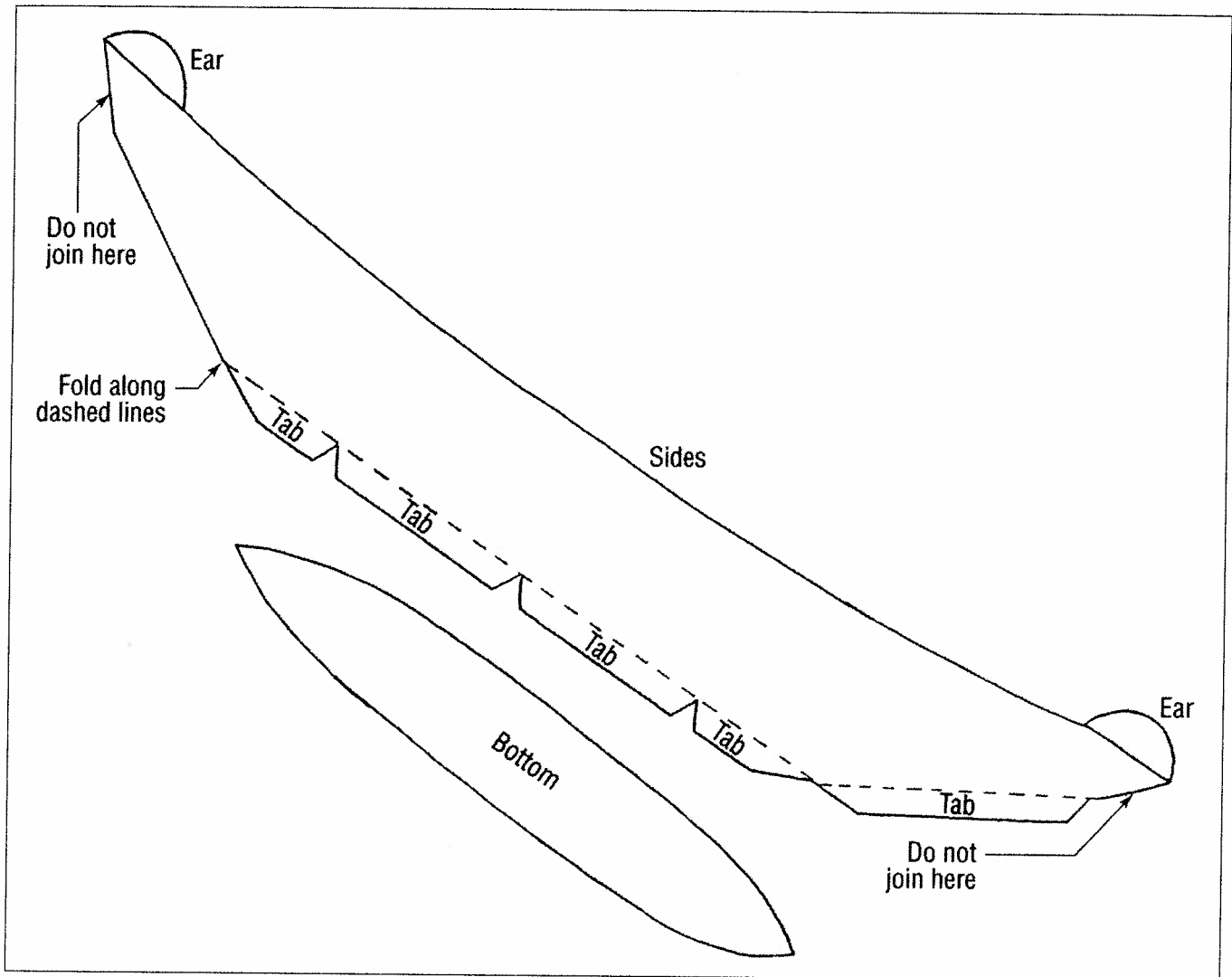
For example, if 25% of your waste was from food, the equation would be $25/100 = n/360$, where $n = 90$ degrees. You would use your protractor to mark off 90 degrees.

