



# Houston: Your Home Port

## Learning Module: Teacher Guide

in partnership with Greater Houston Port Bureau

Duration: 50 minutes

Grades 7 and 8

Summary:

The State of Texas is the ninth largest economy in the world, with the Port of Houston bringing in over 20% of the states' GDP. It is also the largest petrochemical manufacturing port in the country and the largest port by tonnage! In this module, you will learn about the importance of the port, how it was created, how it operates, and the incredible career opportunities on and off the port. In partnership with the Greater Houston Port Bureau this module was created for middle school students based on Great Houston Port Bureau's [Port 101](#) lecture. This module includes a teacher's guide, student worksheets that follow the video lesson, games, and a quiz.

Objective:

Teach and introduce students to the port of Houston's impact on transportation, trade, and career opportunities in accordance with TEKS.

TEK Skills:

**Grade 7: 9.C:** The student can analyze the effects of physical and human factors such as climate, weather, landforms, irrigation, transportation, and communication on major events in Texas.

**Grade 7: 12.B:** The student can trace the development of major industries that contributed to the urbanization of Texas such as transportation, oil and gas, and manufacturing.

**Grade 8: 28.B.** The student can analyze the impact of transportation and communication systems on the growth, development, and urbanization of the United States.

Materials Provided:

- Teacher's lesson plan
- Student note sheet
- Port game
- Student quiz and answer key
- HMC brochures
- Teacher evaluation form
- Glossary

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History/Social Studies

7<sup>th</sup>-8<sup>th</sup>

Produced by Houston Maritime Center in partnership with Greater Houston Port Bureau  
Duration: 50 minutes

### Learning Objective

To teach students about the port of Houston and its impact on transportation and trade in accordance with TEKS.

### Materials:

- Student note guide
- Video
- Port game
- Student Quiz and Answer Key

## Lesson Overview

### Anticipatory Set:

- Discussion questions to ask before playing video:
  - Where did you buy your shirt? Answer: The store
  - Where did the store get that shirt to sell to you? Answer: from a semi-truck
  - Where did the truck pick up the shirt to take it to the store? Answer: from the port, brought in by a ship.
  - How many of you know Houston has a port?
- Verbal Introduction to the students:
  - “Houston has a very important port that impacts all of Texas. In partnership with the Greater Houston Port Bureau, Houston Maritime Center made this lesson, Houston: Your Home Port. As you watch the video to learn more about this port, you will learn how to take effective notes by filing out the video note guide. After the video is done, we will play a game to see if we can figure out where items are taken in on the port. After everything is done, you will take a short quiz.”

Introduction of New Material: Play *Houston: Your Home Port* video and hand out video notes. [https://youtu.be/LP\\_mFumIQgQ](https://youtu.be/LP_mFumIQgQ)

Guided Practice: Play Port game.

Independent Practice: Pass out student review.

Closure: Go over answers to the quiz. Inform students they can learn more by going to HMC.

[www.houstonmaritime.org](http://www.houstonmaritime.org)

## Activity Assessment

### Activity (1)

Watch *Houston: Your Home Port*

This activity is completed with no teacher assistance. Students will watch provided video while using the note-taking sheet to take effective notes.

### Activity (2)

Port Game via Google Slides

This game is played with the teacher’s help. Students will try to solve which terminal the ships need to dock in giving students an introduction to the layout of the port.

### Activity (3)

Quiz:

Students will take the quiz with no teacher assistance but can use their note sheet with teacher approval. The quiz will help students retain information from the video.

### TEK Skills

In accordance with

**Grade 7: 9.C:** The student can analyze the effects of physical and human factors such as climate, weather, landforms, irrigation, transportation, and communication on major events in Texas.

