



Exploration and Settlement: Florida During the Age of Sail

LESSON OVERVIEW: For more than 250 years, many explorers set out for Florida in search of land, wealth, and opportunity. Students will examine exploration efforts, key figures, and their significance to Florida through images, interactives, worksheets, slides, video presentations and background information.

STANDARDS, GRADE 3RD, 4TH AND 5TH:

3rd - SS.3.A.1.1; SS.3.A.1.2; LAFS.3.RI.2.5; LAFS.3.RI.3.9;

4th - SS.4.A.3.1; SS.4.A.3.2; SS.4.A.3.3; SS.4.A.3.6; SS.4.A.3.7; SC.4.N.1;
LAFS.4.RL.1.3; LAFS.4.RI.1.3; LAFS.4.RL.2.4; VA.4.C.1.1; VA.4.C.1.2; SS.4.G.1.1;
SS.4.G.1.2; SS.4.G.1.3; SC.4.N.1; SC.4.E.5.1; SC.4.E.5.3; SC.4.E.5.4; SC.4.E.6.5;
MA.4.G.5.1; MA.4.G.5.2; MA.4.G.3.3; MAFS.4.MD.3.5; MAFS.4.MD.3.6;
MAFS.4.MD.3.7.

5th - SS.5.A.1.1; SS.5.A.3.1; SS.5.A.3.2; SS.5.A.3.3; SS.5.A.4.1;

ACTIVITY 1. Explorers of Florida

ACTIVITY 2. Planning for Hernando DeSoto

ACTIVITY 3. Life at Sea

ACTIVITY 4. Celestial Navigation





ACTIVITY #1 - The Explorers of Florida

Lesson Essential Question: How do Florida's early explorers and their motivations compare?

Objective: Students will compare the experiences and the characteristics of several of Florida's early explorers.

Materials:

- Teacher Background Information
 - Early Explorers cards and Background Information
 - Compare and Contrast Venn Diagram
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Instructions:

- 1. Use the Teacher Background Information** to introduce the different explorers of Florida to student. Ask what they think were the motivations for coming to Florida.
- 2. Have students download and read the images and info on all four explorers** (Juan Ponce de Leon, Panfilo de Narvaez, Tristan de Luna Arellano, Rene Goulaine de Laudonniere. Students will then choose two (2) they will compare.
- 3. Using the Compare and Contrast Venn Diagram**, students will note the similarities and differences of the two explorers based on what they have read.
- 4. Discuss the students' findings.**



Teacher Background Information: European Exploration and Colonization

Adapted from myflorida.com

Written records about life in Florida began with the arrival of the Spanish explorer and adventurer Juan Ponce de León in 1513. Sometime between April 2 and April 8, Ponce de León waded ashore on the northeast coast of Florida, possibly near present-day St. Augustine. He called the area la Florida, in honor of Pascua florida ("feast of the flowers"), Spain's Eastertime celebration. Other Europeans may have reached Florida earlier, but no firm evidence of this has been found.

On another voyage in 1521, Ponce de León landed on the southwestern coast of the peninsula, accompanied by two-hundred people, fifty horses, and numerous work animals. His colonization attempt quickly failed because of attacks by native people. However, Ponce de León's activities served to identify Florida as a desirable place for explorers, missionaries, and treasure seekers.

In 1539 Hernando DeSoto began another expedition in search of gold and silver, which took him on a long trek through Florida and what is now the southeastern United States. For four years, DeSoto's expedition wandered, in hopes of finding the fabled wealth of the Indian people. DeSoto and his soldiers camped for five months in the area now known as Tallahassee. DeSoto died near the Mississippi River in 1542. Survivors of his expedition eventually reached Mexico.

No great treasure awaited the Spanish conquistadores who explored Florida. However, their stories helped inform Europeans about Florida and its relationship to Cuba, Mexico, and Central and South America, from which Spain regularly shipped gold, silver, and other products. Groups of Spanish vessels, called plate fleets,



Juan Ponce de León

usually sailed up the Gulf Stream through the straits that parallel Florida's Keys. Aware of this route, pirates preyed on the fleets. Hurricanes created additional hazards, sometimes wrecking the ships on the reefs and shoals along Florida's eastern coast.

In 1559 Tristán de Luna y Arellano led another attempt by Europeans to colonize Florida. He established a settlement at Pensacola Bay, but a series of misfortunes caused his efforts to be abandoned after two years.

