

# PIRATES! <br> A CURRICULUM-BASED 

EDUCATIONAL ADVENTURE IN PIRATE \& FLORIDA HISTORY

FOLLOWS SUNSHINE STATE STANDARDS


## Dear Educator:

Id like to invite you and your students to attack the Golden Age of Piracy and its exciting maritime history at my St. Augustine Pirate \& Treasure Museum, located directed across from. the Castillo de San Marcos-a massive 17th century fort constructed by the Spanish on the bay front to protect St. Augustine from one too many devastating pirate raids.
live been fascinated with pirates and their history since I was a child. The science behind their methods of navigation, sailings, and cannon fire, and their exploits around the globe, ignited my young imagination and helped me embrace subjects that might otherwise have seemed boring.
For much of my adult life, live been amassing one of the greatest collections of authentic pirate artifacts in the world and I enjoy sharing them with curious visitors at The Pirate Museum in the nation's oldest city, itself steeped in unbelievable history and the colonial adventures of the ones who came before us.

This historical museum journey through the Golden Age of Piracy with centuries-old, rare artifacts in a Disney-like setting with 21 st century interactive and immersive technology, has educated, enlightened and entertained children of all ages since our opening in December 2010. Visitors, young and old, thoroughly enjoy firing real cannon, touching a 400 -year-old treasure chest, lifting s a salvaged gold bar, discovering artifacts hidden in Discovery Drawers throughout the museum, flipping through our interactive Book of Pirates, and exploring our touch screen map of pirate strongholds of yore.
We have been named a top national attraction by Budget Travel magazine, and featured in the Miami Herald, AOL Travel, Philadelphia Inquirer, Philadelphia Daily News, Orlando Sentinel, and on CNN International, NBC Philadelphia's The 10! Show, and Good Morning Jacksonville.
Enclosed you'll find pro- and post-visit in-class activities that include history, geography, science, art, reading and discussion, and fun research, all of which are designed to enhance your students' ability to work in groups as well as problem-solve on their own, and foster their leadership skills. We hope you and your students enjoy these activities designed to Sunshine State standards -and your own.

> See you soon!
> Regards,
> Pat Croce

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## The Golden Age of Piracy

## History

## What is the Golden Age of Piracy?

Piracy: Fantasy, Fable or History? To many, piracy in the traditional sense is a fantastic story, sort of like Roman mythology. Popular films such as the Pirates of the Caribbean series and novels like Robert Louis Stevenson's Treasure Island keep pirates alive in pop culture. But there was a time when pillaging and plundering was a real threat.

Piracy has been around since the days of the Roman Empire. At the St. Augustine Pirate \& Treasure Museum, we focus on the Golden Age of Piracy (1690-1730) when piracy was rampant on shipping routes around the world. Countries lost millions of dollars in goods to pirates. Pirates stole spices, textiles, tools, herbs, slaves, and even skilled craftsmen; not just the gold, silver and precious stones we associate with pirate treasure today.

## Why is it called the 'Golden Age'?

The Golden Age of Piracy is roughly estimated as the period from 1690 to 1730, and marks the height of pirate activity worldwide. The exact period is debatable, but it essentially spans England's King James I making peace with Spain in 1689 to the end of piratical activities of British ex-privateers.

When King James I called a truce with Spain, many English privateers continued their looting ways. But this time, the Crown's ex-privateers were working for themselves and keeping all of their plunder. With piracy now so profitable, it exploded worldwide.

In 1698 under William III's rule, the British Parliament enacted the Piracy Act, which reinforced that acts of robbery on the high seas were illegal. It also made the death penalty for piracy officially legal. But because the Act was not really enforced until much later, the British indirectly created some of the most famous pirates in history. During Queen Anne's War (1702-1713) with Spain and France, the English recruited merchant ships into their Navy as privateers, to attack and loot Spanish and French ships. Privateers kept a lucrative portion of their plunder. This essentially helped cripple the powerful Spanish empire.

ST. AUGUSTINE PIRATE कु TREASURE MUSEUM

When Queen Anne's War ended, privateers once again found themselves out of work. With more than a decade of experience, many privateers continued their looting ways-a practice that created some of the most notorious pirates in history, including 'Black Bart' Roberts (died 1722) and Edward 'Blackbeard' Teach (died 1718). The British increased their efforts to rid the seas of pirates and arrested, captured or killed scores of pirates throughout the 1720s. By the end of the decade, the Golden Age of Piracy had come to an end. But the free spirit of the 'Brethren of the coast' lived on.

## Who is considered a high-seas robber?

Pirate: A general term for any person involved in robbery at sea, including buccaneers, corsairs, and privateers.

Privateer: A person who is legally entitled by Letter of Marque to attack enemy ships. Also the term used to describe the ships a privateer used.

Buccaneer: A pirate or privateer who attacked Spanish ships and prosperous ports in the West Indies, Central and South America in the 1600s.

Corsair: The term used to describe pirates or privateers who operated in the Mediterranean. It also refers to the ships sailed by these pirates.

## Who were the most famous pirates in history?

There were literally hundreds of pirates during the Golden Age of Piracy, but only a few became legends. Find out more about these standout infamous rogues!

Francis Drake (1540-1596) (Sir, knighted 1581) was one of the very first privateers. This English sailor became famous for circling the globe from 1577 to 1580 . He was an incredibly successful privateer for the English Crown, pillaging vast treasures from the Spanish. Drake attacked and burned the city of St. Augustine in 1586 as part of England's campaign against Spanish settlements in the New World.

Robert Searles (birth and death unknown) was an English privateer, who served as a lieutenant for Henry Morgan during Morgan's raid on Panama. Searles attacked and burned the city of St. Augustine in 1668 as retribution for a Spanish attack on New Providence (now Nassau) in the Bahamas. The Castillo de San Marcos, a $17^{\text {th }}$ century Spanish coquina stone fort, was built in St. Augustine as a result of Searles' attack. This fort still stands today, directly across the street from the St. Augustine Pirate \& Treasure Museum.

Captain Kidd (William Kidd, 1654-1701) began his career as a privateer and pirate hunter for the British before becoming a pirate. He was believed to have buried his treasure in a secret place and so, a crowd of 200,000 curious onlookers attended his execution, hoping to find out its location. The ship's log of Captain Kidd's final voyage in 1699 and the faded recording of Kidd's boarding can be seen in Cabin's Cabin in the St. Augustine Pirate \& Treasure Museum.

Black Bart (Bartholomew Roberts, 1682-1722) was known as the most successful pirate of all time. During his brief pirate career from 1719 to 1722, Black Bart captured 470 ships and their treasures. He also created the Articles of Piracy, a set of guidelines widely accepted by other pirate captains as rules for running a fair and successful pirate ship. Find Black Bart's Articles of Piracy at the entrance to Captain's Cabin in the St. Augustine Pirate \& Treasure Museum.

Thomas Tew (?-1695) was raised in Rhode Island and was one of the few American pirates. Tew began his career as a privateer, but took up piracy because it was more profitable. He successfully raided the Mogul of India's treasure ships in the Red Sea, capturing a treasure trove of gold, silver, spices, and ivory. During a return trip to the Red Sea, Tew was killed by a cannonball to the gut. The pistol, cutlass, and treasure chest that Tew actually used can all be found at the St. Augustine Pirate \& Treasure Museum. Tew's treasure chest in The Pirate Museum's Shipwreck Island exhibit is the only pirate treasure chest in the world; it can't be seen anywhere else!

Calico Jack (Jack Rackham, 1682-1720) was most famous for his colorful clothing. He was also famous for having two female pirates among his crew, Anne Bonny and Mary Read. In 1720, Calico Jack was hanged at Gallows Point, Jamaica, where his body was tarred and displayed on the docks as a warning to all pirates. Today, Calico Jack's flag has become famous as Jack Sparrow's flag in the Pirates of the Caribbean movie series.

Anne Bonny (1697-?) was a rare female pirate! Anne was a crew member onboard The William captained by Calico Jack Rackham. They were captured in 1720 off the coast of Jamaica, but Anne and Mary Read, another female pirate aboard, were given a stay of execution because they were both pregnant. Mary Read died in prison, but Anne Bonny disappeared into the pages of history.

Mary Read (1690-1721) was one of only two women (along with Anne Bonny) to be convicted of piracy in the 1700s. As a child, Read's mother dressed her as a boy after the death of Mary's older brother, and she lived much of her life as a man. During her second stint in the English Navy, Read's ship was captured by pirates. Seeing her fierce fighting spirit, Calico Jack asked the midshipman to join his crew. Calico Jack's crew, including Read, was captured by the English Navy and Read was sentenced to death. They spared her life because she was pregnant, but she died in prison from a fever related to child birth.

