



Port of Lake Charles Classroom Connection

ABOUT CLASSROOM CONNECTION

The Port of Lake Charles (POLC) plays an integral role in the economy of Southwest Louisiana. The eleventh largest port in the United States, it is strategically located on the Energy Coast and is home to numerous energy-related industries. Each year imported cargo passes through the port and makes its way to local store shelves and exported cargo such as rice and other grains help to relieve the world's hunger.

As an important intermodal transportation hub, the Port of Lake Charles impacts an estimated 10,000 jobs in the Lake Area. From longshoremen to process technicians and accountants, the port relies on a highly skilled work force.

Port of Lake Charles: Classroom Connection is designed to provide the K12 students of Southwest Louisiana with an understanding of the importance of the port and help prepare students for career opportunities in port-related businesses and industry. Designed by Dr. Lisa McBride, Educational Consultant, the lessons and resources presented here provide authentic learning experiences for students and are aligned with State of Louisiana content standards.

The website provides a field trip guide and interdisciplinary, technology-rich lesson plans for elementary, middle, and high school students as well as a wealth of educational resources on the maritime industry.

USING THE CLASSROOM CONNECTION LESSONS

The lesson plans included in the Port of Lake Charles Classroom Connection are divided into three categories: Grades K – 3; Grades 4 – 8; and High School. There are lesson plans and activities for each core subject area with technology tips included. Lesson plans may be modified for specific grade levels using the suggestions embedded within the lesson plan. Louisiana Grade Level Expectations are included for each lesson.

Additionally, suggested enrichment activities for art and technology are included. These activities may be completed in the classroom before and after a field trip to the Port of Lake Charles or they may be completed using the Port of Lake Charles website as a resource.

Port of Lake Charles: Classroom Connection Elements of a Good Lesson

Before using the lessons provided in Classroom Connection, please look over the Elements of a Good Lesson section to become familiar with the format that the lessons are presented in.

Lesson Objective(s): Statements that specify what students will be able to do when the lesson is completed.

Louisiana State Content Standards: The standards that are addressed by the lesson for each grade level.

Lesson Modification Tips: Suggestions for modifying activities within the lesson to meet the needs of all learners. Also included are suggestions for modifying the lessons for specific grade levels.

Technology Tips: Ideas are presented for using technology to meet the lesson goals.

Materials: A list of materials needed to complete the lesson.

Timeline: An estimate of how long the activity will take

Anticipatory Set: Information or activities to peek student interest and prepare them for learning.

Procedure: Lists what the teacher will say and do and what the students will say and do during the lesson. The procedure often included input and modeling which provide students with information they will need to master the objective. Input provides new information and modeling demonstrates how this information is applied.

Check for Understanding: Practicing an activity to make sure that students understand what to do.

Guided Practice: Students apply their new skills to new problems or activities.

Closure: An activity or discussion that summarizes the lesson.

Port of Lake Charles: Classroom Connection

Grades K – 3 Lesson Plans

English Language Arts

Scavenger Hunt with Story Telling:

This lesson may be started during a field trip to the port and completed as a follow-up activity in class or teachers may use the port website to complete the activity.

Lesson Objective(s): The learner will be able to identify vocabulary words port, cargo, vessel, channel, longshoreman, and port captain which are associated with the maritime industry.

The learner will be able to sequentially place the activities associated with the vocabulary words.

The learner will be able to create an oral or written story using the vocabulary words.

Louisiana State Content Standards:

Kindergarten:

GLE 21: Use illustrations, developmental/inventive spelling, and appropriate vocabulary to write for a specific purpose and/or audience (ELA-2-E2)

GLE 25: Write informal notes, lists, letters, personal experiences, and stories using developmental/inventive spelling and pictures (ELA-2-E4)

GLE 36: Relate an experience or creative story in a logical sequence (ELA-4-E3)

First Grade:

GLE 26: Write simple stories with a central idea or event; a beginning, middle, and end; and details (ELA-2-E1)

GLE 28a: Participate in group writing activities and processes, including using prewriting strategies, including listing, brainstorming, and drawing to generate ideas for writing (ELA-2-E3)

Second Grade:

GLE 10: Retell a story in sequence including main idea and important supporting details (ELA-1-E5)

GLE 23c: Develop compositions of one or more paragraphs using writing processes such as the following: writing a first draft with a developed beginning, a middle, and an end (ELA-2-E3)

GLE 40a: Tell and retell stories with sequential order, including setting, character, and simple plot (ELA-4-E3)

Third Grade:

GLE 23; Incorporate grade-appropriate vocabulary and information when writing for an intended audience and/or purpose (ELA-2-E2)

GLE 24a: Develop compositions of two or more paragraphs using writing processes such as selecting a topic (ELA-2-E3)

GLE 42a: Use active listening strategies, including asking questions and responding to ideas/opinions (ELA-4-E5)

GLE 46: Locate information from multiple sources, including books, periodicals, videotapes, Web sites, and CD-ROMs (ELA-5-E2)

GLE 47: Determine appropriateness of collected information for a specified purpose (ELA-5-E2)

Lesson Modification Tips: Kindergarten and First Grade students will illustrate their vocabulary words and dictate their stories orally to the teacher and class. Second and Third Grade students will define their vocabulary words and write their stories.