2. Compare your results with other students' results, then fill in the “Composite class garbage” pie chart to represent your class averages. How would you get a more complete picture of discards for your whole town, state, or country?
3. A midden is very similar to your own trash basket. But instead of holding the discards of a single day, middens hold discards from hundreds or thousands of years. Analyze the contents of the midden on **Master E**. How do the different layers overlap with Early, Middle, and Late Chumash periods? Discuss changes over time in foods consumed and tools used. Can you tell when humans first arrived? How?
4. Using percentages and categories from the Master (e.g., artifacts, mussel shells, olivella shells), construct pie charts for the contents of the surface, upper, and lower layers. What do you think the items represent in terms of use? Compare them with the pie charts of your own garbage. Discuss what you can learn about how a culture uses resources by analyzing what it throws away.

Part B: Using Archaeological Methods

5. Break up into groups of five. Each group represents a different imaginary culture.
6. Receive a box filled with sand and a bag with five “artifacts” that represent different aspects of your culture. As a group, decide what each object is used for and write a brief description. These objects may be familiar, but it's your job to redefine them as they are used in your culture. For example, a spoon could be a planting tool.

Tomol Assembly



Directions

1. Cut out 2 side pieces and 1 bottom piece for each canoe.
2. Color and decorate the pieces before assembling. Draw the outlines of the planks in black on the side of the canoe. Paint the canoe red.
3. Arrange the side pieces so that there is one tab at each end of the canoe. Fold along the dotted lines to make tabs.
4. Tape, glue, or staple the 2 side pieces together at each end. Do not attach the "ears" to each other; there should be a V-shaped space between them.
5. Set the bottom in place between the sides and bend the sides gently to fit. Tape or glue the bottom in place with the tabs underneath.

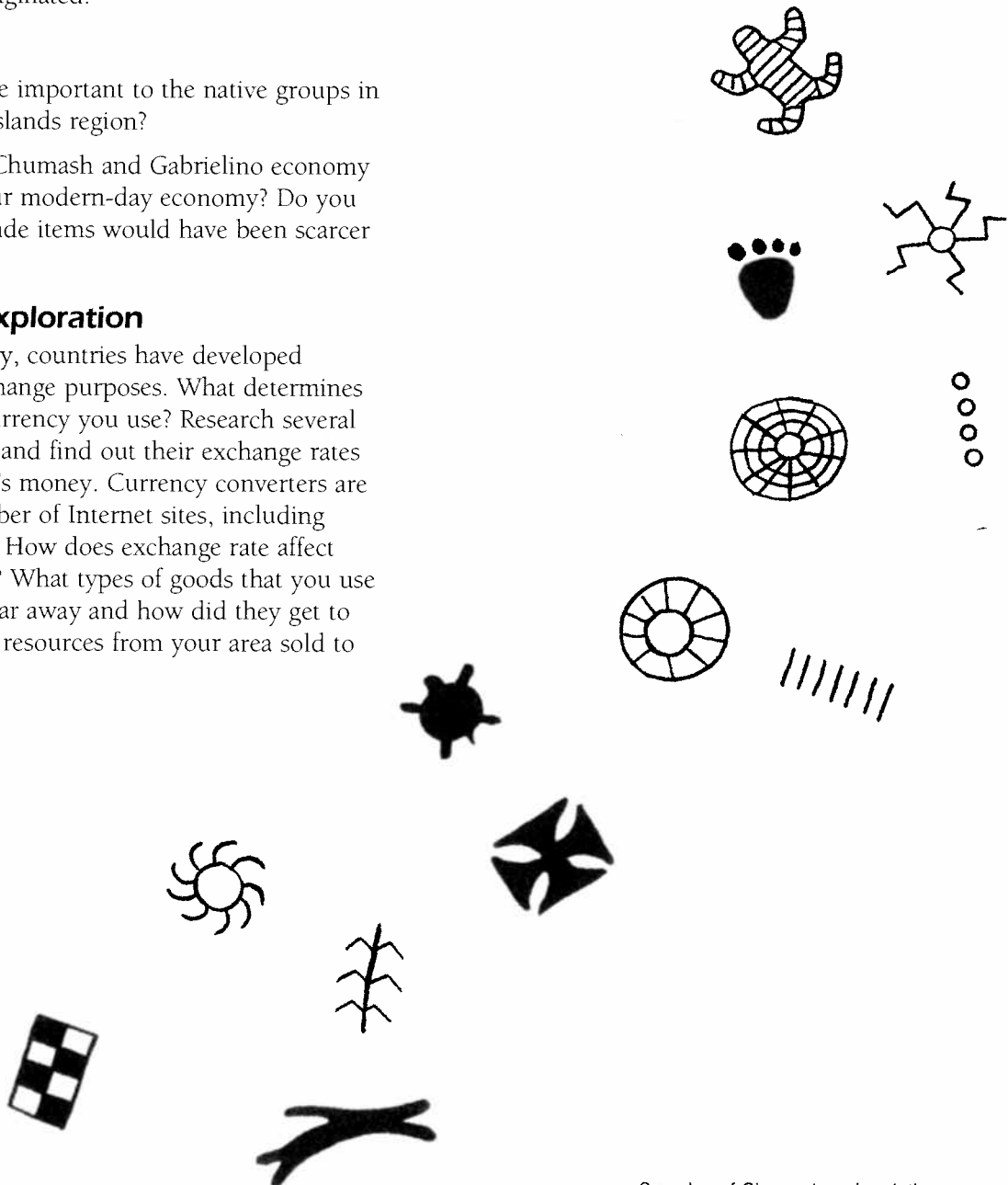
5. When the trading period is over, assess whether you have obtained the items necessary to survive the winter. Try again with a second trading period, then a third.
6. Did your groups end up with different numbers of items? Did some groups end up “wealthier” than others? Why might this have happened? As a class, discuss how shell money has circulated throughout the region from a single source and how trade has distributed goods to areas far from where they originated.