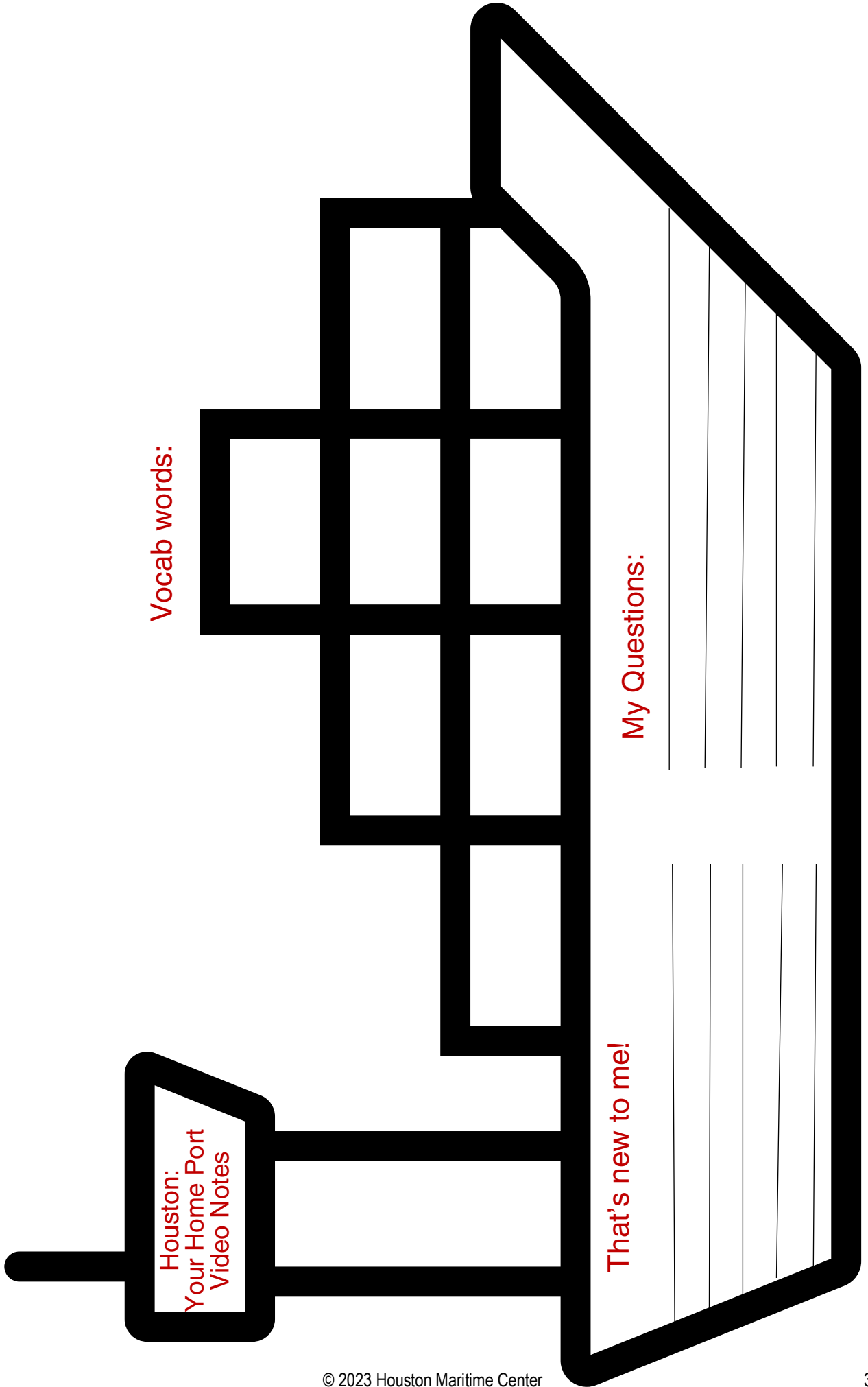
**Grade 7: 12.B:** The student can trace the development of major industries that contributed to the urbanization of Texas such as transportation, oil and gas, and manufacturing.

**Grade 8: 28.B:** The student can analyze the impact of transportation and communication systems on the growth, development, and urbanization of the United States.

### Assessment and Evaluation

- Students will take the quiz to evaluate information retained.
- Teachers are asked to fill out the evaluation form, so HMC improve the program for future educators.