Technology Tips: Palm Pilots can be used for vocabulary words. The teacher can beam the words to each Palm Pilot and students can illustrate and/or define the words using their stylus. This activity may also be adapted for ActivBoard by creating vocabulary “notecards” that students can drop and drag into sequence.

Materials: Port of Lake Charles: Classroom Connection PowerPoint; 1 vocabulary handout, clipboard (optional), scissors, and a Ziploc bag for each student.; Classroom writing materials.

Timeline: 1 field trip & 1 class period OR 2 class periods.

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Prior to arrival at the port or the first part of the lesson if no field trip is planned, distribute notecard handout and clipboard (optional) to students. (These should not be cut prior to the trip for ease in handling.) Instruct the students that the definitions and examples of these words will be discussed during the visit to the port. Students should illustrate or write about each word in the notecard space.

Back in the classroom, distribute scissors and Ziplocs and have students cut out their cards, label each card with their name, and place them in their Ziploc which should also be labeled by name.

Review the elements of storytelling and/or paragraph writing with students. Stories should have an introduction, detailed sequence of events, and a conclusion. Ask the students to create a story using the vocabulary words. Have them create details. Stories may be written or created on Palm Pilots.

Check for Understanding: Use the sample story and have students identify the introduction, supporting sentences, and conclusion:

Sample story:

This story is about a parakeet from Brazil. He flew onto a cargo vessel at a port. The vessel crew named him Bob and took good care of him. He got to travel across the ocean and into the ship channel. At the Port of Lake Charles., he saw the longshoremen working while the port captain counted stacks of wood. Bob liked it here and decided to stay with his new friends.

Guided Practice: Circulate among students as they use the notecards to sequence their story. Allow Kindergartners and First Graders to share theirs orally. Second and Third graders should write their stories before sharing.

Closure: Use the Popcorn Strategy (students pop up, one at a time, without being called on, to share one thing they have learned) to have students share what they have learned about the Port of Lake Charles and about composing a story.

Port of Lake Charles: Classroom Connection Vocabulary Handout

port	cargo
vessel	channel
longshoreman	port captain

Port of Lake Charles: Classroom Connection Grades K – 3

Mathematics

Shape Scavenger Hunt

Lesson Objective(s): The learner will be able to identify grade-level appropriate basic geometric shapes by creating a drawing of a building or structure at the port . (K – 3)

The learner will be able to divide a geometric figure in half and identify the line of symmetry. (1 – 3)

The learner will be able to find the area and perimeter of a polygon. (3)

Louisiana State Content Standards:

Kindergarten:

GLE 16: Name and identify basic shapes using concrete models (e.g., circles, squares, triangles, rectangles, rhombuses, balls, boxes, cans, cones) (G-2-E) (G-1-E) (G-4-E) (G-5-E)

GLE 19: Investigate the results of combining shapes (using paper shapes, pattern blocks, tangrams, etc.) (G-3-E) (G-1-E)

GLE 20: Draw circles, squares, rectangles, and triangles (G-4-E)

First Grade:

GLE 26: Compare, contrast, name, and describe attributes (e.g., corner, side, straight, curved, number of sides) of shapes using concrete models [circle, rectangle (including square), rhombus, triangle] (G-1-E) (G-2-E) (G-4-E)

GLE 27: Connect the informal language used for 3-dimensional shapes to their proper mathematical name (e.g., a ball is a sphere, a box is a rectangular prism, a can is a cylinder) (G-2-E)

GLE 28: Determine if a shape has a line of symmetry by folding (G-2-E)

GLE 29: Visualize, predict, and create new shapes by cutting apart and combining existing 2- and 3-dimensional shapes (G-3-E) (G-1-E)

Second Grade:

GLE 21: Compare and contrast 3-dimensional shapes (i.e., sphere, cube, cylinder, cone, prism, pyramid) according to their attributes (e.g., number of faces, shape of faces) (G-2-E)

GLE 22: Identify a reduction or enlargement of a given shape (G-2-E)

GLE 23: Identify congruent 3-dimensional solids in a variety of positions and orientations (G-3-E) (G-4-E) (G-2-E)

GLE 31: Recognize, extend, create, and explain patterns that involve simple rotations or size changes with geometric objects (P-1-E) (P-2-E)

Third Grade :

GLE 22 Find the perimeter of a geometric shape given the length of its sides (M-1-E)

GLE 23: Find the area in square units of a given rectangle (including squares) drawn on a grid or by covering the region with square tiles (M-1-E)

GLE 29 Classify and describe 2- and 3-dimensional objects according to given attributes (triangle vs. quadrilateral, parallelogram vs. prism) (G-2-E) (G-1-E) (G-4-E)

GLE 30: Apply concepts of congruence, similarity, and symmetry in real-life situations (G-2-E)

Lesson Modification Tips: Lesson activities for Kindergarteners and First Graders should include shape identification and re-creation of some of the basic shapes seen in port building and structures. Second and Third Graders will extend the lesson to three dimensional objects. Third Graders will find area and perimeter of rectangles and squares.

Technology Tips: Digital cameras may be used to take snapshots of buildings and structures to use in the follow-up activities. Shapes and vocabulary may be loaded into Palm Pilots for use during the field trip. The drawings of port buildings and structures may be done using a computer drawing program.