Spain was not the only European nation that found Florida attractive. In 1562 the French protestant Jean Ribault explored the area. Two years later, fellow Frenchman René Goulaine de

Teacher Background Information: European Exploration and Colonization

continued

Adapted from myflorida.com

Laudonnière established Fort Caroline at the mouth of the St. Johns River, near present-day Jacksonville.

These French adventurers caused Spain to speed up her plans for colonization. Pedro Menéndez de Avilés hurried across the Atlantic, his sights set on removing the French and creating a Spanish settlement. Menéndez arrived in 1565 at a place he called San Agustín (St. Augustine) and established the first permanent European settlement in what is now the United States. He accomplished his goal of removing the French, attacking and killing all settlers except for non-combatants and Frenchmen who professed belief in the Roman Catholic faith. Menéndez captured Fort Caroline and renamed it San Mateo.

In fact, as late as 1600, Spain's power over what is now the southeastern United States was unquestioned. When English settlers came to America, they established their first colonies well to the North—at Jamestown (in the present state of Virginia) in 1607 and Plymouth (in the present state of Massachusetts) in 1620. English colonists wanted to take advantage of the continent's natural resources and gradually pushed the borders of Spanish power

southward into present-day southern Georgia. At the same time, French explorers were moving down the Mississippi River valley and eastward along the Gulf Coast.

The English colonists in the Carolina colonies were particularly hostile toward Spain. Led by Colonel James Moore, the Carolinians and their Creek Indian allies attacked Spanish Florida in 1702 and destroyed the town of St. Augustine. However, they could not capture the fort, named Castillo de San Marcos. Two years later, they destroyed the Spanish missions between Tallahassee and St. Augustine, killing many native people and enslaving many others. The French continued to harass Spanish Florida's western border and captured Pensacola in 1719, twenty-one years after the town had been established.

Spain's adversaries moved even closer when England founded Georgia in 1733, its southernmost continental colony. Georgians attacked Florida in 1740, assaulting the Castillo de San Marcos at St. Augustine for almost a month. While the attack was not successful, it did point out the growing weakness of Spanish Florida.





Juan Ponce de Leon

Adapted from myflorida.com



Juan Ponce de Leon

Juan Ponce de Leon founded the first European settlement on Puerto Rico and who is credited with being the first European to reach Florida (1513).

As a reward for suppressing an Indian mutiny, Ponce de León was named the provincial governor of the eastern part of the island of Hispaniola.

At the time he did not realize that he was on the mainland of North America and instead supposed he had landed on an island. He named the region Florida because it was discovered at Easter time.

He was wounded by an arrow during a Calusa Indian attack, and he died of an infection after being returned to Cuba. Puerto Rico's third largest city, Ponce, is named in his honor.



Panfilo de Narvaez

Adapted from myflorida.com



Panfilo de Narvaez

Panfilo de Narvaez led a Spanish royal expedition to North America in 1527. After surviving a hurricane near Cuba, his expedition landed on the west coast of Florida, near Tampa Bay in April 1528.

1526, Narvaez was granted the land of Florida by the Emperor Charles V. He led an expedition there with some 250-300 men in 1528.

A series of hurricanes and fights with the local Indians killed many of the crew, and the captain of the ship sailed to Mexico without many of his men.

The stranded men soon built five crude barges on which they sailed west, hoping to reach a Spanish settlement in Mexico. Along the way, three of the vessels sank. One of these was captained by Narváez, who was never seen again.

The two surviving rafts, carrying about 80 men, landed at Galveston Island, Texas. After a very cold winter with very little food, only 15 men survived. In the spring, the men traveled west by land, walking along the Colorado River, through the deserts of modern New Mexico, and Texas, before finally reaching their countrymen.



Tristan De Luna y Arellano

Adapted from myflorida.com



Tristan De Luna y Arellano

Tristán de Luna y Arellano was staged in New Spain (modern Mexico) and it was his job to start a colony at Pensacola.

On June 11, 1559, Luna's fleet left New Spain with some 1,500 soldiers and other colonists, 240 horses, and well over a million pounds of food.

On August 14, the fleet anchored and sent one ship back with news of their arrival, unloading people and equipment over the next five weeks, but leaving the food on board ship in order to protect it until shelter could be built on shore. On September 19, a hurricane devastated the

remaining ships at anchor, leaving only three afloat the next day.

He tried to keep the colonists alive for the next two years after the destruction of their food. He sent 4 missions for help to New Spain, and moved most of the colonists inland to the Indian town of Nanipacana. He also sent a group of 200-men northward to the town of Coosa located in Northwest Georgia in search of food to ship down river.