Andrew Ranson (1650-?) was born in England, but went to the West Indies and then the Spanish Main in his early 20s. He was also imprisoned in Havana, Cuba, for some time for smuggling before turning to privateering. Ranson was captured on September 30, 1684, near the mouth of the St. Johns River while planning a raid on St. Augustine. Sentenced to death by the garrote (see Glossary), Ranson escaped death when the rope snapped and monks claimed his sanctuary by act of God. He helped the Spanish complete the Castillo de San Marcos-the old fort directly across the street from the St. Augustine Pirate \& Treasure Museum-and thus earned his freedom. His descendants still reside in St. Augustine today.

Henry Every (1653-?) was known as the Arch Pirate because of all the wealth he plundered raiding Mogul treasure ships in the Red Sea during his only year as a pirate. After returning to New Providence (now Nassau) in the Bahamas, Every vanished. See the real wanted poster issued by the King of England in 1696, demanding Every's capture, on Execution Dock at the St. Augustine Pirate \& Treasure Museum. The $£ 500$ reward on this world's oldest wanted poster is still unclaimed and Every was never found!

Blackbeard (Edward Teach, 1680-1718) was born in Bristol, England. Blackbeard was considered the most notorious of all pirates and was hunted throughout his short-lived, 3-year pirate career. Just a few months after losing his flag ship, the 40-gun 'Queen Anne’s Revenge’, the British Royal Navy’s Lt. Robert Maynard tracked down and beheaded Blackbeard in 1718 off the coast of North Carolina. Experience the final moments of the notorious pirate Blackbeard as you board his ship in our Below Deck audio show, created by Disney Imagineers, if you dare!

## Now, it's time to be Pirates!

First: Divide the class into four- or five-person pirate crews. Make sure you have a diverse crew, so you can use all the strengths of each member.

Second: Each crew must elect a captain. No ship can be successful without strong leadership! Captain candidates can nominate themselves or be nominated by others. Once there is a nominee, the entire crew votes yea or nay. If the nominee has a majority, they are captain. The captain may then appoint a crew member as 'scribe.' The scribe will be responsible for writing necessary information.

Third: Have each crew name their pirate ship. Names are nominated and voted on just like the captain election was held.

Now that we have our crews, our ship's name and our captains, it's time to begin your pirate adventure! Pirate crews can complete the adventures as teams, just like the Brethren of the Coast!

## History

## In Class Crew Activity: Create a Wanted Poster

Each crew will create a wanted poster for one of the most notorious pirates, who menaced the high seas. Use this worksheet to gather information on the pirate and create your very own wanted poster for this scallywag! Choose ONE of our famous pirate captains from the Golden Age of Piracy and collect the important information below to create the poster.

## Circle the pirate captain of your choice below

$$
\text { Edward Teach } \quad \text { Thomas Tew } \quad \text { Bartholomew Roberts }
$$

Henry Every Jack Rackham

Once you choose your pirate, research him and answer the following questions.

- What is his name? $\qquad$
- What was his nickname(s)? $\qquad$
- What was his ship's name? $\qquad$
- How many cannons were aboard his ship? $\qquad$
- How many crew members did he command? $\qquad$
- Where was his pirating territory? $\qquad$
- What was the reward for his capture?
- What did the captain's flag look like? Circle the flag below of this pirate captain.


Now using the information you've gathered to create your own wanted poster! Use the following excerpts from the real Henry Every Proclamation on the next page as a guide.

# By the Lord Justices of England A Proclamation 



Here as we have received information from the Governor and Company of Merchants of London Trading to the East Indies, the one Henry Every, commander of the ship called the Phancy, of forty or so guns and onehundred thirty men, has under English colors, acted as a common pirate or robber upon the high seas and has performed under such colors to commit several acts of piracy upon the seas of India and Persia, which may occasion great damage to the merchants of England....
....Information in seizing the said Henry Every or the said ship, he or they making such discovery or seizure, shall have such reward of five hundred pounds, which said sum of five hundred pounds the Lord Commissioners of His Majesty's Treasury are duly required and directed to pay accordingly.

## God Save the King London, 1696

## History

## Follow Sir Francis Drake as he sails around the world

English privateer and pirate Francis Drake sailed around the world in his ship, the Golden Hind. Now you can follow the journey of the most famous seaman of the Elizabethan era! Plot each stop along the way of Drake's epic voyage on the map on the following page by placing each Location number in the matching box on the World Map provided. Then answer the questions below the map to learn even more about Drake's historic world voyage.

## December 13, 1577

Drake leaves London, England (Location \#1, Latitude $51.32^{\circ} \mathrm{N}$ ) after a face-to-face meeting with Queen Elizabeth. The queen secretly instructed Drake to find trade and travel routes around the world for the crown. Drake took the journey like a piratical endeavor and continued his plunder of Spanish held territories as well as ships.

## August 1578

Drake suppresses a mutiny attempt off the coast of Brazil, near present day Rio de Janeiro (Location \#2, Latitude $22.57^{\circ}$ S) and sets sail for the Straits of Magellan south of the Cape Horn (Location \#3, Latitude $52.20^{\circ}$ S), around the southern tip of South America. It takes Drake 16 days to sail through the straits and reach the Pacific Ocean.

## February 1579

Drake seizes provisions and treasure at Valparaiso (Location \#4, Latitude 33.30${ }^{\circ}$ S). The Spanish were completely surprised by Drake on the west coast of South America, never having encountered hostile ships in the Pacific before and so it was easy plunder for the likes of Drake, who pillaged the treasure ship Nuestra Señora de la Concepción of its silver and gold before it could reach the safety of Panama.

## July 1579

Drake sails as far north as the $48^{\text {th }}$ parallel near present day Vancouver (Location \#5, Latitude $49.15^{\circ} \mathrm{N}$ ) seeking a northern passage back to the Atlantic. Finding no success amid the bitter cold and unable to turn back because of the Spanish awaiting his return, Drake decides to take a chance and set sail across the treacherous Pacific Ocean.

## October 1579

Drake sails across the dangerous Pacific Ocean in 68 days despite violent weather and waves, dehydration, and threatening bouts of scurvy. He arrives at the Palau Islands (Location \#6, Latitude 07.30 ${ }^{\circ} \mathrm{N}$ ).

## November 1579

Drake replenishes his supplies and sets sail for the Malucos Islands (Location \#7, Latitude 01.34 ${ }^{\boldsymbol{o}}$ $\boldsymbol{N}$ ), where he is well received by a sultan and trades for rare spices.

January 1580
Drake calls on Java (Location \#8, Latitude 06.08 $\boldsymbol{S}$ ) before beginning his voyage across the Indian Ocean to the Cape of Good Hope (Location \#9, Latitude 34.21 S) on the southern tip of the African continent. Two years after sailing through the Straits of Magellan, Drake's flagship re-enters the Atlantic Ocean.

## September 26, 1580

Drake sails into harbor in Portsmouth, England (Location \#10, Latitude 50.49 $\mathbf{N}$ ) with only 56 of his original 100 crewmen. The ship is laden with Spanish gold and silver taken from the Spanish along the west coast of South America, spices from trading in the Malucos Islands, and other exotic goods.

See a lifelike recreation of Francis Drake—armed to the teeth!— and explore this fearless pirate's life as you flip through the interactive touchscreen 'Book of Pirates' in Rogue's Tavern at the St. Augustine Pirate \& Treasure Museum.

## In Class Activity: Plot Drake's Journey around the World

Plot the different locations of Francis Drake as he circles the globe. Place the number of the location inside the box placed near each of the latitudes. And answer the questions below the map to learn more about the historic voyage of Francis Drake!


## Drake's Journey Questions:

1. How long did Drake's journey last in years, months, and days if it began on December 13, 1577, and ended September 26, 1580? $\qquad$
2. How many men were lost on the voyage?
3. What was the northernmost latitude reached during the journey? $\qquad$
4. What was the southernmost latitude reached during the journey? $\qquad$
5. What's the distinction between north and south latitudes? Where do they meet? $\qquad$
6. What is the name of the Spanish treasure ship Drake attacked off the coast of South America? $\qquad$

## Bonus Question!

If the voyage was 43,200 miles, what was the average speed (in miles per hour) of the trip? $\qquad$


## History

## What causes someone to become a pirate?

There were several ways a person could be influenced to become a pirate, some by choice, some not. A few of the methods are explained below.

Privateering: England did not have a strong navy for most of the Colonial period. Instead, England relied on its private merchant fleet to boost the country's naval power. These private navy individuals, when called into service, were called privateers. The Spanish had a powerful Navy during the same period, and their presence was most evident in the Caribbean, Mexico, and Central and South American regions of the New World. England (and France) employed privateers to help set up colonies in the Caribbean and lay claim to Spanish wealth and landholdings in the region. When conflicts between these colonial powers ended, thousands of privateers continued their plundering ways as pirates.

Navy Press Gang: Not only did England call their merchant fleets into action, they forced many unwilling men into naval service. The Navy Press Gangs were rampant along the coasts of England, and by order of the King they were allowed to drag men from their homes into military service-no questions asked. It was not uncommon for the Royal Navy to chain these men to their ships so that they would not attempt escape. Many freed crew members welcomed the democracy on a pirate ship and joined willingly.