Materials: Port of Lake Charles Classroom Connection PowerPoint; Examples of basic geometric shapes circle, squares, triangles, rectangles, rhombuses, balls, boxes, cans, and cones., Examples of shapes that can be found in buildings and structures. A shapes handout, clipboard (optional), and ruler for each student, classroom drawing materials.

Timeline: 1 field trip & 1 class period OR 2 class periods.

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Prior to the arrival at the port or the first part of the lesson if no field trip is planned, review basic shapes with students. Kindergarteners and First Graders will review circles, squares, triangles, rectangles, rhombuses, balls, boxes, cans, cones. Second and Third Graders will review the terms circle, rectangle, square, rhombus, sphere, cube, cylinder, cone, prism, and pyramid.

Review the terms corner, side, straight, curved, number of sides with 1 – 3 graders.

Distribute handouts and clipboards for use during the visit. Have students photograph, sketch, and/or name buildings (depending on grade level) and structures at the port in which these shapes are found. Students and teachers will have to ask lots of good questions during the trip to get this information. The teacher should point out examples of geometric shapes and vocabulary terms as the trip proceeds. The teacher should make a note of the purpose of these structures to review with the class.

Check for Understanding: Back in the classroom, distribute handouts to students and review shapes and vocabulary with them. Discuss which shapes can be divided equally in half. Introduce line of symmetry to Second and Third Graders.

Also compare and contrast shapes as students work on their drawings.

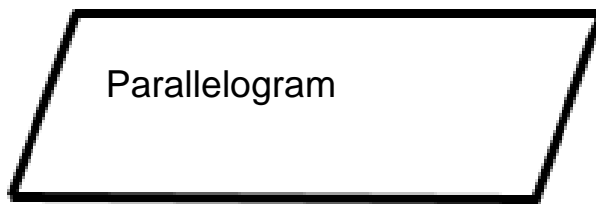
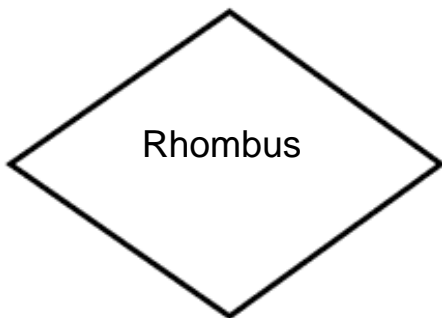
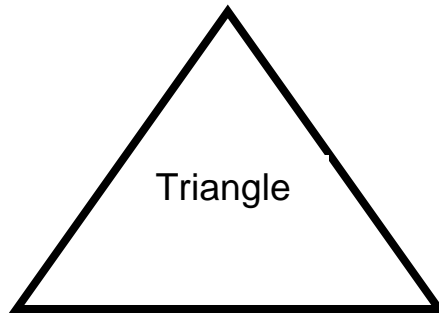
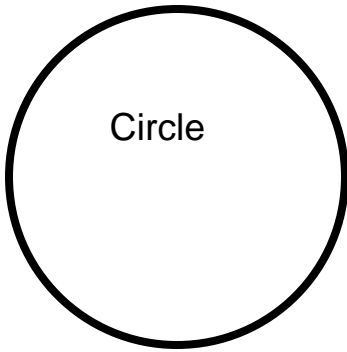
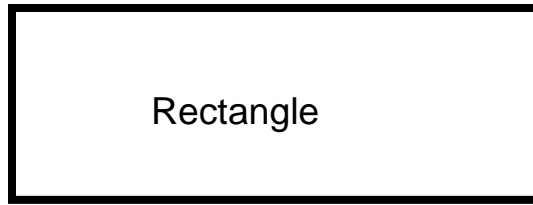
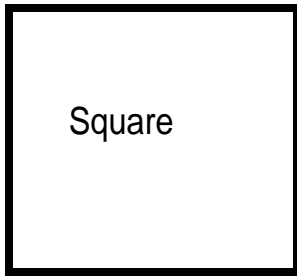
Guided Practice: Have students draw pictures of structures seen at the port using the shapes from their handout. For example, students can trace cylinders to recreate the grain elevators.

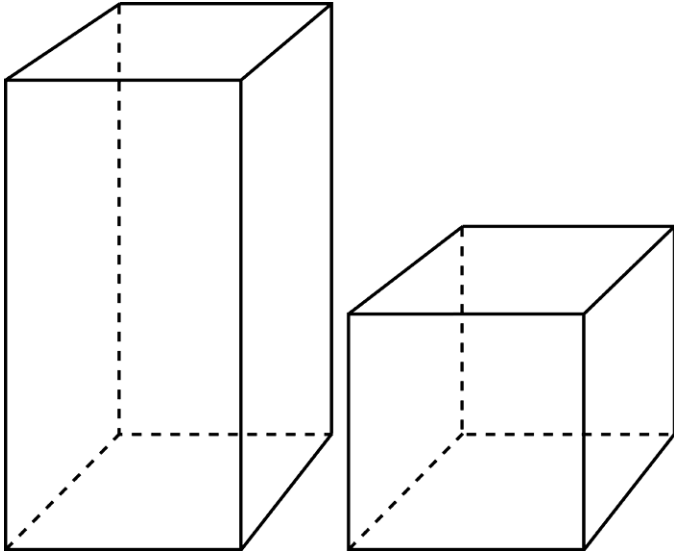
As Second and Third Graders work on their drawings, have them identify instances where they reduced, enlarged, or rotated shapes. Third graders should be asked to give the area and perimeter of a square or a rectangle in their drawing.