In March 1560, the unanimous vote by everyone was to abandon the effort and De Luna was no longer in charge.



Rene Goulaine de Laudonniere

Adapted from myflorida.com



Rene Goulaine de Laudonniere

Laudonniere was part of a group of Huguenots (French Protestants) under the command of Jean Ribault.

Laudonniere had built Fort Caroline into a growing French colony in 1564 with the intent of challenging the Spanish dominance in this part of the New World. It was built where the city of Jacksonville is today.

He described the rivers that he sailed along and the land surrounding them, making it possible to share some of the first pictures of the New

World with the help of artists that were with him.

Laudonniere tried to warn Ribault, of a Spanish attack, but was ignored. Instead, Ribault set sail in pursuit of the Spanish, only to have his fleet destroyed by a devastating storm.

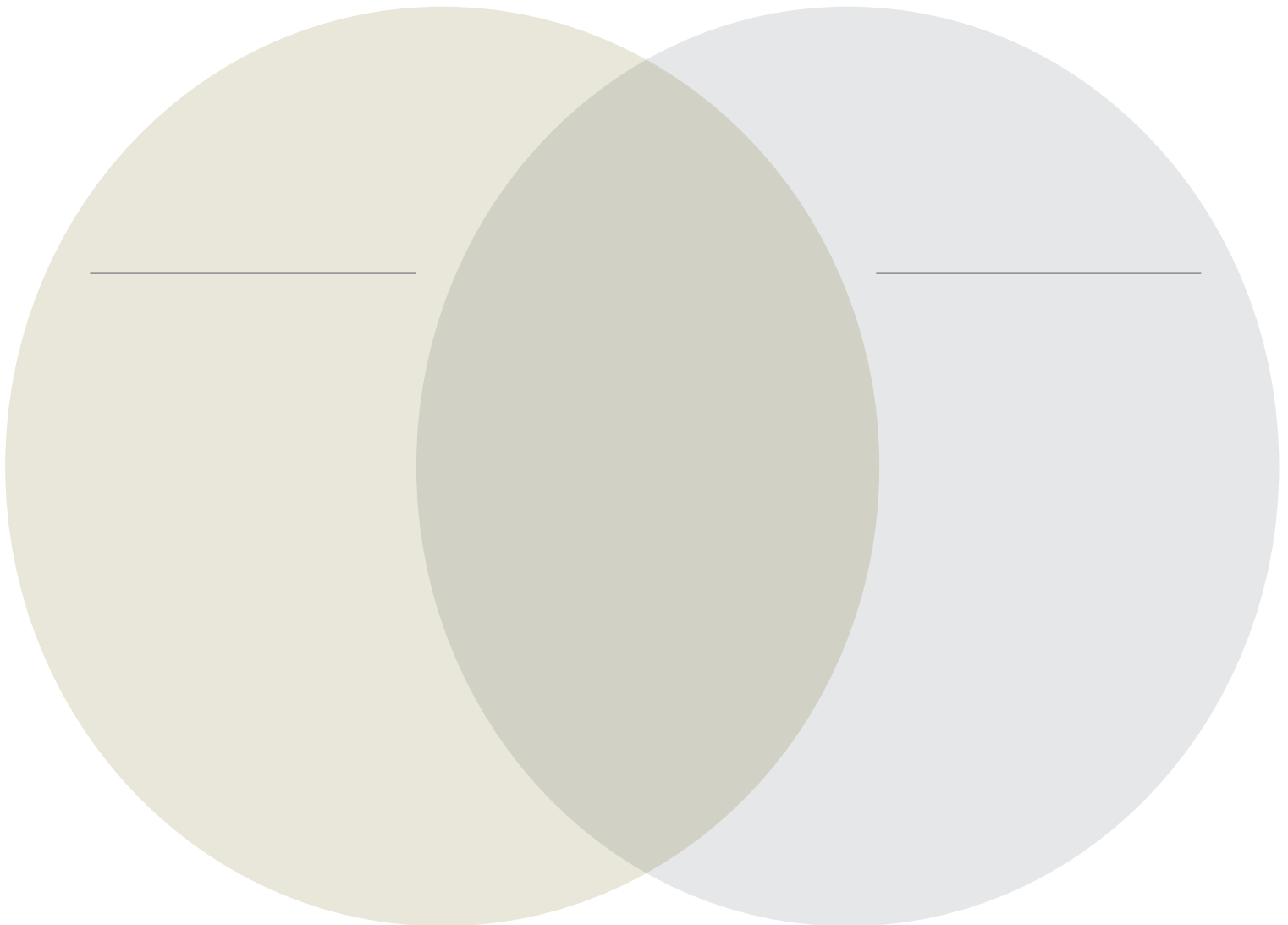
Laudonniere's job was to reinforce Fort Caroline to withstand the anticipated Spanish attack which came in the midst of a torrential rainstorm. The French force was defeated in 1565, but Laudonniere escaped in his nightshirt and lived to write the history.