Navigation Acts: Many pirates joined the profession voluntarily during the growth of the American colonies. These new colonies created great opportunity for financial gain for a self-employed pirate. To keep control of the colonies and their natural resources, England passed the Navigation Acts of the 1600s. The theory behind the acts was simple: England thought the colonies existed only for the benefit of the mother country, so only the British were allowed to transport goods into and out of the colonies. Goods coming out of the colonies could also only be traded at British ports. This turned into a great opportunity for pirates and colonists. Pirates enjoyed an open market in the colonies to sell their stolen goods, and the colonists enjoyed buying pirate goods below British prices.

These actions created the atmosphere that caused the explosion of pirate activity throughout the Golden Age.


## Geography

## Pirate Havens, Strongholds, and Hotspots

## What is a pirate haven?

A pirate haven was an inconspicuous place, such as a small town or island near busy shipping lanes, where pirates could hide out, spend their loot, careen their ships, and replenish their supplies. These locations were usually ridden with taverns, brothels, gambling halls, and shops that were willing to buy and trade goods with the pirate community. The most famous example of a pirate haven is Port Royal, Jamaica, which was once the second largest English-speaking city in the New World. Walk the cobblestoned streets of Port Royal and peer into shop windows of 300-year-old artifacts recovered from what was once the Wickedest City in the World at the St. Augustine Pirate \& Treasure Museum.

Place these pirate havens and key ports in the right locations on the world maps on the following page:

| 1. The Florida Keys (FL) | 7. Barataria Bay (LA) | 13. Tortuga |
| :--- | :--- | :--- |
| 2. Gardiners Island (NY) | 8. Ocracoke Island (NC) | 14. Isthmus of Darien |
| 3. St. Augustine (FL) | 9. Panama | 15. Havana, Cuba |
| 4. Execution Dock, England | 10. Port Royal, Jamaica | 16. Île Sainte-Marie, <br> Madagascar |
| 5. Amelia Island (FL) | 11. Potosi (Peru) |  |
| 6. Gallows Point, Jamaica | 12. Rhode Island |  |

[Fill in the boxes on the following page with the numbers of Havens and Hotspots above]

## Pirate Havens, Strongholds, and Hotspots



## Geography: Spanish Silver Trail



New trading routes and precious metals lured European powers to the New World. New World silver and gold also drew the attention of those who wanted to take the treasure from them-pirates!

The Spanish controlled the majority of the New World, particularly what is now Central and South America, known then as the Spanish Main, which was the main source of precious metals in the New World. The majority of the precious metals were silver, but to get the silver from raw mined ore back to Spain was a long and treacherous process.

## From the Start!

The largest silver mine in the world was located in the city of Potosi, Peru (est. 1546), where silver ore was mined by the Spanish. Before then, the Spanish looted precious metals from native peoples of the New World. But when the mint at Potosi was established in 1672, silver became the choice precious metal of the invaders from Europe.

## On the move...

Once coins were produced at Potosi, they were transported to the shipping port of Lima on the Pacific Ocean. With their wide hooves and stubby legs, llamas were the natural choice to move the coins over Peru's mountainous terrain

From Lima, a port city founded in 1535 by Spanish conquistador Francisco Pizzaro, the coins were shipped up the coast to the Pacific port of Panama


Llama Pack Train by the treasure galleons of the South Seas Fleet of the Spanish Navy. With little French, English or Dutch presence in the Pacific, these shipments were rarely harassed by thieves.


Spanish attack on Inca escort under Francisco Pizarro

## Warning: Privateers in These Waters!

While circling the globe in 1579, Francis Drake attacked the Spanish city of Valparaiso in South America for extra supplies. While there, he heard of a Spanish treasure ship, the Nuestra Señora de la Concepción, which had recently left for Panama along the Spanish Silver Trail. Drake immediately set sail to track down the Spanish galleon. He attacked the Spanish ship and relieved her of her treasure. It was quite a shock to the Spanish, who had never encountered a hostile ship in the Pacific Ocean. And


Francis Drake it marked a new era in the Silver Spanish Trail: A new danger had emerged.

From Panama, the coins were taken over land to Porto Bello on the Caribbean side of the Isthmus of Darien. The Isthmus was a narrow strip of land, but it had some of the most unforgiving jungle terrain in the New World. Such heavy loads were trusted to the powerful mules of the Silver Mule Train along the Las Cruses Trail.

## Warning: Privateers on These Lands!



Sir Henry Morgan

Along the Spanish Silver Trail, the Silver Mule Train marked one of the most vulnerable spots for attack by rival forces. Privateers successfully raided the Silver Mule Train on a few occasions, the most well-known of which was by Francis Drake in 1573 and Henry Morgan in 1668. Morgan took over Porto Bello and ransomed the city for treasures delivered by the mule train.

From Porto Bello, the treasure was shipped to Cartagena. Spanish treasure galleons were used to ship silver coins across the southern Caribbean Sea and would arrive at designated times to meet the mule train arrival.

From Cartagena, the silver was shipped to Havana, Cuba. The Treasure Fleet would gather in Havana, Cuba, in anticipation of the semi-annual trips back to the Spanish Port of Seville. These fleets would be the largest fleets of the era, sometimes numbering more than 50 ships!

## To the Finish!



The final leg of the Spanish Treasure Fleets, known as the Flota de Indias, sailed from Havana, Cuba, back to Seville, Spain, aboard Spanish Treasure galleons. It was a treacherous journey that took the fleet through the Straits of Florida, up the east coast of the Spanish territory, past the last Spanish stronghold, St. Augustine, and across the Atlantic Ocean. The ships faced hurricanes, pirates, and dangerous ocean currents along this final stage of their journey.

Geography

## In Class Activity: Track the Spanish Silver Trail from Start to Finishplay the game

You will need:

- printed game board (2 pages - cut out and taped together)
- 1 die
- Game pieces can be: pieces from other games, small objects (i.e. ring, eraser, etc) or print and cut out these pieces.


Rules of the Game!

1. Number of players 2 or more.
2. Each player rolls one die. The highest number goes first.
3. All players begin in Potosi
4. Roll die and move number of spaces shown. If you land on an 'action square' read aloud and follow directions. Once you round the peninsula of Florida, you must roll on the die the exact number of squares left in order to win, if you roll over the number, the turn is lost.
Winner is the first to arrive successfully in Seville, Spain!



## Sociology: Pirate Treasure

## Spanish Coins of the New World

One of the main reasons the Spanish came to the New World was to exploit its natural resources, especially raw deposits of silver and gold. The massive deposits allowed the Spanish to make huge amounts of coin treasure in their New World mints. When the Spanish tried to ship these incredible treasures back to Spain, their ships were very valuable targets for privateers and then pirates. Before the mechanical screw press was first used in 1732 to make identical copies of new world coins, coins were hand struck. These coins were called 'cob' coins.

The reason you will see many strangely shaped coins is that it was impossible to make each one exactly the same when making them by hand. No two cob coins look alike, but each has key identifying marks.


These coins can be identified by marks and symbols on both sides, and each symbol has special significance. The mint mark above shows where the coin was made; denomination shows its value; and the assayer was the maker of the coin. The Hapsburg Shield (or Spanish Coat of Arms), the Castle of Castile, and Lion of Leon were all important unique symbols for Spanish coin makers.

Spanish coins gained acceptance all over the world as a useable currency. But the U.S. Coinage Act of 1874 meant that certain Spanish coins known as Reales were no longer accepted as currency in the United States. Instead, the U.S. government replaced the Spanish coin with the U.S. Silver Dollar. The value of the U.S. Silver Dollar (pictured below left) was based on the value of Eight Reales or Piece of Eight (pictured below right), which was accepted around the world.


1874 U.S. Silver Dollar


1619 Spanish Piece of Eight

The images and symbols on the Spanish piece of eight were very important to the Spanish. Study the images of the Spanish coin above. What do you see? What do you think the Castle of Castile and Lion of Leon are? You may need to do some research.

Compare the Spanish coin to the U.S. Silver Dollar. How is it different? How is it the same? What kinds of information and symbols are on each? What do the symbols mean? Why do you think these symbols were chosen?


## In Class Crew Activity: Create Your Class Coin

Think about your classroom or your school. What symbols would you use to represent it? You may use the symbols below or create your own to design your coin in the spaces below. Its value should be one U.S. Dollar. Be sure to give your coin a name or a nickname!


Have each of your pirate crews bring or send in their coin drawings to the St. Augustine Pirate Treasure Museum. Our expert staff will choose the best of your crew's coins to represent your class. You may choose to use a separate sheet of paper. Let's see your best!
Hint: This is a new coin, so don't forget to include the current year, school, city and state.