When complete, have students share and discuss their drawings. Be sure to review key concepts with students as they discuss the drawings. Post the drawings in the classroom.

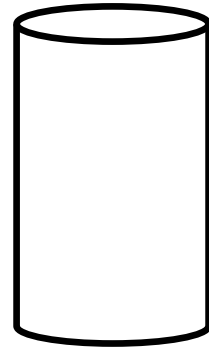
Closure: Ask students to tally the shapes used in the drawings. Kindergarteners and First Graders will do this orally. Second and Third Graders will use tally marks.

Port of Lake Charles: Classroom Connections Shapes Handout

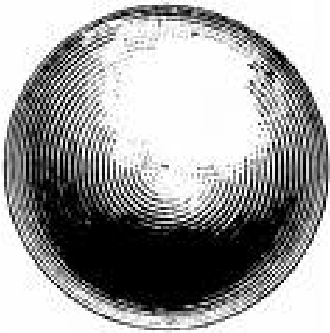




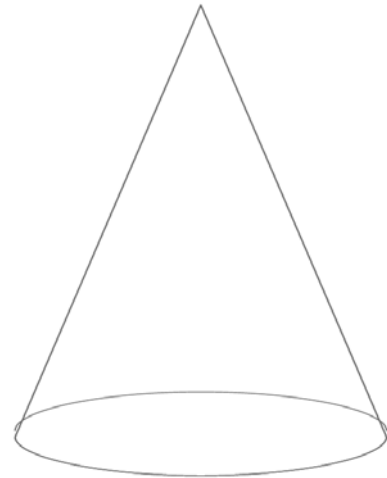
Boxes or Rectangular Prism



Can or Cylinder



Ball or Sphere



Cone

Port of Lake Charles: Classroom Connection Grades 4 - 8 Lesson Plans

English Language Arts

Writing an Informational Article with a Multimedia Presentation

Lesson Objective(s):

The learner will gather information on a topic related to the Port of Lake Charles from at least three sources.

The learner will write an informational article a topic related to the Port of Lake Charles.

The learner will present their informational article to the class using a multimedia.

Louisiana State Content Standards:

Fourth Grade:

GLE 23a: Develop grade-appropriate compositions by identifying and applying writing processes, including selecting topic and form (ELA-2-E3)

GLE 23b: Develop grade-appropriate compositions by identifying and applying writing processes, including prewriting (e.g., brainstorming, researching, raising questions, generating graphic organizers) (ELA-2-E3)

GLE 23c: Develop grade-appropriate compositions by identifying and applying writing processes, including drafting (ELA-2-E3)

GLE 23g: Develop grade-appropriate compositions by identifying and applying writing process, including publishing using available technology (ELA-2-E3)

Fifth Grade:

GLE 19a: Develop grade-appropriate compositions on student- or teacher-selected topics that include word choices (diction) appropriate to the identified audience and/or purpose (ELA-2-M2)

GLE 19e: Develop grade-appropriate compositions on student- or teacher-selected topics that include variety in sentence structure (ELA-2-M2)

GLE 42a: Locate and integrate information from grade-appropriate resources, including multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias) (ELA-5-M2)

GLE 43: Identify sources as primary and secondary to determine credibility of information (ELA-5-M2)

GLE 46: Use word processing and/or other technology to draft, revise, and publish a variety of works, including compositions, investigative reports, and business letters (ELA-5-M4)

Sixth Grade:

GLE 17a: Write multiparagraph compositions on student- or teacher-selected topics organized with an established central idea (ELA-2-M1)

GLE 18: Organize individual paragraphs with topic sentences, relevant elaboration, and concluding sentences (ELA-2-M1)

GLE 42a: Locate and integrate information from grade-appropriate resources, including multiple printed texts (e.g., encyclopedias, atlases, library catalogs, specialized dictionaries, almanacs, technical encyclopedias)

GLE 46: Use word processing and/or other technology to draft, revise, and publish a variety of works, including compositions, investigative reports, and business letters (ELA-5-M4)

Seventh Grade:

GLE 5: Interpret ideas and information in a variety of texts, including periodical articles, editorials, and lyrics, and make connections to real-life situations and other texts (ELA-1-M4)

GLE 15a: Write multi-paragraph compositions on student- or teacher-selected topics organized with established central idea (ELA-2-M1)

GLE 40c: Locate and integrate information from a variety of grade-appropriate resources, including: other media sources (e.g., audio and video tapes, films, documentaries, television, radio) (ELA-5-M2)

GLE 44: Use word processing and/or other technology to draft, revise, and publish a variety of works, including reports and research documents (ELA-5-M4)

Eighth Grade:

GLE 24a: Write paragraphs and compositions following standard English structure and usage, including varied sentence structures and patterns, including complex sentences (ELA-3-M3)

GLE 39d: Locate and select information using organizational features of grade-appropriate resources, including organizational features of electronic information (e.g., Web resources including online sources and remote sites) (ELA-5-M1)

GLE 42b: Gather and select information using data-gathering strategies/tools, including interviewing (ELA-5-M3)

GLE 44: Use word processing and/or other technology to draft, revise, and publish a variety of works, including documented research reports with bibliographies (ELA-5-M4)

Lesson Modification Tips: In this lesson, students from each grade level will be following the same basic procedure: collecting and organizing information about the Port of Lake Charles, writing a composition on their selected topic about the port, and sharing what they have learned in a multimedia presentation.