Conclusion

1. Why was trade important to the native groups in the Channel Islands region?
2. How did the Chumash and Gabrielino economy compare to our modern-day economy? Do you think some trade items would have been scarcer than others?

For Further Exploration

Throughout history, countries have developed currencies for exchange purposes. What determines the value of the currency you use? Research several foreign currencies and find out their exchange rates with your country’s money. Currency converters are available at a number of Internet sites, including www.xe.com/ucc. How does exchange rate affect trade and tourism? What types of goods that you use today come from far away and how did they get to you? Are goods or resources from your area sold to places far away?



Samples of Chumash rock paintings.

Research article



Modern-day tomol paddlers arrive at their destination.

ancestors through the writings of anthropologists such as John P. Harrington, who began recording oral histories and narratives of Chumash elders in 1912 and continued to do so until the late 1950s.

One group, the Chumash Maritime Association (CMA), has dedicated itself to revitalizing Chumash

culture and pride through the symbol of the tomol. On September 8, 2001, paddlers completed a historic crossing of the Santa Barbara Channel in a tomol they constructed themselves using ancient methods and tools. They also received financial support from the Channel Islands National Marine Sanctuary. Hundreds of people joined their victory celebration on Limuw after the 12-hour crossing.

People like Alan Salazar of the CMA have helped renew the strength and pride of the Chumash, and of all people who are enriched by the Chumash culture. The rich Chumash artistic tradition is upheld by families like the Romeros of Santa Ynez Indian Reservation, who perform the colorful and traditional swordfish ('elyewu'n), seaweed, and stork dances. Julie Tumamait-Stenslie shares her people's oral traditions through storytelling and educational programs in schools and community centers. And scientists like John Johnson continue their archaeological work to piece together the history and culture of the native people of the Channel Islands.

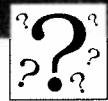


Journal Question

What methods do scientists use to examine the Channel Islands' past? What is something important from your family's past that your ancestors would want you to pass on?

Fact or Fallacy?

Archaeologists have found Chumash shell bead money in the Mojave Desert.



Fact: Chumash travelled 2 weeks or more to trade with tribes from the Mojave. The Chumash traded bead money for obsidian, a hard mineral used in arrowheads and spear points, and for hematite, a red mineral used in paints.

Vocabulary

Anthropologist *n.* A scientist who studies the physical, social, and cultural development and behavior of human beings.

Archaeologist *n.* A scientist who recovers and studies remains of past human life and culture.

Artifact *adj.* An object made by human beings that is of historical interest.