Peace


Freedom


Education


Agriculture


Justice


Happiness


Science


Exploration


Conservation


Love

Visit Shipwreck Island at the St. Augustine Pirate \& Treasure Museum to see more than 250 real 17th century Spanish coins from Port Royal, Jamaica; Spanish pieces of eight from the shipwreck of the Santa Maria de la Consolación; gold coins from the Florida Division of Historical Resources; and gold doubloons minted in Lima, Peru hundreds of years ago!

## The Pirate Code: A story of... Democracy?

Yes! Life on a pirate ship was not all fun and games, chaos and mutinies. Most men who became pirates left a life of social injustice and tyranny, and therefore liked the order and justice. The ARTICLES OF PIRACY listed below, outlining the rights and responsibilities of each man aboard, were taken from Black Bart's Code of Conduct and sworn to by crew members over a Bible. During the Golden Age of Piracy, pirate ships were far more democratic than merchant ships. In fact, they were the first form of democracy in the Western Hemisphere. The idea of one-man, one-vote and economic and social class mobility sent a chill up the spine of the monarchies of the Old World.

## Black Bart's Code of Conduct

I. Every man shall have an equal vote in the affairs of moment. He shall have an equal title to the fresh provisions or strong liquors at any time seized.
II. Every man shall be called fairly in turn by the list on board of prizes, but if they defraud the company to the value of even one dollar, they shall be marooned. If any man rob another, he shall have his nose and ears slit, and be put ashore where he shall be sure to encounter hardships.
III. None shall game for money either with dice or cards.
IV. The lights and candles shall be put out at eight at night, and if any of the crew desire drink after that hour they shall sit upon the deck without lights.
V. Each man shall keep his piece, cutlass and pistols at all times clean and ready for action
VI. No boy or woman to be allowed amongst them. If any man shall be found seducing any of the latter sex and carrying her to sea in disguise he shall suffer death.
VII. He that shall desert the ship or his quarters in time of battle shall be punished by death or marooning.
VIII. None shall strike another on board the ship, but every man's quarrel shall be ended on shore by sword or pistol.
IX. No man shall talk of breaking up their way of living till each has a share of $£ 1,000$. Every man who shall become a cripple or lose a limb in the service shall have 800 pieces of eight from the common stock and for lesser hurts proportionately.
X. The captain and the quartermaster shall each receive two shares of the prize, the master gunner and boatswain, one and one half shares, all other officers one and one quarter, and private gentlemen of fortunate one share each.
XI. The musicians shall have rest on the Sabbath Day.

## Sociology

## In Class-Crew Activity: Create your own Articles of Piracy

This is a pirate crew activity. Divide into your pirate crews to create your crew's Articles of Piracy! When you design rules for your pirate crew, keep in mind that the original Articles of Piracy were created to make pirate ships more successful, so remember to write rules that will make your pirate crew more successful in class, outside your class, and within your family. Previous articles were made to bring order to the ship; maybe you could have articles to create good habits in the classroom and at home.

Remember: Each Article must be nominated by a crew member and voted on by all the members of the crew. A majority votes for an article means it is approved. Create at least five articles for your crew to live by.

Articles of Piracy

1. $\qquad$
$\qquad$
2. $\qquad$
$\qquad$
3. $\qquad$
4. $\qquad$
5. $\qquad$

Now that you have your articles, have each member of the crew sign below, to make sure they know what is expected of them as a crew member.
$\qquad$
$\qquad$
$\qquad$

You can see Black Bart's Code of Conduct (his ship's articles of piracy) just outside Captain's Cabin on the Main Deck at the St. Augustine Pirate \& Treasure Museum.

## Sociology: Pirates Dress for Success

With little room aboard ship, proper clothing is your first priority. Most sailors and pirates had to be practical with their clothing. Layers worked well: better to have it and not need it than to not have it at all. Function is far more important than fashion; if it's comfortable and serves its purpose, then let it. Clothing should never be too loose as it could get in the way during battle or get caught in lines or nets. At minimum, a pirate would need a sturdy pair of canvas pants, a loose fitting cotton top, preferably with long sleeves for protection against the sun, an overcoat that is wind- and water-resistant and appropriate undergarments, of course. Other items of clothing and accessories might include: shoes, hats, bandanas, sashes, belts, weapons, and jewelry.

Footwear was often considered optional. Many sailors and pirates found shoes were too slippery on the deck of a ship and chose to go without.

The tricorn hat, originally known as a 'cocked' hat, is a wide-brimmed hat with three sides tacked up. Soldiers began tacking the sides up for clearance when marching with muskets. The hat quickly caught on in the world of fashion and pirates
 picked up the trend. Other pirate headwear included the monmouth cap and the ever popular and useful bandana. Long hair could become a hazard if not kept back; bandanas worked well for this purpose and were also good for cooling off an over-heated pirate when soaked in water.

A scarf or sash had a wide variety of uses. They were used to conceal small pistols and daggers or their holders and very useful in defense, especially against attack with a dagger. Other uses included as a sling, bandage or tourniquet. They could also be ripped into wadding for muskets or pistol shots, or as a weapon for choking or to confine arms, hand or feet. Very practical and fashionable!

Belts were used for obvious reasons, but also for holding weapons. Pirates often carried a sword or cutlass, and dagger or some sort of knife, along with several firearms. A pirate's knife or dagger, when not being used on an enemy, is handy for daily tasks aboard ship. The flintlock pistols of pirate days only fired one shot at a time. At best, it would take 20 to 25 seconds to reload these pistols, so pirates often carried 5 or 6 pistols primed, loaded and ready.

Jewelry was worn as a sign of wealth and success. A favorite piece among pirates was oversized golden hoop earrings. These earrings were not merely for show. They caused pressure to the ear lobes, especially the heavier earrings, and helped eliminate seasickness. Gold earrings can also come in handy if you die penniless. You can always bribe your way into Fiddler's Green (sailor's paradise) with your last bit of jewelry.

## In Class Activity: Tie a Bandana like a Pirate

The bandana is a very useful piece of pirate clothing. It works well to keep long hair back, but can also be used to cool off an over-heated pirate when soaked in water or used as a bandage or tourniquet. It can also be ripped into pieces for wadding in muskets and pistols. Every pirate needs a bandana and every pirate needs to know how to tie one!

First you'll need a bandana: a square of fabric about 24 inches or larger. Lay it out flat.

Fold your bandana in half making a triangle.

Next, position the longest edge against your forehead at the height of your choosing.


Pull side corners toward the back of your head and tie a single knot on top of the middle point.


The bandana should be firmly tied, but not uncomfortable. Adjust tightness by pulling on the bottom corner flap and tightening knot in back.

## Art: The Pirate Stronghold

## The Most Famous Pirate Stronghold: Port Royal, Jamaica

The city of Port Royal, Jamaica, was founded by the Spanish in 1518 and captured by the English in 1655. Located on a peninsula on the south end of Kingston Harbor, its naturally protected deep water harbor and proximity to major shipping lanes in the Caribbean made it a natural hub for shipping and trade.

English Governor Edward D'Oyley (governor 1655-56, 1657-61) lured privateer captains away from Tortuga by offering privateering commissions, which legally permitted them to raid Spanish ships and lands throughout the Caribbean. This made the city of Port Royal the major pirate city in the New World.

Port Royal reached its peak of pirate activity under Sir Thomas Modyford. Modyford (governor from 1664-1669) ignored the orders of England to suppress the 'Brethren of the Coast's' activities and continued to encourage the raiding of Spanish treasure throughout the region, to his own personal benefit.

## The Sodom of the New World

Port Royal was one of the most populated English-speaking cities in the western hemisphere (second only to Boston, Massachusetts) with a bustling trade industry fortified by the actions of privateers based in the city. It was known as the 'richest and wickedest city in the world' and had one of the highest per capita net worth on the planet. It was also called the 'Sodom of the New World', referring to the indulgent city of biblical history. On June 7, 1692, it all came to an abrupt end.

A massive earthquake and tsunami struck the entire peninsula, submerging over 60 percent of the land mass under the sea and ending the lives of 2,000 inhabitants almost immediately. The devastation continued as poor conditions after the natural disaster resulted in 1,000 more residents dying of disease.

Walk the cobblestone streets of Port Royal at the St. Augustine Pirate \& Treasure Museum and peer into shop windows at artifacts recovered from the Wickedest City in the World after the earthquake that destroyed it hundreds of years ago.

## In Class Activity: Draw a day in the life of Port Royal (Art)

Grab a blank sheet of paper and draw your own version of the privateer stronghold of Port Royal on an average day. The city had busy streets with many shops and stores, a protected harbor which could hold over 500 ships, and two military forts.

Remember, pirates were welcomed in Port Royal. After all, they were the main reason the town was so successful! Bring or send your drawings of 'Life in Port Royal' to the St. Augustine Pirate \& Treasure Museum.


> This is an artist's rendition of Port Royal, Jamaica in 1692 just prior to the devastating earthquake. Your job is to draw a day in the life of its citizens. It can be city streets, military forts, view of the harbor, a view from a boat in the harbor, or even from above, it's up to you!