Name: \_\_\_\_\_  
Class: \_\_\_\_\_  
Date: \_\_\_\_\_



Vocab words:

Houston:  
Your Home Port  
Video Notes

That's new to me!

My Questions:

# Port Game Instructions

Using Google slides, solve the riddle to discover what the ship is carrying. Dock the ship in the correct terminal.

1. Open Google Slides.
  - a. <https://docs.google.com/presentation/d/1K-T8d-ZNSgr22t1qIMiefqY7017TBsiYijlf4FV0aTY/edit?usp=sharing>
2. Start Slideshow.
3. Click the Ship to begin.
4. Follow the instructions on the slides.
5. Complete all three rounds.

# Houston: Your Home Port Video Review

Name: \_\_\_\_\_

## Fill in the blank:

1. TEU stands for \_\_\_\_\_.
2. Before Houston \_\_\_\_\_ the Buffalo Bayou, cargo was carried by \_\_\_\_\_ up and down the Buffalo Bayou to the Gulf of Mexico.

**Word Bank:** Dredged Twenty-Foot Equivalent Unit Barges

## True or False:

- (T or F) The Houston Ship Channel is longer than the Panama Canal  
(T or F) The primary cargo on the Houston Ship Channel is container goods.  
(T or F) Houston Ship Channel is unique because the manufacturers are on the port.

## Match the term to the correct description:

- RORO
- GDP
- Terminal
- Breakbulk
- Thomas Ball
- Jesse Jones
- Petrochemical
- Galveston Hurricane of 1900
- Texas Chicken/Two-Step
- Project 11
- A congressman who advocated for Houston to pay half of the cost to dredge a port.
- The next phase to make Houston Ship Channel wider.
- A substance used to make plastics, asphalt, electronics, and more.
- A banker who secured the funds to build the port.
- A section of the port for specific ships.
- Roll on-Roll Off carrier, which is used to transport cars, trucks, etc.
- A ship designed to transport cargo that is stored in boxes, bales, or pallets, such as iron or steel.
- Another reason why Houston was able to build the port.
- A maneuver commonly done in the Houston Ship Channel.
- A measure of market value of all goods and services produced and sold.

## Short Answer:

- Explain Thomas Ball's reasons why Houston should have a port:

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- Explain one of the four sections of the port and what ship goes to each section:

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# Houston: Your Home Port Video Review Answer Key

## Fill in the blank:

1. TEU stands for Twenty-foot Equivalent Unit.
2. Before Houston dredged the Buffalo Bayou, cargo was carried by barges up and down the Buffalo Bayou to the Gulf of Mexico.

## Word Bank:

Dredged

Twenty-Foot Equivalent Unit

Barges

## True or False:

- T** The Houston Ship Channel is longer than the Panama Canal.  
**F** The primary cargo on the Houston Ship Channel is container goods.  
**T** Houston Ship Channel is unique because the manufacturers are on the port.

## Match the term to the correct description:

- |                               |   |
|-------------------------------|---|
| • RORO                        | ○ A congressman who advocated for the need for Houston to have a port.                                  |
| • GDP                         | ○ The next phase to make Houston Ship Channel wider and deeper.   |
| • Terminal                    | ○ A substance used to make plastics, asphalt, electronics, and more.                                    |
| • Breakbulk                   | ○ A banker who secured Houston's portion of the funds to build the port.                                |
| • Thomas Ball                 | ○ A section of the port for specific ships.   |
| • Jesse Jones                 | ○ Roll on-Roll Off carrier, which is used to transport cars, trucks, etc.                               |
| • Petrochemical               | ○ A ship designed to transport cargo that is stored in boxes, bales, or pallets, such as iron or steel. |
| • Galveston Hurricane of 1900 | ○ Another reason why Houston was able to build the port.  |
| • Texas Chicken/Two-Step      | ○ A maneuver commonly done in the Houston Ship Channel.   |
| • Project 11                  | ○ A measure of market value of all goods and services produced and sold.                                |

