

Building a Schooner in Essex

GRADES K-2 · SCIENCE AND ENGINEERING, HISTORY AND SOCIAL SCIENCE, MATHEMATICS · ESSEX

How did the people of Essex build boats that float, and how can we test materials to build our own?

Two 35-minute sessions (70 minutes total)

Essex is a small town on a river near the sea. For a very long time, the people of Essex built boats, and many of their boats were schooners. Today you will learn what they built boats from, test materials to see what sinks and what floats and then build your own boat.

Summary by Cape Ann Current

R1. A Town That Built Boats

Essex is a small town on a river near the sea. Long ago, Essex had another name. It was called Chebacco.

The people of Essex were shipbuilders. A shipbuilder is a person who builds boats and ships. For a very long time, building boats was the main job in Essex.

(Stop) What is a shipbuilder?

There is an old story about one of the first boats built in Chebacco. People said it was built up in an attic. When it was done, it was taken out through a window. Then cattle pulled it to the water.

(Stop) Why do you think it was hard to get the boat out of the house?

What did the shipbuilders use? Wood! Oak trees grew all around the town. The builders cut oak trees and used the strong oak wood for the bottom and sides of their boats. They used a lighter wood called pine to make the floors, called decks.

(Stop) Why do you think the builders used wood?

Essex builders were famous for one kind of boat called a schooner. A schooner has two or more tall poles for sails, called masts. The Essex schooners were sharp, low and fast.

Fishermen from the nearby city of Gloucester wanted fast boats. Many of the Gloucester fishing schooners were built in Essex.

The river in Essex is not very big. So the builders made boats that were not too big. That way the boats could float down the river and out to the sea.

(Stop) What would happen if they built a boat that was too big for the river?

Source: Written by Cape Ann Current for teacher read-aloud. Facts from Henry Hall, Report on the Ship-Building Industry of the United States (Washington: Government Printing Office, 1884), Tenth Census of the United States, pages 7, 12 to 13 and 108 to 109. <https://archive.org/details/reportonshipbui00hallgoog>. Rights: Text written by Cape Ann Current; facts from a public domain U.S. federal government report (1884)

Primary source

R2. Words from 1884: Henry Hall's report

"Nearly all the clipper fishing schooners of Gloucester are built at Essex, and trading vessels and pleasure boats, as well as fishing craft, have been produced there in goodly numbers." (page 108)

"Vessels are still framed and planked with oak, maple being used for the keels." (page 108)

"The decks and houses are of white pine." (page 108)

Source: Henry Hall, Report on the Ship-Building Industry of the United States (Washington: Government Printing Office, 1884), Tenth Census of the United States, pages 108 and 109. Transcribed from a scan; spelling as printed. <https://archive.org/details/reportonshipbui00hallgoog>. Rights: Public domain (U.S. federal government work, published 1884)

Data table

R3. Where were Gloucester's boats built?

Where the boat was built	Number of boats
Essex	218
Gloucester	133
All other places	124
Total	475

Source: Henry Hall, Report on the Ship-Building Industry of the United States (1884), pages 12 and 13, list of where the 475 schooners, sloops and boats owned at Gloucester in the census year (1880) were built. Table compiled by Cape Ann Current.

A1. Sink or Float

Look at each material. Make a guess: will it sink or float? Then test it in the water. Write a mark for what really happened.

1. Block of wood
2. Flat sheet of foil
3. Foil squeezed into a ball
4. Ball of clay
5. Plastic lid
6. Penny
7. Cork
8. Metal spoon
9. Which materials would make a good boat? Tell why.

A2. Plan two boats

Draw two different plans for a boat that floats and carries pennies. Circle the one you will build.

1. Draw plan 1.
2. Draw plan 2. Make it different from plan 1.
3. Circle the plan you will build. Tell a partner why you chose it.

A3. Penny test

Float your boat. Add one penny at a time. Count out loud. Stop when water comes in. Write the number. Test your partner's boat too.

1. How many pennies did my boat hold?
2. How many pennies did my partner's boat hold?
3. Which boat held more?
4. What was strong about each boat?
5. What would I change next time?

A4. Read the boat table (grade 2)

Look at the table Where were Gloucester's boats built? Listen as your teacher reads it.

1. Which place built the most boats?
2. Were more boats built in Essex or in Gloucester?

Talk about it

- Why do you think Essex builders used oak trees from near their town?
- The flat foil and the foil ball are the same material. Why might one float and one sink?
- How is your boat like a real schooner? How is it different?
- Why did a small river mean Essex builders made boats that were not too big?
- What jobs do people in our town do because of where we live?

Show what you learned

Show your boat and your data sheet. Tell how many pennies your boat held, one thing that was strong about it and one thing you would change. Tell one material Essex builders used and why.

Points: 4