## Pirate Life: Not Always on the High Seas

Pirates often had to use their cunning and intelligence to adapt to the waterways they navigated. Sometimes, a situation would arise where pirates would have to create devices for use in difficult situations.

Whether to escape being stranded on a deserted island or traveling inland waterways through dense jungle, such as the Isthmus of Darien (known today as the Isthmus of Panama), a log raft provided a life-saving means of transportation. Some of these jungles were incredibly thick and difficult to walk through, littered with swamps, lakes and rivers. An easier and quicker form of transportation was a log raft.

## Building a Log Raft

The steps to building a log raft were somewhat simple, but very important.

1. Gather (or cut) ten reasonably straight logs of about the same length (ten to twelve feet) and girth.
2. Add four shorter logs (five to seven feet long) to the supply pile.
3. Position two of the shorter logs on the ground approximately a foot shorter than the raft's intended overall length. For example, if you are using 10 -foot logs, lay the shorter ends nine feet apart. Deck (long) logs will be perpendicular to these.
4. Carve curves off the two shorter logs, making tops flat, so longer 'deck logs' will rest squarely atop them.
5. Put all deck (long) logs in place, stretching from one of the shorter notched end logs to the other. You want a tight fit, with little or no movement between.
6. Carve curves off the two remaining shorter logs and lay them carved side down, on the ends, above the other two smaller logs, effectively creating a log sandwich.
7. Secure your construction with rope. Lash a rope around each end, tying off at various points on the raft. If you don't have rope, vines will work. If you have enough rope or vine for four ties (one per side), go for it.
8. Carry or roll (atop logs) your raft to water, climb on, cross your fingers that it holds and float away.

## Art

## In Class Activity: Build your own Log Raft

## Materials needed:

15 Popsicle sticks
Glue
Paper towels

Position 11 popsicle sticks side by side and make sure the ends of the sticks line up with each other. Place four beads of glue across the lined up sticks. One bead is placed just short of each end of the sticks, two more beads across the middle of the sticks.

Place the four remaining popsicle sticks on the beads of glue. Press firmly on the cross sticks, wipe the excess glue off with a paper towel, and allow to dry overnight. This is the raft from the bottom view.


Extra credit: You may use another popsicle stick and construction paper to build a sail for your raft to help cover long distances.



## Art History

## What is the Jolly Roger?

The traditional pirate flag is most commonly referred to as the Jolly Roger. The name probably comes from the French phrase jolie rouge, meaning pretty red. Before the skull and crossbones was used, pirate flags were most often red. The skull over the crossed bones may have been taken from the symbol of death on gravestones; it struck fear into all who laid eyes upon it. One of only three original Jolly Roger flags in the world that actually flapped in violent sea air in the 1850s can be seen in Captain's Cabin at the St. Augustine Pirate \& Treasure Museum.

## Art

## In Classroom - Create Your Own Pirate Flag

Divide the class back into their pirate crews. Have each crew create your own pirate flag. The flag should represent the crew and what you feel is important. Below are examples of two pirate flags used by actual pirates.


Black Bart


Thomas Tew

The flag on the left was used by Bartholomew Roberts, better known as Black Bart. The flag shows Roberts toasting with an armed skeleton which represented death, proposing a toast to the devil. The flag was used to evoke fear in Black Bart's prey. It indicated that the captain and crew embraced death as a way of life and were ready to fight to the death if the need arose.

The flag on the right was the calling card of Thomas Tew, an American pirate from Rhode Island. His flag was also designed to create fear in the hearts of his prey. The large muscular arm represented the power of this pirate, while the sword showed that he and his crew were prepared to fight.

## Social Studies: Art

## In Class Activity: Create Your Own Pirate Flag

Materials Needed:
Black Construction Paper
White Construction Paper

Now it's your turn. Using black and white construction paper, create your own pirate flag. Remember, the flag should represent what you think would be useful for your purpose as pirates, and what represents your school best.


Bring, or send, each crew's flag creations with you to the St. Augustine Pirate \& Treasure Museum. The best will be entered as your school's official pirate flag at the museum!

## Language Arts: Weather Journal

## Pirates Knew What Ill Winds Blew!

People have always had an interest in the weather. Whether for agriculture, climate shift (migrations) or sea faring, the ability to observe and predict the weather has been a primary need for human beings.

Pirates of the Golden Age were no different. Knowing weather patterns along shipping and trade routes was very important. Since a large portion of pirate activity took place in the Caribbean Sea, which is notorious for rough weather, knowledge of weather patterns had added importance.


The most time tested method of predicting the weather is to pay attention to past weather patterns. And the best way to study past weather patterns is to observe and document the weather on a daily basis. Weather journals are a written record of stories and information for others to study, and can be used to predict and prepare for the weather.


Today weather still plays a major role in maritime adventure. This picture shows some of bad weather which delayed $S t$. Augustine Pirate \& Treasure Museum founder Pat Croce's exploration of Francis Drake's scuttled ships in Portobello Bay Panama, October 2011.

## Language Arts

## In Class Activity: Weather Observation Journal

Use your pirate crews to create a weather observation journal for the next month. The idea is to observe your surroundings, listen for stories or sayings regarding the weather, compare observations with other classmates' impressions of weather conditions, and look for patterns and connections between various weather phenomena.

Materials Needed:

- Student Worksheet: Weather Observation Journal
- Student Worksheet: Analyzing Weather Observations
- Stapler/Staples
- Scissors


## Time to Take the Weather to Task!

1. Each crew should be provided a pair of scissors and a Weather Observation Journal with enough copies of the second page of the worksheet to create entries for each day of the month.

Teachers: Please instruct your crews on how to fold and cut the worksheet to create the journal.

Staple your pages together and write the crew members' names on the front of the journal. Journal entries should be documented by the scribe of each crew.
2. Read the Rules of Weather Observation as a class. This should be the second page of your weather observation journal.
3. Every day, crews should note their weather observations at the same time each day and have it written by the scribe. At week's end, crews should share among the other crews and look for connections between weather phenomena, such as 'cooler temperatures when the wind blows from the south,' and patterns, such as 'it was hot three days, and then cooled off for three days.'
4. After each week's discussion, crew scribes should take a few minutes to complete the journal entries for the week, including the 'observations of others'.
5. After writing their last daily journal entry, hand out the Student Worksheet: Analyzing

Weather Observations. Pirate crews will then discuss the entries for each day and fill out the basic information required by this form.
6. Each crew should complete the questions at the bottom of the Student Worksheet. Once completed, these answers should be read to the class by each crew scribe and discussed among the entire class. You will see how similar observations can be if you just pay attention to the weather.

## Weather Observation Journal

## Crew Names:

$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Page 1

Wind: $\qquad$
$\qquad$

Sky: $\qquad$ Rain/Snow/Fog:____
$\qquad$

Observations of Others:
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Observations

Date: $\qquad$
Wind: $\qquad$
temperature, hot, cold or mild, whatever your body is feeling.
Always talk to other people about the weather as well. Get their opinion on your
surroundings, they may notice something you missed.
Notice any changes in weather and wind conditions.
Keep a watch for any changes in the sky. Coming weather changes can usually be spotted off in the distance by a changing sky. For the following day's weather, it's good to notice the weather in the evening. The changes throughout the day are a good predictor for what may be here tomorrow.

Page 2

Date: $\qquad$

| Date: | Date: |
| :---: | :---: |
| Wind: | Wind: |
| Sky: | Sky: |
| Rain/Snow/Fog: | Rain/Snow/Fog: |
| Observations of Others: | Observations of Others: |
| Observations | Observations |
| Date: | Date: |
| Wind: | Wind: |
| Sky: | Sky: |
| Rain/Snow/Fog: | Rain/Snow/Fog: |
| Observations of Others: | Observations of Others: |
| Observations | Observations |

## Name:

$\qquad$

## Analyzing Weather Observations

## Student Worksheet

Use the Weather Observation Journal to fill in the calendar below. For each day, list the wind direction, the strength of the wind (no wind, a little windy, very windy, etc.), the sky conditions (rain, snow, clear, cloudy), and the relative temperature (colder, warmer, very cold, etc.).

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. Which weather events occurred together the most times?
$\qquad$
$\qquad$
2. Which weather events were connected (when one happened, the other almost always happened)?

## Language Arts

## In Class Crew Activity: Fun with Pirate Words \& Phrases

The words and phrases used by pirates were common knowledge during the Golden Age of Piracy and many have survived to present day. Check out these words and phrases below. Notice how many are still in our daily vocabulary today?

Hardtack - Tough dry biscuits that made up the main part of a sailor's diet.
Gibbet - A wooden frame used for displaying the dead bodies of criminals as a warning to others.

Doubloon - A Spanish coin made of gold, worth 2 pieces of eight, or 16 reales.
Broadside - The simultaneous firing of all cannons on one side of the ship.
Bowsprit - A long spar that projects out from the front of the ship.
Cutlass - A short sword with a broad blade, first used by buccaneers; also a popular weapon for battles at sea because it did not get caught in the rigging.