## Short Answer:

- Explain Thomas Ball's argument to the government for Houston to have a port:
  - a. **Seventeen railroads met in Houston.**
  - b. **Oil was found at Beaumont.**
  - c. **Galveston Hurricane of 1900.**
- Explain the four sections of the port and what ship goes to each section:
  - Section One: Galveston Bay Area**
    - **Container Ships**
  - Section Two: 146 Bridge to Beltway 8**
    - **Oil and Chemical Tankers**
  - Section Three: Beltway 8 to I-610**
    - **Large Bulk Ships**
  - Section Four: I-610 to Turning Basin**
    - **Breakbulk Ships and ROROs**

# Teacher Evaluation Form

\*\*\*Please fill out this form and email it to [khuxley@houstonmaritime.org](mailto:khuxley@houstonmaritime.org) so the museum can improve this experience for future educators and students.\*\*\*

- Did you like this lesson? **Yes** \_\_\_ **No**\_\_\_
- Why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Did your students enjoy this lesson? **Yes** \_\_\_ **No**\_\_\_
- Did you feel the teacher’s guide provided adequate information?
- **Yes** \_\_\_ **No**\_\_\_ If no, explain:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- What was the average score on the quiz?  
\_\_\_\_\_
- Did students find it too difficult or too easy? **Yes** \_\_\_ **No**\_\_\_
- Are your students interested in learning more about maritime industry/history?  
**Yes** \_\_\_ **No**\_\_\_
- Was the lesson too long, too short, or the right amount of time?  
\_\_\_\_\_
- Are there any other comments you would like to add?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Would you do another module produced by HMC? **Yes** \_\_\_ **No**\_\_\_

## Glossary:

**GDP (Gross Domestic Product):** The total market value of all finished goods and services produced within a country or state's borders for a specific period of time.

**Petrochemical:** A substance obtained by refining and processing crude oil and natural gas. Petrochemical products include electronics, asphalt, renewable energy supplies, medicines, plastics, cosmetics, and cleaning products. 80% of revenue in the port is petrochemical-related.

**Breakbulk:** Non-containerized general cargo stored in boxes, bales, pallets, or other units to be loaded onto or discharged from ships or other forms of transportation. Examples include: iron, steel machinery, linerboard, and wood pulp.

**Port of Houston:** The collection of 272 terminals along parts of the Houston ship channel. The Port of Houston includes all terminals and businesses operating along the Houston ship channel and is a location, not an entity. The port is run by the United States Coast Guard and the US Army Corps of engineers.

**Houston Ship Channel:** The dredged waterway that ships pass through to get to the Port of Houston or privately-owned terminals.

**TEU (Twenty-foot Equivalent Unit):** A standard unit of measurement for containers aboard ships. Most containers seen are two TEUs or 40 feet long.

**Brownwater:** Refers to water close to shore, inland waterways, and rivers. Brownwater vessels are often smaller ships or barges that can operate in shallow water.

**Bluewater:** Refers to ocean-going ship traffic. These are larger ships that are better equipped to manage open ocean. Many of these are very large and need 40+ feet of water to move.

**Bollard Pull:** A unit of measurement for the towing or pushing power of a watercraft. It is measured as the force and tonnes created by a vessel under full power using a shore-mounted tow line and measurement device.

**Container:** A box made of aluminum, steel, or fiberglass used to transport cargo by ship, rail, truck, or barge. **Terminal:** The location where cargo would be loaded and unloaded from ships, trains, pipelines, etc. For example: a container terminal manages container ships. Petrochemical terminals manage oil tankers.

**RORO (Roll On, Roll Off):** Roll-on roll-off carriers are used to carry anything on wheels. Large doors fold down into ramps, allowing cars, trucks, farm equipment, tractors, etc., to drive onto the ship.

**Longshoreman/Stevedore:** Men and women who load and unload ships, trucks, and trains at the port. Stevedore refers to the owner of the equipment, while longshoreman refers to the employees or contractors hired to operate it.