Compare and Contrast

Adapted from myflorida.com

1. After reading about Florida's explorers, choose two explorers and write their names on the lines in the circles.
2. Write down how they are similar in the area where the circles overlap.
3. Write down how they are different in the rest of the circles





ACTIVITY #2 - Planning for Hernando DeSoto

Lesson Essential Question: How did explorers coming to our area plan for conquest?

Objective: Students will learn to categorize and sort data in order to formulate a plan for a Spanish expedition.

Materials:

- Background Information
 - DeSoto Expedition Supplies and Volunteers list
 - Sorting Worksheet
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Instructions:

1. Students will read the background information on the expedition of Hernando DeSoto and his motivations for Spanish conquest – Gold, Glory, and God when coming to our area of Florida.

2. Students are asked to make a list of considerations that an expedition is to have in order to succeed. The teacher can display student responses in the form of a word splash while students take notes.

3. Students will receive a randomized list of Supplies and Volunteers from the 1539 expedition of Hernando DeSoto. Students are to help DeSoto plan for starting a colony in Florida by equipping the expedition with all that is required. It will be the job of each student to work together to sort the random list into 4 categories. Students use the sorting worksheet to determine how to sort into the four categories, in addition to figuring out how to sort the items into each one using the sorting organizer. (For advanced students, the categories can be determined by the students themselves)

4. SUMMARY: Students are asked to think about the motivations for conquest (gold, glory and God.) Using four of the items from their sorted list activity, (one from each category created) have students construct an argument to show why these items might have been necessary for explorers to achieve the three G's in their conquest. After sharing their reasons, other students can argue for or against by comparing with their own items and their reasons.



Background Information

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

Hernando DeSoto Arrives and Explores Florida

Hernando DeSoto was given the title Governor of Cuba by the king of Spain, Carlos V, in 1536. He was also given “La Florida,” the area previously given to Pánfilo de Narváez.

DeSoto chose to use Cuba as a home base for his supplies and for planning his expeditions. He spent his fortune recruiting, arming, and transporting his own army. When he left Spain in 1538, he was heavily in debt. He believed, however, that he would regain his fortune by finding gold in “La Florida.”

The Expedition to La Florida

DeSoto sent guides ahead to locate and chart a course for his army. The expedition set sail for Florida on the 18th of May 1539, with five large vessels and four smaller ones. On these vessels were DeSoto’s army as well as priests, women, horses, mules, war dogs, and pigs. On May 25th, they made landfall in the Tampa Bay area. DeSoto’s expedition initially landed at Piney Point. They made camp at Uzita, which was a native village on the northern shore of the Little Manatee River. Amazingly, a cavalry patrol found a Spanish survivor from an earlier expedition. He had been searching for gold along with Narváez eleven years earlier. The Spanish survivor’s name was Juan Ortiz and he had been living as an Indian. Ortiz’s rescue was a great find for DeSoto since Ortiz could communicate in Spanish and many of the native languages. He could also function as a guide for the area. As DeSoto’s expedition moved inland, however, they met different native groups whose languages were unfamiliar to Ortiz.