Galley - A large ship powered by oars, which were usually operated by galley slaves; also a term for the ship's kitchen.

League - Three miles at sea.
Maroon - A common pirate punishment, where the guilty party was deserted on a remote island.

Vaporing - The pirate ritual of screaming war cries and banging weapons against the ship's gunwales to scare their prey prior to attacking.

Starboard - The right side of a vessel facing forward.
Quarterdeck - The deck above the main deck located at the stern of the ship where the captain and officers controlled the ship.

Midshipman - A non-commissioned rank below lieutenant in the Navy.

Letter of Marque - A license or certificate issued by a monarch, or government authorizing the bearer to attack and plunder enemy ships.

Keelhauled - A punishment where the offender is dragged by a rope from one side of the ship through the water under the keel to the other side.

Jolly Roger - The common term for a black pirate flag with a skull and bones.
Frigate - A fast warship, usually armed with between 20 and 30 guns.
Wadding - A small piece of cloth placed in the barrel of a pistol or cannon after the powder.

Quartermaster - The officer who represented the crew in all issues aboard ship, he was in charge of food and supplies, division of the booty, and distributing punishment to the guilty.

Scurvy - A disease with symptoms including bleeding gums and sores, caused by lack of vitamin $C$, which is found in fruits and vegetables.


## In Class Activity: Language Arts

## Word Scramble

Now that we've learned some real pirate language, see if you can unscramble the words below to match the pirate terms and phrases on the previous pages.

LEDHEEALKU
$\qquad$
VYCUSR
$\qquad$
ONLOBUDO
PGONIVAR

BIGTEB
LEGYAL

EEQERUFLTOTRAM
$\qquad$
SATSCUL

TARTQERURESAM

BROTADARS
$\qquad$

KATHCARD
$\qquad$
GOLERRYOJL
$\qquad$
GRATEIF
$\qquad$
ANPIMMDISH
$\qquad$
NOMARO
$\qquad$
POWTRISB
$\qquad$
DIREAODBS
$\qquad$
GLUAEE
$\qquad$
UDKTEERCQAR
$\qquad$
DINGAWG

## Language Arts

## In Class Crew Activity: Spelling Bee

As we have learned, pirate crews were completely democratic. All activities and decisions were discussed amongst the crew and then voted on, and the majority ruled. So it will be with our spelling bee.

Again, divide into crews. If there is an even number of crewmembers, the captain is the tie-breaking vote. Each word presented to each crew for correct spelling is discussed and voted on by the crew. The captain presents the crew's decision to the teacher.

The winning crew can post their flag inside the classroom for the entire week to show the cunning and intelligence of their pirate crew and its fearless leader, the captain!

Use the vocabulary words from the previous section for this contest.


## Know Your Pirates

How well do you know the world's most famous (or should that be infamous) pirates?


Across

1. She sailed with Calico Jack (2 words)
2. Known as the "Gentleman Pirate" ( 2 words)
3. Sailed as part of Blackbeard's crew (2 words)
4. She served as a cabin boy in the Royal Navy (2 words)
5. Most famous buccaneer ( 2 words)
6. Rope broke at his hanging - had to be hung again (last name)
7. Got his nickname from the colorful clothes he wore (2 words)
8. Burned down the last wooden fort in St Augustine ( 2 words)

Down
2. He took a cannonball in the stomach (2 words)
3. Most successful privateer in history (3 words)
7. Most notorious pirate to ever sail on the high seas
8. Captured 400 ships in less than 4 years ( 2 words)
10. Sailed on a ship called the Fancy (2 words)
12. Blackbeard's real name ( 2 words)
13. Voted out as captain of his ship by his crew and replaced by Calico Jack (2 words)

## Language Arts

## Classroom Activity: Blackbeard's Treasure

## Read the story below and answer the questions that follow.

Avast thar ye land-lubbers. I has a story to tell ye of me friend. Aye, Thomas be a bilge rat, but he be a fine pirate. Let me tell ye how Thomas got his last name.

Thomas and I were in a tavern many years ago, drinking rum and eating bowls of salmagundi when we overheard a sailor talking to the tavern keeper about the treasure of Captain Blackbeard.
(Salmagundi is a stew made of anchovies, turtle, chicken, pigeon, pickled eggs, pickled onions, and other fine ingredients, by the way.)
"Arr! I will take his treasure without firing a shot," the drunken sailor bragged.
"The good Captain ain't no fool," the keeper said. "He will send ye to Davy Jone's Locker for tryin' to steal his treasure."
"The Captain be trying to escape the British Navy," the sailor replied. "Lieutenant Maynard be chasing him. Blackbeard will never know I has some of his treasure."

Thomas turned to me and whispered, "Ye hear that, laddie?"
"Who be Blackbeard?" I asked. Thomas's eyes became as big as eggs.
"Shiver me timbers! Ye don't know who Blackbeard is? He is the most feared pirate from the Caribbean to the Carolinas," Thomas explained. "His real name is Edward Teach. He was an English privateer in Queen's Anne War. He became a pirate when the war ended."

Thomas picked up his knife and scraped at the scabby wart on the end of his nose.
"A plan be brewing in me brain," he said. "I says we slip on board that ship and take some treasure for ourselves!"

It was evening time when the sailor left the tavern, and we followed. There was an eerie fog covering the bay. The sailor rowed toward a big ship and Thomas and I borrowed a boat and kept behind him. As he approached the ship, we rowed up silently beside him. Thomas knocked him unconscious with the butt of his flintlock pistol.

Thomas then grabbed the rope dangling over the side of the ship and pushed a rusty ax through his belt. He placed his finger over his lips.
"Quietly now. If they see us, we be shark bait for sure."
Hand over hand, we slowly made our way up the side. We nearly panicked when we saw a pirate guarding the ship's deck, but the scallywag was asleep. Thomas and I breathed a silent sigh of relief. We crept across the deck, the ship's boards squeaking underneath. I thought we were goners!

When we reached the hatch to the cargo hold, Thomas gave a grin through yellow teeth. He pointed at the wooden cover. Below somewhere was Blackbeard's treasure.

The hatch squeaked an eerie whine as Thomas slowly pulled it open. We froze as the sleeping guard yawned and mumbled in his sleep then quickly descended the stairs. It was dark. We heard the scurrying of rats in the corners. As I felt my way, I bumped into something and a chicken clucked and feathers flew.
"Shhhh!" Thomas rasped.
Our eyes adjusted to the dim light and we could see outlines in the night. The room was filled with crates and barrels.
"It be down here somewhere. I be sure of it," Thomas said.
He raised his ax to smash a barrel then froze suddenly. He turned to me with a look of fear on his weathered face.
"Do ye hear that, laddie?" Thomas asks.
I turned my ear toward deck. I didn't hear anything.
"Something's comin, something big" Thomas whispered. "Another ship be approachin' . . ."


Visit 'Below Deck' inside the St. Augustine Pirate \& Treasure Museum to hear the spine tingling conclusion of this story!

## Language Arts

## Individual Crew Member Activity

Answer the following questions:

1. These pirates were English, but spoke differently than we do today. Think about this sentence:
"The Captain be trying to escape the British Navy," the sailor said. "Lieutenant Maynard be chasing him. Blackbeard will never know I has his treasure."

Rewrite this sentence so you can understand it better.
2. Just as slang and catch phrases have entered the language today, pirates used their own catch phrases and slang to communicate. Read the sentence below and think about what it means.
> "If they see us, we be shark bait for sure."

Now write down what you think this means.
3. The above story is unfinished, write down what you think will happen next.


## Science: Anatomy of a Cannon



Cannons were a weapon of choice among pirates. After all, most ships that might fall prey to pirates were usually well fortified with cannons of their own. Made of either bronze or iron, a ship's guns and the crew that manned them could make or break an attack and successful capture of another ship and its treasure.

A pirate's intention when attacking another ship was not to destroy the ship, but capture it because the ship itself was part of the treasure. A warning shot from a cannon would be fired over the bow or front of the targeted ship and pirates aboard their own ship would bang on the deck and scream and yell trying to scare their victims into giving up without a fight, a practice known as vaporing. If these scare tactics did not work, a full blown attack would follow.

Cannons are identified by the size of the shot they can hold. For example, a 6-pounder is cannon that use a cannonball about the size of a baseball that weighs six pounds.

The distance or range of cannon varies with the size and angle of the gun, and the amount of black powder used. A full load of gunpowder would be half the weight of the ball, which means, for a 6-pound cannon, three pounds of gunpowder would be needed. With a full load of gunpowder, a 6 -pound cannon has a distance of about 1 to $1 \frac{1}{2}$ miles. Using less powder reduces the distance. Larger cannons, such as 16-, 18- or 24-pound cannons, can potentially reach distances of 3 to $31 / 2$ miles. For any size cannon, the utmost distance with a full load of powder can be achieved when the gun is positioned at a 45-degree angle.