Technology Tips: Video recorders and digital cameras may be used to record interviews with port employees. Students may use Palm Pilots to take notes during the field trip. There are a number of programs which are suitable for synthesizing digital images, sounds, and text files into multimedia presentations : PowerPoint, Producer, Adobe Contribute, Google Docs, etc...

Materials: Web resources and newspaper articles on the Port of Lake Charles; classroom writing materials.

Timeline: 1 Field Trip Day and 3 class periods OR 4 class periods

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Before the class field trip have students select a port-related topic to write about. Topics may include History of the Port of Lake Charles, Economic Impact, Cargo Vessels and Shipping, The SeaFarers Center, Careers at the Port of Lake Charles, Stevedoring, Dredging in the Calcasieu Ship Channel, etc...

Once students have selected their topic, have them make a list of interview questions to ask during their field trip to the port. During the field trip, students should also take notes about their selected topic.

Back in the classroom, have students research web sites and newspaper articles related to their topic. The port website contains a great deal of information as well as the online version of the American Press. Students will create an outline and then organize their notes for writing by category. (The IIM method is a great resource for teaching writing.) : Using each category as a paragraph, have students complete a draft of their paper.

Check for Understanding: Peer editing is a useful activity at this point in the lesson. Once the drafts have been completed and edited, students will write their final report.

Guided Practice: Using the information in the report, digital images, and sound files, students will create a multimedia presentation of their report.

Closure: After multimedia presentations have concluded, have students write something they learned from a classmate on a Post It note. Place the Post Its on a poster board for the whole class to see.

Port of Lake Charles: Classroom Connection Grades 4 - 8 Lesson Plans

Mathematics

Data Analysis

Lesson Objective(s):

The learner will be able to use information from a Port of Lake Charles Shipping Chart to decide which type of graph to create to display the information.

The learner will create a line graph, bar graph or circle graph.

The learner will be able to make predictions about cargo trade using the information presented in their graph.

The learner will be able to calculate mean, median, mode, and range from a data set about shipping.

Louisiana State Content Standards:

Fourth Grade:

GLE 34: Summarize information and relationships revealed by patterns or trends in a graph, and use the information to make predictions (D-1-E)

GLE 35: Find and interpret the meaning of mean, mode, and median of a small set of numbers (using concrete objects) when the answer is a whole number (D-1-E)

GLE 36: Analyze, describe, interpret, and construct various types of charts and graphs using appropriate titles, axis labels, scales, and legends (D-2-E) (D-1-E)

GLE 37: Determine which type of graph best represents a given set of data (D-1-E), (D-2-E)

Fifth Grade:

GLE 38: Use various types of charts and graphs, including double bar graphs, to organize, display, and interpret data and discuss patterns verbally and in writing (D-1-M) (D-2-M) (P-3-M) (A-4-M)

GLE 39: Compare and contrast different scales and labels for bar and line graphs (D-1-M)

GLE 40: Organize and display data using spreadsheets, with technology (D-1-M)

Sixth Grade:

GLE 30: Describe and analyze trends and patterns observed in graphic displays (D-2-M)

GLE 31: Calculate and discuss mean, median, mode, and range of a set of discrete data to solve real-life problems (D-2-M)

Seventh Grade:

GLE 31: Analyze and interpret circle graphs, and determine when a circle graph is the most appropriate type of graph to use (D-2-M)

GLE 32: Describe data in terms of patterns, clustered data, gaps, and outliers (D-2-M)

GLE 33: Analyze discrete and continuous data in real-life applications (D-2-M) (D-6-M)

Eighth Grade:

GLE: 34: Determine what kind of data display is appropriate for a given situation (D-1-M)

GLE 35: Match a data set or graph to a described situation, and vice versa (D-1-M)

GLE 36: Organize and display data using circle graphs (D-1-M)

GLE 37: Analyze and make predictions from discovered data patterns (D-2-M)

Lesson Modification Tips: Students in Grades, 4, 5, 6, and 8 will create a line or a bar graph. Students in Grade 7 will create a circle graph. Grade 6 students will calculate mean, median, mode, and range.

Technology Tips: Students may import the shipping chart into an Excel file for sorting and creating various graphs. The chart may also be displayed on an ActivBoard by accessing the Classroom Connection website.

Materials: Port of Lake Charles Shipping Spreadsheet, newsprint or posterboard, markers, classroom writing materials.

Timeline: 2 class periods

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Review the Port of Lake Charles Shipping Spreadsheet with students. Discuss which types of chart could be used to display the information presented in the spreadsheet. If a bar or line graph is selected discuss how to determine the range and scale for the axes. Decide how the chart will be labeled. If the graph chosen is a circle graph, review with students how to find percentages.

Check for Understanding: Have students determine mean, median, mode, and range in the data set. Check the data for outliers. Have the students state the difference between, line, bar, and circle graphs. Which type of graph can be used to make predictions? (a line graph) Which type of graph compares parts to a whole (a circle graph), which type of graph compares categories (a bar graph).