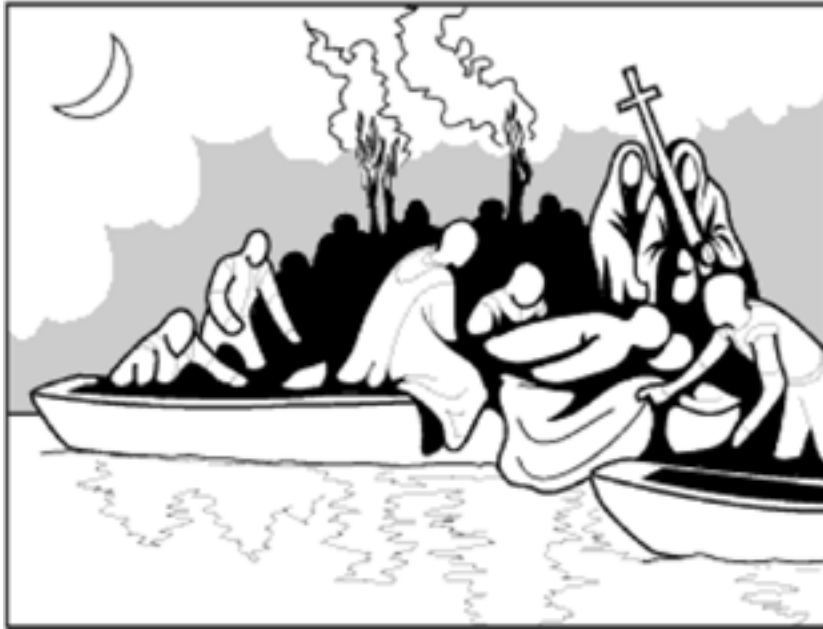


Route of DeSoto through Florida.

The March Inland

The march inland began July 15, 1539, and entered previously unexplored areas of Florida’s forests, rivers, bogs, and sand hills. In the vicinity of Zephyrhills and Lumberton, they found no water and several people on the journey almost died of thirst. When they finally came to the Alafia River, they constructed a bridge and crossed successfully.

Hernando DeSoto and his men trudged through the wetland areas at the Cove of the Withlacoochee River. One of DeSoto’s challenges was crossing the Withlacoochee River because it had such strong currents. The army stretched a rope from one side to the other and managed to cross successfully. On July 29th, DeSoto occupied the Timucuan Indian province of Ocali (near present-day Ocala). There, DeSoto left the main part of his army and led a smaller group through present-day Levy and Alachua counties. When they reached the Santa Fe River, they crossed it and camped at a village named Aguacaleyquen. Hernando DeSoto then sent a small group of men back to lead his main group northward to be reunited with them.

Background Information*continued*https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

When DeSoto died, his men buried him in the Mississippi River.

At War with the Natives

DeSoto violated the king's ordinance to treat the natives well and convert them to Catholicism. He let it be known that he would not let anyone stand in his way. DeSoto enslaved, mutilated, and executed the natives, often without provocation. DeSoto had one open-field battle at Napituca near Live Oak. DeSoto and his men were positioned in the surrounding woods in anticipation of an ambush. When the natives arrived, they charged. Some of the Indians were captured as slaves. Others were shot. DeSoto held some chiefs as prisoners for a short time. After this encounter, the Spaniards traveled west and came to the River of Deer (now known as the Suwannee River). In the beginning of October, DeSoto and his men crossed the Aucilla River with difficulty. Upon crossing it, they entered the Apalachee's main area. The natives destroyed their crops and burned their villages as they drew back, so that DeSoto and his men could not use them.

The Spaniards were now under constant attack by the natives, who would kill the Spanish dispatch riders. In addition, brave native hostages used as guides often led army troops directly into ambushes, even though it most certainly meant death for them as well as the Spaniards. As DeSoto continued to head west, he came upon Anhaica, the main town of the Apalachee. It was here that he made camp for the winter. He also sent a small group of men southward to Tampa Bay to lead his ships and remaining supplies to him at Anhaica. The remains of iron crossbows, iron nails, and dated copper coins have been found at this site.

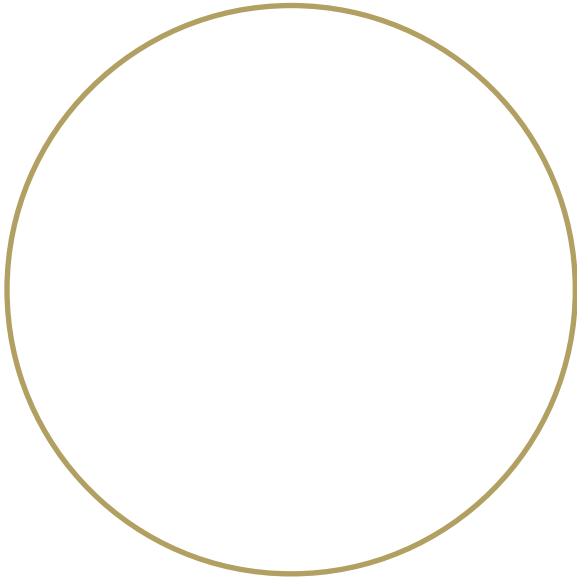
DeSoto Heads North

DeSoto and his army decided to head north out of Florida into Georgia. Later, he explored areas of North and South Carolina, as well as Tennessee and Alabama. By the early 1540s, he headed across the Mississippi River to look for gold and silver in what is now Arkansas. In 1542, he became ill and died of a fever.