The accuracy of a cannon depends mostly on location; for example, whether or not a cannon is aboard a moving ship or something more stationary like a fort. Obviously, it is harder to hit a target if the cannon is on a ship being tossed about in the ocean, but having an experienced gun crew can help!

## Parts of a Cannon

Tiew from above a cannon


## Pirates Ahoy! <br> Have you ever fired real cannon? <br> Would you like to?

Feel the build up and the boom when you fire real 17th century cannon on Gun Deck at the
St. Augustine Pirate \& Treasure Museum!

## Loading and Firing a Cannon

During the Golden Age of Piracy, most cannons were muzzle loaders. This means everything was loaded in the front or muzzle of the cannon and pushed to the very back of the cannon near the small hole called the vent. The basic tools needed to load and fire a cannon include (from left to right) a matchstick, sponge, worm, ladle and rammer.

The sponge should be wet. It was used to swab inside the cannon to clean residue and to extinguish any burning embers from a previous shot.

The ladle was used to transfer gunpowder from a keg or barrel to the cannon. The ladle should be inserted all the way to the back and turned to dump out the powder.

Next, a piece of cloth or a 'wad' was inserted into the cannon and the rammer used to push the wad and gunpowder to the very back. After adding a cannonball, the rammer was used again to push the ball and load to the back of the cannon.


Prime the cannon by pouring a small amount of gunpowder down the vent and on the top around the vent. Now, the cannon is loaded and ready to fire. All that's left is the matchstick with a match cord wrapped around it.

A match cord is a cotton rope that has been soaked in potassium nitrate, one of the main ingredients in gunpowder, so it burns slowly. Simply touch the matchstick to the gunpowder at the vent opening and KABOOM! The cannon fires almost immediately! The worm tool is then used to scrape out any remaining bits of cloth.

Sponge, reload and the cannon is ready to fire again in about 30 seconds!
Gunpowder burns rapidly and when in a confined space as in a cannon, the heat and gases that form during the burn need some place to go. They will propel anything in front of it, namely the cannonball, out the muzzle of the cannon at about $800-1000 \mathrm{mph}$, (roughly the speed of sound) slow enough that you can see it coming, too fast for you to get out of the way.


## In Class Activity - Ready Your Cannon for Firing

Step 1: Cut the dotted line along the front of the muzzle of the cannon and the top of the gunpowder keg. Cut out your tools.

Step 2: Take up the worm to scrape out the cannon and get any bits of wadding left from your last shot.
Step 3: Take up the sponge and wash out the cannon.
Step 4: Take up the ladle, scoop it into the powder keg to get some black powder, then put it into the cannon.

Step 5: Use the rammer to ram down the powder (and wadding and cannon ball).
Your cannon is loaded and ready to fire! To fire a real cannon visit the St Augustine Pirate \& Treasure Museum!

sponge




## Science: Navigating the High Seas

## How did pirates get where they wanted to go?

Pirates used a variety of tools and techniques to navigate the high seas. Learn all about the most useful navigational tools below!

Backstaff: Navigators used this instrument to calculate latitude by measuring the sun at noon or the North Star at night. Longitude was not used at this time.

Octant: A more sophisticated tool inlaid with mirrors used to measure latitude, it was useless on cloudy days because sightings of the sun, stars, and landmarks could not be taken.

Compass: A device used to determine direction by means of a magnetic needle or group of needles turning freely on a pivot and pointing to the magnetic north. No pirate would be caught dead without his trusty compass!

Spyglass: A monocular device that provides magnification. It was nicknamed a 'Bring 'em near' and was used to spot land, enemy ships, and fortune. It's also referred to as a handheld telescope.

Sandglass: A sandglass is an instrument used to measure time. The sand at the top of the instrument runs through the bottleneck to the bottom of the instrument in exactly one half-hour. Time was very important to pirates and all sailors.

## What is a compass and how was it used?

The compass is the most important directional instrument on any sea-faring vessel. The compass was constructed of a wooden bowl that swung on gimbals or pivoting rings to keep it level at sea. A compass card showing direction was suspended in the middle of the bowl with a magnetized wire attached to its underside. Once magnetized by the lodestone, a magnetic rock which can be used to magnetize the compass needle, the wire would always point north. This allowed ships to find their magnetic north and easily gauge their direction.

## Science

## In Class Activity: How to make a homemade compass

Items needed for this exercise:
A magnet
A needle
A piece of string
Have your crews create a compass following the directions below.
First: Take a sewing needle and repeatedly stroke it in the same direction with a magnet. (If you don't have a magnet, you can use silk to achieve the same effect.)

Second: Suspend the needle from a piece of thread attached at the needle's center for balance. Make sure the needle is perpendicular to the floor.

Third: Remain motionless as the magnetized needle aligns itself to the Earth's magnetic field and slowly turns to point north.


## Science: Underwater Exploration

## Modern Day Treasure Hunters



St. Augustine Pirate \& Treasure Museum founder, Pat Croce, hoists a cannonball during recent underwater exploration in Portobello Bay, Panama.

The pursuit of Spanish treasure galleons was an important activity for pirates of the Golden Age. Many galleons met disastrous fates and their stories ended at the bottom of the sea. Today, these treasures are hunted for their historic and monetary value, not by pirates, but by underwater archeologists.

## What is underwater Archeology? Underwater

Archeology is a way to study the past by observing a collection of artifacts found in bodies of water, usually on the ocean floor. These artifacts are often remnants of lost ships and treasure ships.

## How does this differ from treasure hunting?

Treasure hunting is usually associated with looting rather than scientific discovery. But the lure of financial gain has created a culture of exploration and discovery that rivals the discovery of the New World by European explorers. Modern day treasure hunters realize that the real value of any discovery lies in the historical significance of the find. As a result, the line between treasure hunting and archeology has blurred, and instead of being rivals for the same artifacts, these factions have become players on the same team.

## What are the six steps of underwater archeology?

1. History Before ever approaching the water, an archeologist asks questions to gather information about the site: What is the site? Who is associated with it? When was it created? Why is it important? Like a detective trying to solve a mystery, the archeologist searches for information in written materials and images to learn as much as possible.
2. Search The archeologist chooses an area to search based on historical research because the depth, visibility of the water, speed of the current and other factors might make it impossible to see a shipwreck with the naked eye. History helps determine where he or she might be more likely to find a wreck site. Archeologists use tools, such as a magnetometer, which detects metals buried in the sand on the sea floor like anchors or cannonballs, to 'look' under the surface of the water for the presence of a wreck. Divers may then enter the water to learn more.
3. Recording Archeologists use many tools to record information about a shipwreck. Sometimes they excavate or dig for clues, but they also gather information by taking pictures, drawing, shooting videos, and taking measurements to create maps. One method of recording information is using a baseline and triangulation to map wreck sites. Not sure what those are? You'll find out soon!
4. Analysis After the archeologist has documented and recorded all the objects on a site, it is time to analyze that data. This is how we learn more about the stories of the people associated with the wreck site: who they were, how they lived, and what objects they used in their daily lives. Each object has its own story to tell, and by looking at all of the artifacts we can understand more about the people whose lives they touched.
5. Conservation Over time, artifacts left underwater absorb salt and other chemicals that can cause decay. They are also exposed to marine life that feed on materials like wood and bone. But one of the most destructive things is if an artifact is removed from the water and dries without protection. When archeologists retrieve an artifact, they make preparations to conserve it. Conservation means stabilizing and preserving the artifact for future generations to study and enjoy.
6. Publishing Every archaeologist knows that no matter how well you've done on the first five steps, the job isn't done until you have taught others what you have learned. Underwater archeologists are very fortunate to have the chance to explore and discover; not everyone can do that. And yet the information retrieved about our history belongs to us all. Publishing their findings means sharing that knowledge with others. They do this in many ways: via websites, museum exhibits, books, and articles among others. Learn what you can and share the story.


## Science: Plotting a Wreck Site

One tool used by modern underwater archeologist to survey a wreck site is the baseline. A baseline is laid down the middle of a wreck site and is a point of reference to locate artifacts and locations in the site.

Look at the wreck drawing below:


Wrecks on the ocean floor are often scattered over a large area. To keep track of certain key features, it's important to be able to plot exactly where they are located on the wreck site.

A baseline through the center of the site allows the scientist to easily relocate items previously plotted through a process called triangulation. If the baseline on the above drawing is placed through the middle of the wreck, and an artifact (the anchor) is equal distance from two designated points on the line, the artifact can be quickly relocated by others studying the site.

## Science

## Classroom Activity: Plotting a Wreck Site

Tools Needed:
Roll of String
Tape Measure
Artifact Cutouts
Roll of Masking Tape
(provided below)

First, divide into your pirate crews. Place a baseline using masking tape down the center of the classroom. Place marks every two feet along the baseline, numbering each mark's location, and noting the general compass directions of the classroom.