Generation *n.* The average time span between the birth of parents and the birth of their children.

Middens *n.* Piles of discarded objects—trash heaps—found near village sites. Middens often

contain distinct layers that offer clues to life during different time periods.

Missions *n.* Settlements established by the Spanish in the 17th–19th centuries to recruit native populations to Christian beliefs and European ways of life.

Oral narratives *n.* Stories of past events, values, and family life that have been told from one generation to another without being written down.

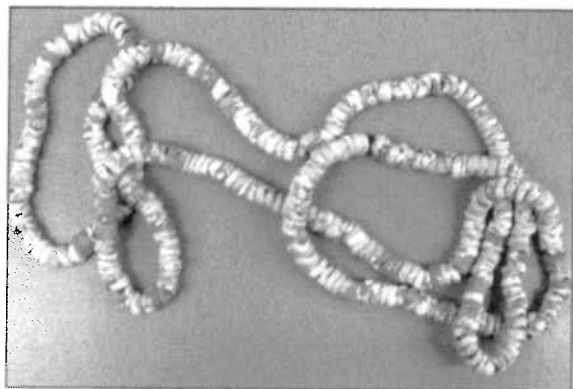
Tomol *n.* A Chumash canoe from 3½ to 9 meters (12 to 30 feet) long, constructed of redwood planks, that can carry 4 to 12 people.

Ms. Tumamait-Stenslie traces her ancestors back for eight **generations**. Her great-grandfather's family came from the villages of Swaxil, Lu'upsh, and Nanawani, on the eastern end of Limuw, as they called Santa Cruz Island (see Map 4 in the Atlas). The name Tumamait is said to mean "an orphan." Ms. Tumamait-Stenslie is a storyteller and educator who reveals the values and history of her ancestors through their oral narratives.

The oldest human remains found in North America are those of the "Arlington Springs Woman," discovered at Arlington Canyon on Santa Rosa Island. These bones have been estimated by radiocarbon dating to be nearly 13,000 years old. Daisy Cave on San Miguel Island also contains early artifacts, including a child's sandal. People probably could not have reached the islands without boats or rafts. Their presence there so long ago supports the theory that North America's first settlers migrated along the Pacific coast by sea.

What have we learned about Chumash culture?

Scientists divide Chumash history into Early, Middle, and Late Periods. In the Early Period, island natives were primarily hunters and gatherers. They ate mostly coastal shellfish and the seeds and berries of island plants. During the Middle Period they invented the **tomol** (a wooden plank canoe) and began to use bead money made from shells. This shell money and the means to travel farther over the local waters to fish and trade transformed their culture.



Chumash bead money made from olivella shells.

Chumash Periods

Early 8,500 to 3,200 years ago

Middle 3,200 to 800 years ago

Late 800 to 180 years ago
(when all Chumash had resettled at missions)

The islanders made shell bead money from olivella, abalone, and mussel shells. They quarried a hard mineral called chert on Santa Cruz and San Miguel, which they used to drill holes in the shell fragments so they could be strung. The people on the mainland called the people on Santa Cruz Island *Mi tcu' mae*, or "makers of shell bead money." Eventually, the word "Chumash" came to refer to all the people of the region.

The Island Chumash began to fish farther offshore and to hunt marine mammals. They also traded with other islands and the mainland, where they acquired deer meat and mainland plants. Shell bead money became widely dispersed. By the Late Period, the Chumash had a sophisticated and thriving economy. Archaeologists see changes from the Early Period to the Middle Period and into the Late Period reflected in the

middens. In the lower layers, representing the Early Period, abalone shells and other shellfish make up the largest percentage. The surface layers, which correspond to the Late Period, contain large quantities of fish and marine mammal bones as well as bead fragments.

The Chumash lived in thatched domed houses, called *aps*. *Aps* were made from sycamore, cottonwood, or willow poles lashed together at the top and covered with tule or cattail thatch. The Chumash were also well known for their basketry, and for the red, black, and white rock paintings found in some caves on the islands. These paintings depict important historic and ritual events. The Chumash made them using pigments prepared from iron ores, charcoal, and other minerals.



A handful of artifacts recovered from a Chumash midden.