Guided Practice: Divide students into groups to create their graphs. When all groups are finished, have them share their graphs with the class.

Closure: Have students make predictions about future shipping operations using line graphs.

Port of Lake Charles Shipping Spreadsheet

Traffic Outlook

TONNAGE (SHORT TONS)	ACTUAL	PROJECTED	BUDGETED
	<u>2008</u>	<u>2009</u>	<u>2010</u>
Bagged Cargo	472,055	474,275	460,000
Forest Products	187,866	200,000	100,000
Other	<u>314,643</u>	<u>219,425</u>	<u>249,462</u>
Subtotal	<u>974,564</u>	<u>893,700</u>	<u>809,462</u>
BT-1	3,099,983	2,750,691	2,771,500
BT-2	114,825	80,856	85,000
BT-4	1,107,236	800,000	900,000
LNG	206,860	742,227	1,500,000
Alcoa	<u>530,929</u>	<u>575,629</u>	<u>631,168</u>
Subtotal	<u>5,059,833</u>	<u>4,949,403</u>	<u>5,887,668</u>
Total Port Traffic	<u>6,031,504</u>	<u>5,839,031</u>	<u>6,692,130</u>

* All USDA commodities received bulk and bagged at bagging facility. Tonnage included at City Docks.

Port of Lake Charles: Classroom Connection Grade 8

Louisiana History

Elements of a Good Lesson

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Louisiana State Content Standards: The standards that are addressed by the lesson for each grade level.

Lesson Modification Tips: Suggestions for modifying activities within the lesson to meet the needs of all learners. Also included are suggestions for modifying the lessons for specific grade levels.

Technology Tips: Ideas are presented for using technology to meet the lesson goals.

Materials: A list of materials needed to complete the lesson.

Timeline: An estimate of how long the activity will take

Anticipatory Set: Information or activities to peak student interest and prepare them for learning.

Procedure: Lists what the teacher will say and do and what the students will say and do during the lesson. The procedure often included input and modeling which provide students with information they will need to master the objective. Input provides new information and modeling demonstrates how this information is applied.

Check for Understanding: Practicing an activity to make sure that students understand what to do.

Guided Practice: Students apply their new skills to new problems or activities.

Closure: An activity or discussion that summarizes the lesson.

Lesson Objective(s): Statements that specify what students will be able to do when the lesson is completed.

Louisiana State Content Standards:

GLE 6: Describe ways in which location and physical features have influenced historical events in Louisiana and the development of the state (e.g., Mississippi River/swamp in the Battle of New Orleans) (G-1B-M2)

GLE 13: Describe factors that contribute to economic interdependence at the local, national, and global level, as related to Louisiana's past and present (G-1C-M6)

GLE 14: Analyze, evaluate, and predict consequences of environmental modifications on Louisiana landforms, natural resources, and plant or animal life (G-1D-M1)

GLE 57: Explain reasons for trade between nations and the impact of international trade (E-1B-M6)

GLE 65: Analyze the causes, effects, or impact of a given historical event in Louisiana (H-1A-M3)

GLE 70: Conduct historical research using a variety of resources, and evaluate those resources, to answer historical questions related to Louisiana history (H-1A-M6)

GLE 78: Describe and analyze the impact of Louisiana's geographic features on historic events, settlement patterns, economic development, etc. (H-1D-M4)

Technology Tips: Teachers may need to download the PowerPoint presentations or web slideshows from home to share with their classes if the school system has a web filtering system that blocks media downloads. The use of a computer projector or ActivBoard is highly recommended if all students do not have access to a computer. Students may also use Google Docs for peer editing of their research projects.

Materials: Classroom Connection Website, maps of Southwest Louisiana, Polcky's Activity Booklet

Timeline: 1 field trip (optional) and 2 – 3 class periods.

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Introduce the Port of Lake Charles to the class by locating it on the map on the Port of Lake Charles website, <http://www.portlc.com> and pointing out the various facilities that are on port-owned land or are operated by the Port of Lake Charles: City Docks, Bulk Terminals 1 and 2, L'Auberge du Lac, Sugarcane Bay, British Gas, Dynamic Industries, Port Aggregates, Sempra LNG, Shaw, and the Leucadia

Gasification Plant. Use the map page in Polcky's Activity Booklet to help students get a sense of our geographic position. Find the latitude and longitude of the Port of Lake Charles on the port website: <http://www.portlc.com>

Using the Port of Lake Charles History webpage, discuss with students about the history of the Port of Lake Charles.

Using information about Captain Daniel Goos' 1885 lumber mill and boat building operations from <http://www.cityoflakecharles.com/egov/docs/1192479718590.htm>, discuss with students how access to the Gulf of Mexico through the Calcasieu Ship Channel affected the settlement of our area. Discuss the early lumber trade with Galveston. Locate Goosport on a map of Lake Charles from the information from <http://www.gooscemetry.com/>. Show the slideshow of 1920's and 1930's photos from <http://www.portlc.com/PageDisplay.asp?p1=1864>.

Ask students to try to connect the development of Goosport and the establishment of the Port of Lake Charles with the current economy of Southwest Louisiana. Discuss how goods and services flow in and out of the port continually. Petcoke, oil, natural gas, rice, and US Aid grains are shipped all over the world to places like Kenya, Africa. We import forest products from Brazil, and many other consumer goods. Goods are transported to and from the port using a variety of transportation methods: pipeline, trucks, railcar, and even airplanes. Use the Intermodal maze page with students to reinforce this idea.