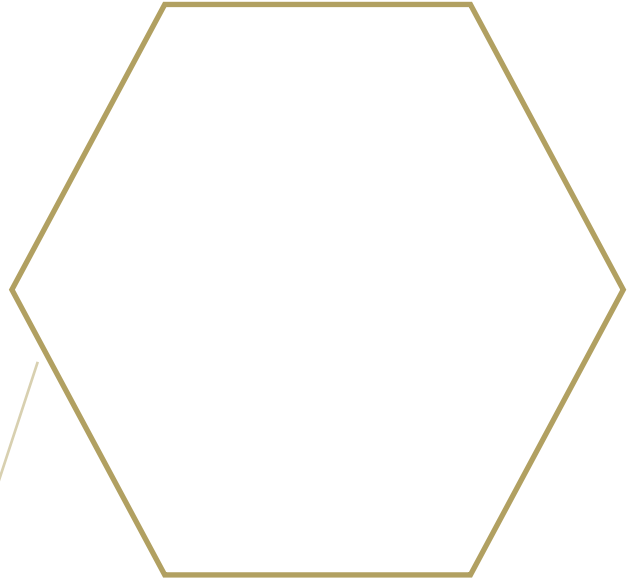


Sorting Worksheet

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

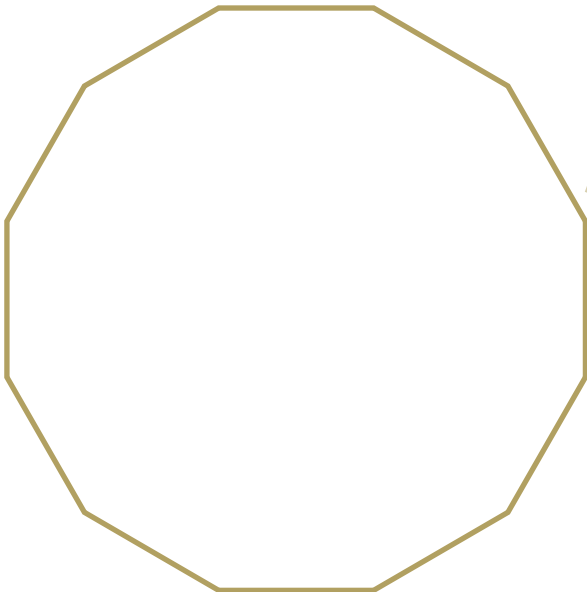


What will we need to establish a settlement?

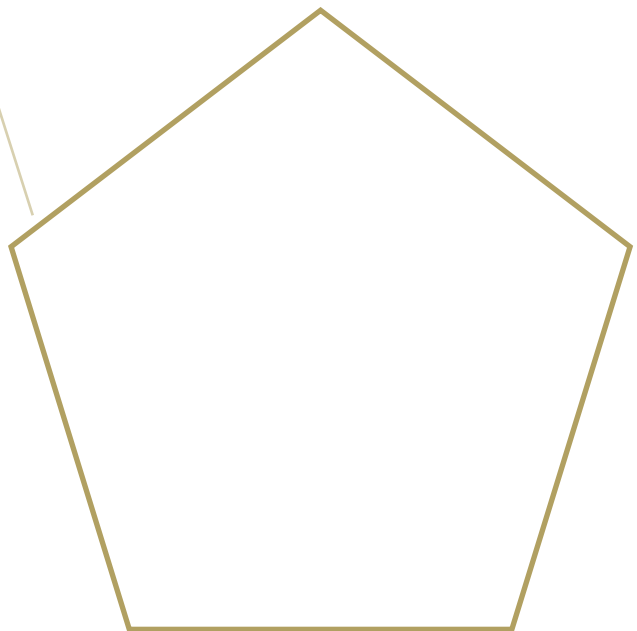


What will we need to conquer the land?

**DeSoto
Expedition**



What will we need to keep the ships sailing?



What will we need to keep us alive?



DeSoto Expedition Supply and Volunteer List:

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

The supplies and volunteers below are listed at random.

Sort the list into the 4 categories using the Sorting Worksheet

5 large vessels army soldiers priests 200 horses wives

trading goods Blood hounds salted pork crossbows War dogs

nails black powder accountants sails carpenters

mules iron chains medicine pigs 4 small vessels

helmets servants rum harquebuses, (early muskets)

tools seeds navigators wood physicians

620 volunteers shields lances armor clothing

cooper (barrel maker) armorers blacksmiths water forges

iron slave collars forges tailors rope plows friars



ACTIVITY #3 - Life at Sea

Lesson Essential Question: Why was life difficult on-board sailing vessels?