Now have one crew leave the room. The remaining crews place the three 'artifacts' provided below inside the classroom at various places. Using triangulation, plot the location of the artifacts. Using the string, measure the distance from the artifact to two different points along the baseline. Write down the information for plotting the locations and then pick the artifacts back up to hide their location.


For Example: The anchor is located east of the baseline, four feet from position \#2 on the baseline, and three feet from position \#3 on the baseline. Where the two strings meet is where the artifact can be found.

Third, have the crew return with only the written information about where the artifacts were located. Have the crew plot where they believe the artifacts can be found and create a rough map on a piece of paper of where the artifacts were located.

Fourth, repeat for each crew, each time change the location of the artifacts to make it challenging. Be sure to give good written instructions to make each plotting as accurate as possible.

See if all of your pirate crews can find all of the artifacts. See who gives the best written instructions for finding the pieces.


Cut out these three artifacts, place them around the classroom and plot the location of the ship's anchor, compass and wheel.


## Mathematics

## Pirates know the Value of their Booty!

When people think about pirate treasure, they think silver and gold. And that's mostly true. After all, pirates, explorers and adventurers have sought after precious metals for centuries. And the Spanish minted much of it into coins and shipped them back to Spain.

Spain was the world's superpower during the Golden Age of Piracy and its currency-from gold doubloons to silver reales-was recognized throughout the world as a legitimate form of payment, so it was very important to know just
 what your coins were worth.

## In Class Activity: Convert the Value of Spanish Coins (Mathematics)

Spanish Reale (silver) was a Spanish coin made of silver. The 8-reale, or piece of eight as it was commonly known, was the basis for many worldwide currencies, even the U.S. Dollar! The silver reale was minted in denominations of $1 / 2,1,2,4$, and 8 -reale (piece of eight).

Escudo (gold) was a Spanish gold coin worth one half of the gold doubloon or 16 pieces of eight. It allowed for larger transactions to take place. The escudo was minted in denominations of 1, 2, 4 and 8 escudos. The 2 -escudo was commonly known as a Gold Doubloon.

## Conversion Table:

1 piece of eight = 8-Reales
1 doubloon $=2$-Escudos
1 escudo = 16 pieces of eight

Answer the questions on the following page. Use the conversion charts and definitions above to determine the answers to questions below.

## Mathematics Questions:

1. If you have 4 escudos, how many pieces of eight could you trade them for?

- 64
- 36
- 8
- 16

2. As a pirate you find it hard to spend your doubloons, so you choose to convert them to reales. How many pieces of eight would you receive for 3 doubloons?

- 12 pieces of eight
- 2 pieces of eight
- 48 pieces of eight
- 96 pieces of eight

3. A fellow pirate has 24 pieces of eight and he wants you to trade 1 gold escudo for them. Is this a good deal?

- Yes, 24 pieces of eight is worth more than 1 gold escudo
- No, 24 pieces of eight is not worth more than 1 gold escudo
- It doesn't matter, 24 pieces is worth the same as 1 gold escudo

4. You have 3 escudo coins. How many pieces of eight are they worth?

- 3
- 48
- 12
- 24

5. If you have 10 Doubloons, how many pieces of eight are they worth?

- 32
- 120
- 160
- 320


## Mathematics

## How to use a sandglass

The sandglass was used to keep time onboard the ship and was an important part of the ship's daily operations. The sandglass ran out of sand every halfhour. At that time, the watcher or watchman rang the bell and the instrument would be turned over for the next half-hour period. The middle watch began at midnight. The first bell rang only once at 12:30 a.m. Every half an hour one more ring was added. For example, two rings for 1:00 a.m., three rings for 1:30 a.m. and so on.


Each man's watch lasted for eight bells; the bell count reset for each watch. The watcher was replaced on the watch every four hours. The midnight middle watch was replaced at 4:00 a.m. by the morning watch, which was replaced at 8:00 a.m. for the forenoon watch etc.

## In Class Crew Activity / Review Questions:

## What time is it?

Use the above information to answer these questions:

1. While aboard your pirate ship in the dead of night (after midnight), you hear 2 bells, what time is it?
2. While aboard your pirate ship in the dead of night (after midnight), you hear 5 bells, what time is it?
3. While aboard your pirate ship in the dead of night you here 8 bells (after midnight), what time is it?
4. If you have the morning watch, what time is it when you ring one bell?

Now it's time to build your own time piece. Each pirate crew should acquire the needed materials listed at the top of the next page, follow the instructions, and build their very own 30-second sandglass. The idea of a 30-minute sandglass is identical, just on a larger scale.

Once built, you may decorate the device any way you like. Remember, this is a very important working tool for your ship, so make sure the decorations you choose do not affect how the sandglass operates.

## Mathematics

## In Class Crew Activity: Build a Sandglass

Materials needed to build a 30 -second sandglass

| Plastic bottles (2) | Duct or Scotch Tape | Salt (or clean sand) |
| :--- | :--- | :--- |
| Hole-punch | Thick Paper (Cardstock) | Scissors |

## Step by Step Instructions:

Step One: Remove labels and caps from each bottle and place in a recycle bin if available.
Step Two: Hole-punch the paper.
Step Three: Fill one bottle with salt or fine, clean sand.
Step Four: Place the empty bottle over the paper and center the bottle opening over the hole punched earlier. Use a pencil to trace the outside of the bottle opening and then cut out the cap-sized piece.

Step Five: Put the cut paper over the top of the full bottle. Place the empty bottle neck down over the paper. Tape the two bottles together so the salt can easily flow from one bottle into the other.

Step Five: Turn the bottles over so sand begins to flow from the full bottle into the empty one, and count 30 seconds.

Step Six: After 30 seconds, lay the bottles on their side. Remove the top bottle. Empty any remaining salt and re-tape the bottles. Now you have completed your timepiece! Re-test after re-taping to make sure you are satisfied with the results.


Plastic Bottle Diagram

## Classroom Competition

Once the project has been completed, it's time to see which pirate crew has the most accurate sandglass. With all the sandglasses lined up, flip each over and start the clock. Use the classroom clock to track 30 seconds. The sandglass with the least remaining sand, without being completely empty is the winning timepiece.


Run the experiment five times, ranking each crew's timepiece on accuracy each trial. Average the rankings, and the crew with the lowest score is the winner! The winning crew gets to display their pirate flag at the front of the class for a whole week!


## Mathematics

## Passing the Time: The Passage Game

Stories of Pirates seem very exciting: Hand-to-hand combat, firing broadside cannons between ships, raiding Spanish treasure ships all seem like thrilling parts of a romantic lifestyle. But the truth is, much of pirates' lives were not so exciting.

Days on a pirate ship were often boredom-filled. Hours upon hours alone on the open seas gave way to brief periods of frantic excitement and chaos during an attack. To pass the time, pirates created games to keep themselves and fellow pirates occupied.

Inside Rogue's Tavern at the St. Augustine Pirate \& Treasure Museum, you will see handmade games that pirates used to pass the time. Can you find the hand-carved pirate dice hidden in the tavern's Discovery Drawers?

One of the games pirates played was called Passage, a simple game played with just one pair of dice.

How to Play: Passage can be played with any number of players. Each player rolls a die, with the highest throwing first and the lowest 'setting the point'. The player with the lowest roll throws a die again and the number rolled becomes the point number.

Each player in turn rolls the dice and scores one point for every occurrence of the point number. The first player to reach 11 points wins the game. If a player rolls a double point number, they receive 3 instead of 2 points (for example, if the point number is 5 and double 5 's are rolled, the player receives 3 points).

## Classroom Activity: Passage Tournament (Mathematics)

## Materials needed: Pair of dice

Each pirate crew plays their own game of Passage. The winner from each crew plays in a winner-take-all tournament. The winner of the tournament has the privilege of displaying their pirate flag in the front of the class for the week.


## ADDITIONAL RECOMMENDED READING:

The Pirate Handbook: A Rogue's Guide to Pillage, Plunder, Chaos \& Conquest Written by Pat Croce, Published by Chronicle Books 2011

Pirate Soul: A Swashbuckling Journey through the Golden Age of Pirates
Written by Pat Croce, Published by Running Press (Perseus Books Group) 2006
Under the Black Flag: The Romance and the Reality of Life among the Pirates Written by David Cordingly, Published by Random House 1996

A General History of the Robberies \& Murders of the Most Notorious Pirates Written by Captain Charles Johnson, Published by First Lyons Press 2002

Coins of the Lost Galleons
Written, Compiled \& Edited by Captain Kathryn Budde-Jones, Printing-Action Graphics 1989

## ADDITIONAL RECOMMENDED WEBSITES:

PC's Drake Expedition: Search for Sir Francis Drake - www.thepiratemuseum.com
St. Augustine Pirate \& Treasure Museum - www.thepiratemuseum.com
Expedition Whydah: Sunken Pirate Treasure Ship - www.whydah.com
Queen Anne Revenge Research Project - www.qaronline.org

For more information, or to schedule a field trip, please contact:

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