Show students the ship channel and share with them how the Port of Lake Charles works with the Army Corps of Engineers to keep the ship channel between 38 and 40 feet deep through dredging operations to allow large ships to navigate through Lake Charles. Optional: If a field trip has not been planned to the Port, invite one of the Lake Charles River Pilots or a member of the Port of Lake Charles staff to speak to the class on dredging operations and how the dredged materials are being used to stop coastal erosion. See the article, <http://www.portlc.com/Newsletter/NewsletterDisplay.asp?p1=1498&p2=Y&Sort=> from the Port of Lake Charles website for background information.

Check for Understanding: Use the history worksheet that can be found at the end of this lesson or in Polcky's Activity Booklet to review the history of the Port of Lake Charles with students.

Guided Practice: Divide the class into groups to conduct research on the history of the Port of Lake Charles and how it has shaped our economy, the U. S. Army Corps of Engineers dredging of the Calcasieu Ship Channel, jobs at the Port of Lake Charles, the general economic impact of the Port of Lake Charles, the rice export industry, oil and natural gas exports, intermodal transportation, and imports that arrive at the Port of Lake Charles.

Students may present their research in PowerPoint, booklet, poster, webpage, etc...

Closure: After all groups have presented, have students write one thing they have learned about how dependent we are on the Port of Lake Charles on a post-it note. Post all the notes on a bulletin board or poster board and discuss whether everything presented has been represented on the board.



History of the Port of Lake Charles

To bring larger _____s to Lake _____ to export lumber, cuts were made in the sand bars of _____ Lake in the late _____. At the turn of the _____, the _____ industry began to replace the _____ industry and _____s were still needed. In _____, the Intracoastal _____ connecting the Sabine and _____ Rivers, was completed. In _____ voters elected to have the _____ River and Lake deepened and widened. The Lake _____ Harbor and Terminal District was formed by Act _____ in _____. _____ and warehouses were created at the end of Sallier Street. The first ship, the Sewalls Point, tied up at the _____ in 1926. In 1938 President Roosevelt signed a bill to dredge 34 miles from _____ Lake to the Gulf of _____ to create the _____ Channel. World War II created a huge demand for industry in Lake _____. Plants such as Firestone exported _____ and rubber. Other plants such as Continental exported oil. Bulk Terminal _____ was built in the _____. Today, the Port of Lake _____ continues to play a major role in the economy of Southwest _____.

1. **1**

2.



3.



4.



5. **1922**

6.



7. **1915**

8.



9. **1924**

10. **1960's**

11.



12.



13.



14.



15. **67**

16. **1800's**

17.



18.



History of Lake Charles Answer Key

To bring larger __18__s to Lake __3__ to export lumber, cuts were made in the sand bars of __4__ Lake in the late __16__. At the turn of the __17__, the __8__ industry began to replace the __12__ industry and __18__s were still needed. In __7__, the Intracoastal __14__ connecting the Sabine and __4__ Rivers, was completed. In __5__ voters elected to have the __4__ River and Lake deepened and widened. The Lake __3__ Harbor and Terminal District was formed by Act __15__ in __9__. __2__ and warehouses were created at the end of Sallier Street. The first ship, the Sewalls Point, tied up at the __2__ in 1926. In 1938 President Roosevelt signed a bill to dredge 34 miles from __4__ Lake to the Gulf of __6__ to create the __4__ __18__ Channel. World War II created a huge demand for industry in Lake __3__. Plants such as Firestone exported __11__ and rubber. Other plants such as Continental exported oil. Bulk Terminal __1__ was built in the __10__. Today, the Port of Lake __3__ continues to play a major role in the economy of Southwest __13__.

Port of Lake Charles: Classroom Connection High School Lesson Plans

Environmental Science

NOAA: PORTS – National Oceanic and Atmospheric Administration: Physical Oceanic Real-Time System – Turning Data into Useful Information

Lesson Objective(s): The learner will discuss practical applications for the NOAA: PORTS system.

The learner will research and discuss the technologies and instrumentation used in gathering the NOAA: PORTS data.

The learner will access the NOAA: PORTS daily over a period of 3 weeks to record data on water levels, currents, winds, air temperature, barometric pressure, and the air gap at the Israel LaFleur (210) Bridge and using Excel or other Spreadsheet program.

The learner will create graphs and charts from the NOAA: PORTS data and use these charts and graphs to make predictions and determine relationships.

Louisiana State Content Standards:

GLE 4: Conduct an investigation that includes multiple trials and record, organize, and display data appropriately (SI-H-A2)

GLE 5: Utilize mathematics, organizational tools, and graphing skills to solve problems (SI-H-A3)

GLE 6: Use technology when appropriate to enhance laboratory investigations and presentations of findings (SI-H-A3)

GLE 7: Choose appropriate models to explain scientific knowledge or experimental results (e.g., objects, mathematical relationships, plans, schemes, examples, role-playing, computer simulations) (SI-H-A4)

GLE 14: Cite examples of scientific advances and emerging technologies and how they affect society (e.g., MRI, DNA in forensics) (SI-H-B3)

GLE 15: Analyze the conclusion from an investigation by using data to determine its validity (SI-H-B4)

GLE 20: Relate environmental quality to quality of life (SE-H-C2)

GLE 26: Determine local actions that can affect the global environment (SE-H-D4)

GLE 27: Describe how accountability toward the environment affects sustainability (SE-H-D5)

Technology Tips: The webpage for the initial lesson may be viewed on ActivBoard to facilitate class discussion. This activity may also be adapted for a computer lab or computer/computer projector combination. Students may also record their data on Palm Pilots.