Objective: Students will make inferences regarding the reasons for a sailor's difficult journey with respect to food, medical treatment (sickness & disease) malnutrition, boredom, hard work, and unsanitary conditions. Students will evaluate situations by using context clues to understand vocabulary terms. Students will reflect upon how these reasons can have biological or psychological effects.

Materials:

- Background Information
- Student scenarios
- Images / descriptions of artifacts
- Vocabulary list and definitions
- Frayer Diagram
- Context Clues

Vocabulary: scurvy, hard tack, rigging, hull, deck, tedium, cauterize, hallucinate, roiling, fester.

S.T.E.M. Connections: Science- Biological effects on the body, psychological effects on the mind, medical knowledge of the day (or lack thereof.)

Instructions:

1. Students view images of different Treasure Seekers artifacts at the History Center that have been salvaged from shipwrecks. Students must ascertain what they all may have in common as it relates to being on board a ship (Pipes, lice comb, cannon shot, wine jug, onion bottle, hard tack, dice, peg chess piece - These images all represent personal items that sailors carried on board that would have been useful on a long voyage. Possible reasons were boredom, sickness, unsanitary conditions, danger.)

2. Divide the ship scenarios among the students. Each describes a given situation they are in. Students will read the scenarios to understand the problems a sailor would face in each. Each scenario contains 2 highlighted words they may be unfamiliar with. Introduce to students how to use the Context Clues to determine the meaning of the highlighted words in their scenario. Students can then use the Frayer Diagram to assist in this process by noting by: Definition in Their Own Words, Drawing, Use in a Sentence, and What it is Not. Have the students rotate through each scenario.

3. Students create their own diary entry as a sailor describing conditions and how they affected sailors and explorers biologically or psychologically. Students will also use at least three words that they have learned.



1. Hard Tack

This is a type of biscuit made mostly of flour, water, and perhaps salt. It lasted for a long time and served its purpose when other food was scarce, but was not nutritious or flavorful, and often was contaminated with worms on long voyages.



2. Playing Dice

This game of chance has been around since ancient times and was played for gambling. Made from many materials including bone, ivory, or wood.



3. Onion Bottle

This ceramic bottle may have store wine or rum. It was shape this so that it would not tip over on a rocking ship. Drinking alcohol was a popular activity but it was also more sanitary than drinking contaminated water. *Image courtesy of the Tampa Bay History Center collection.*



4. Lice Comb

This lice comb was made from tortoise shell and the thinly spaced tines were used to pull lice or their eggs from a sailor's hair. Hygiene was limited aboard a ship and it needed to be practiced under horribly unclean conditions. Insects like fleas, mites, and other vermin such as lice and rats were common below deck.

Image courtesy of the Tampa Bay History Center collection.



5. Pipe

This clay pipe was found among the shipwrecked items from the Spanish Tierra Firme Fleet that was lost in 1622 off the Florida Keys due to a hurricane. This was a common item among sailors. *Image courtesy of the Tampa Bay History Center collection.*



6. Crucifix

This gold crucifix was found among shipwrecked items from the Spanish Tierra Firme Fleet that was lost in 1622 off the Florida Keys due to a hurricane. The Spanish sailors practiced Catholicism as their religion and was likely used in daily prayer. *Image courtesy of the Tampa Bay History Center collection.*



Ship Scenarios

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

SCENARIO #1

You have developed a bad infection in the skin on your legs. You ask for them to be “bled” again. The open sore on your thigh seems to have gotten worse since the doctor bandaged it and it is starting to **fester**. You’re afraid the wound may have to be **cauterized** with the iron. You have also lost another tooth.

SCENARIO #2

The weather has been terrible. You have not slept in days due to the sea sickness and having to sleep outside on the **deck** among the chain and **rigging** in the rain and cold. Just as you become exhausted enough to sleep, it’s time for your shift. You are irritable, you have trouble concentrating and you are beginning to make mistakes in your work.

SCENARIO #3

The journey has been long, uneventful, and the **tedium** of every day makes you feel like you will go mad. You often **hallucinate**, and you can’t tell what is real and what is not anymore.