Materials: <http://tidesandcurrents.noaa.gov/ports.html>

Timeline: 2 full days of class; 3 weeks of partial class time or homework

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance

of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Discuss the ways that the Calcasieu Ship Channel and other bodies of water in Calcasieu and Cameron Parishes are used.

Procedure: Introduce the NOAA: PORTS system. Have students discuss to whom and why the information collected is useful: water levels, currents, winds, air temperature, barometric pressure, and the air gap at the Israel LaFleur (210) Bridge. Access the website and demonstrate how to find the PORTS daily readings.

Check for Understanding: From information on the website and other sources, discuss the types of instrumentation and technologies used in gathering environmental data. Have students design an Excel spreadsheet to display the data they will collect over the next three weeks. Students may be allowed class time to look up and record their data or they may do this from home. Check student's spreadsheets periodically for participation. Ask students to share any trends in the data they may have noticed.

Guided Practice: At the end of the three week period, guide students in the creation of graphs that display the collected data. Using this data, have the students make observations about relations among data and to predict future data.

Closure: Examine historical and statistical data on the NOAA: PORTS website to validate predictions. Compare information from other NOAA: PORTS sites during the same time period.

Port of Lake Charles: Classroom Connection High School Lesson Plans

English Language Arts

Lesson Objective(s):

The learner will gather information on a topic related to the Port of Lake Charles from at least three sources.

The learner will write an informational article a topic related to the Port of Lake Charles.

The learner will present their informational article to the class using a multimedia.

Louisiana State Content Standards:

GLE 39a. Access information and conduct research using various grade-appropriate, data-gathering strategies/tools, including formulating clear research questions (ELA-5-H3)

GLE 39b. Access information and conduct research using various grade-appropriate, data-gathering strategies/tools, including gathering evidence from primary and secondary sources (ELA-5-H3)

GLE 39d. Access information and conduct research using various grade-appropriate, data-gathering strategies/tools, including compiling and organizing information to support the central ideas, concepts, and themes of formal papers or presentations (ELA-5-H3)

GLE 40a. Write a variety of research reports, which include research supporting the main ideas (ELA-5-H3)

GLE 40b. Write a variety of research reports, which include facts, details, examples, and explanations from sources (ELA-5-H3)

GLE 40c. Write a variety of research reports, which include graphics when appropriate (ELA-5-H3)

GLE 40d. Write a variety of research reports, which include complete documentation (e.g., endnotes, parenthetical citations, works cited lists, or bibliographies) (ELA-5-H3)

GLE 43. Analyze information found in a variety of complex graphic organizers, including detailed maps, comparative charts, extended tables, graphs, diagrams, cutaways, overlays, and sidebars to determine usefulness for research (ELA-5-H6)

Lesson Modification Tips: In this lesson, students from each grade level will be following the same basic procedure: collecting and organizing information about the Port of Lake Charles, writing a composition on their selected topic about the port, and sharing what they have learned in a multimedia presentation.

Technology Tips: Video recorders and digital cameras may be used to record interviews with port employees. Students may use Palm Pilots to take notes during the field trip. There are a number of programs which are suitable for synthesizing digital images, sounds, and text files into multimedia presentations : PowerPoint, Producer, Adobe Contribute, Google Docs, etc...

Materials: Web resources and newspaper articles on the Port of Lake Charles; classroom writing materials.

Timeline: 1 Field Trip Day and 3 class periods OR 4 class periods

Anticipatory Set: Introduce the Port of Lake Charles to students using The Port of Lake Charles: Classroom Connection PowerPoint or other web resources, newspaper articles, etc... Share with students that ships come from all over the world (use maps) to bring goods to and from the port. Share with students about the economic importance of the port. Ask if any of them have family members who work there, etc... If a field trip has been planned share some of the things that the class will see during the trip.

Procedure: Before the class field trip have students select a port-related topic to write about. Topics may include History of the Port of Lake Charles, Economic Impact, Cargo Vessels and Shipping, The Seafarers' Center, Careers at the Port of Lake Charles, Stevedoring, Dredging in the Calcasieu Ship Channel, etc...

Once students have selected their topic, have them make a list of interview questions to ask during their field trip to the port. During the field trip, students should also take notes about their selected topic.

Back in the classroom, have students research web sites and newspaper articles related to their topic. The port website contains a great deal of information as well as the online version of the American Press. Students will create an outline and then organize their notes for writing by category.

Check for Understanding: Peer editing is a useful activity at this point in the lesson. Once the drafts have been completed and edited, students will write their final report.

Guided Practice: Using the information in the report, digital images, and sound files, students will create a multimedia presentation of their report.

Closure: After multimedia presentations have concluded, have students write something they learned from a classmate on a Post It note. Place the Post Its on a poster board for the whole class to see.