SCENARIO #4

You enter the lower deck of the ship for food rations only to find the **hard tack** and meat to be covered in maggots, and there are rat droppings on the floor. There simply is not enough healthy food and you are feeling sick and weak. Your shipmates are already coming down with **scurvy**.

SCENARIO #5

Your ship survived a recent battle but took damage. Because of your carpentry skills, you have been chosen for the dangerous task to repair the hole in the lower side of the ship’s **hull** above the **roiling** water and nailing lead sheets to patch it.



Frayer's Model

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

Definition in own words	Use it in a sentence
Word	
What it is NOT (opposite)	Picture



Context Clues

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm



When you use clues in a story
to figure out the meaning of a new word you are using
context clues!

Clues are in the same sentence as the new word and the sentences around it too.

Clues can be found by thinking about how the word is used in the sentence.

Clues can also be found by thinking about the main idea and details of the story.



Vocabulary List

https://fcit.usf.edu/florida/lessons/de_soto/de_soto1.htm

1. **Scurvy:** A disease caused by the lack of Vitamin C, resulting in swollen, bleeding gums and the opening of wounds.
2. **Hard Tack:** A hard biscuit formerly used aboard ships
3. **Rigging:** Lines and chains used aboard a ship especially in working sail and supporting masts.
4. **Hull:** The frame or body of a ship or boat, not including the masts, yards, sails, or rigging.
5. **Deck:** A platform in a ship serving usually as a structural element and forming the floor for its compartments.
6. **Tedium:** The state of being tiresome because of length or dullness – boredom.
7. **Cauterize:** To burn, sear or destroy infected tissue.
8. **Hallucinate:** To affect with visions or imaginary perceptions.
9. **Roiling:** To be stirred up or moving turbulently.
10. **Fester:** To rot.



ACTIVITY #4 - Celestial Navigation in the Age of Exploration

Lesson Essential Question: How did sailors and explorers determine their latitude on the open sea?

Objective: Students will examine the methods used in navigation to determine latitude with scientific instruments of the day.

Materials:

- **Navigation Tools Worksheet**
- **Link: Power Point PDF – Celestial Navigation Tools.**
- **Acrostic word sheet**

Vocabulary: Astrolabe, quadrant, celestial navigation, astronomy, Polaris, latitude, back-staff, cross-staff, chart, compass, quadrant, globe, armillary sphere, and sundial

S.T.E.M. Connections: Mathematics - geometry, time, Science - astronomy, meteorology, navigation.

Instructions:

1. Ask the students about how we navigate today; What tools and knowledge do we currently use? Have the students speculate what sailors and explorers needed to have knowledge of in order to perform navigation 400 years ago.

2. Students are shown models of navigational instruments and how they were used by viewing the link of the Celestial Navigation PowerPoint. While viewing the presentation, students take notes on each instrument using the Navigation Tools Worksheet.

CELESTIAL NAVIGATION PRESENTATION

3. Discuss as a class.

4. SUMMARY: Students create an acrostic summary using the word LATITUDE written vertically. Using each letter, students begin a word or phrase that related to how latitude was determined. (*example included*)



View the presentation and take notes on each instrument using the Navigation Tools Worksheet

CELESTIAL NAVIGATION PRESENTATION

Navigation Worksheet

Match the instrument to the description by writing a letter in the blank.

_____back-staff

_____cross-staff

_____chart

_____astrolabe

_____quadrant

_____globe

_____armillary sphere

_____sundial

- A.** Used to find the time of day. It is aligned with north and a shadow falls on the gauge to show the time.
- B.** This kind of innovative map was first used in the 15th century to show a view of the earth from outer space.
- D.** Also called a Davis Quadrant after its inventor, this instrument was used to sight the sun to find latitude. Since looking at the sun could injure the eye, shadows were employed to get a reading.
- E.** This map of the water was originally called a portolan. It was the first map of its kind: a literal representation of the coastline.
- F.** Used to find latitude. It uses different sized transoms to measure the height of an object above the horizon.
- G.** This instrument measured the altitude of an object above the horizon (noon altitude of sun or declination of a known star to determine latitude. Made by the Portuguese in 1481
- H.** Usually made from wood. Its name means a fourth of a circle. Like many of these instruments it used to measure the height of a star or the sun above the horizon.
- I.** A three-dimensional diagram of the stars, it looks like a series of rings attached to form a sphere.



ACROSTIC SUMMARY

Using each letter, begin a word or phrase that related to how latitude was determined during the Age of Exploration.

L _____

A _____

T _____

I _____

T _____

U _____

D _____

E _____