



National Park Service
U.S. Department of the Interior

**Golden Gate
National Recreation Area**

**Division of Interpretation
and Education**

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Golden Gate Information

Park Information

Fort Point is located beneath the south anchorage of the Golden Gate Bridge. Due to its location, the fort provides dramatic views of the ocean and bay. The interior of the fort can be viewed on all four levels. Use caution on the steep staircases, around the area of uneven pavement and on the old gun mounts. Bathrooms are located just outside the fort. Only the first floor of the fort is wheelchair accessible.

Fort Point National Historic Site is administered by the National Park Service as a unit of Golden Gate National Recreation Area. The Golden Gate National Parks Conservancy is a non-profit membership organization established to support the education, conservation and research programs of the park.

Directions to Fort Point

From the South or East Bay

Take 101 north to the Toll Plaza of the Golden Gate Bridge. Take the exit that says, "View Area - Presidio - Golden Gate NRA" (last exit before entering the Toll Plaza). Turn right as soon as possible (heading south out of the viewing area). Turn left onto Lincoln Blvd. Turn left at Long Avenue. Meet at Fort Point.

From the North

Take 101 south across the Golden Gate Bridge. Stay in the right lane and just after passing through the Toll Plaza, take the right exit marked "25th Ave." Bear to the right passing under the Toll Plaza and continue through the viewing area to Lincoln Blvd. Turn left onto Lincoln Blvd. Turn left at Long Avenue. Meet at Fort Point.

Parking and Transit Information

Free parking for buses and cars is located at the fort. For public transportation, MUNI routes #28 and #29 stop at the toll plaza of the Golden Gate Bridge. For more information on transit routes within the Bay Area, just dial 817-1717 and press 1 for public transportation. The walk from the toll plaza to Fort Point is about half a mile long down a paved road and wooden stairs.

Weather

The weather at Fort Point is generally cold and windy throughout the year. Fog and rain are common during the winter and summer months. Always wear or bring warm, layered clothing and sturdy shoes during your visit.

Fort Rules

For the safety and enjoyment of all visitors, please make sure that everyone understands the following rules before your visit inside the fort:

- Stay together as a group
- No running, climbing or throwing objects
- No shouting or spitting
- No food or drinks, including gum and candy

Fort Builders

Fort Point is a brick and granite fortress built between 1853 and 1861. Many workers with different skills had to work together to build the fort.

Quarriers

The quarriers cut out the granite rocks from the quarry holes in the ground. They cut the large rocks into large, roughly shaped cubes.

Stonecutters

The stonecutters hammered the large stones into different shapes in a long, covered shed nearby. They constructed the bottom levels and stairs of the fort with these stone blocks.

Brick makers

The brick makers gathered and mixed the ingredients. Then, they cooked and sorted the bricks in a nearby brickyard.

Masons

The master masons directed all of the work of the other builders at Fort Point. Rough masons shaped and smoothed the granite stones to the exact measurements set by the master masons. The freemasons carved shape and curves in the stone. The brick masons laid the bricks to build the walls of the fort.

Apprentices

Several younger workers, called apprentices, studied the work of the masons for many years before they became masons. They helped build Fort Point.

Life of the Masons

The master mason and a crew of 12 brick makers made more than one million bricks in 1855. About eight million bricks altogether were used to build Fort Point.

Some of the bricks made at Fort Point were sent to construction sites at Fortress Alcatraz.

In 1857, there were 69 masons, 105 workers in the brick yard, 17 stonecutters, and 97 apprentices working at Fort Point.

A master mason earned \$275.00 a month. The other masons could earn about \$73.00 a month.

One-third of the fort builders lived in San Francisco.

An omnibus, a wagon drawn by horses, brought the workers from the city to the fort.

Workers arrived at the fort at 6:00 a.m. and left at 5:00 p.m.

Bricks are made of clay, sand and water. The bricks at Fort Point are red because of the iron in the clay.

The granite used in the foundation of the fort came from Monterey, California. It cost about \$15.00 per ton.

Two thousand tons of granite inside the fort came from China. It had been used as ballast (materials to balance and keep a boat steady) on sailing ships.

The granite used in the spiral staircases came from Folsom, California.

Building with Granite

The roughly shaped granite arrived to the Fort Point Wharf by ship. A wagon took the stone from the wharf, along a wooden plank road (Marine Drive), and to the construction site at the point.

The worker shaped the large rocks into smooth blocks for building the fort. They used hammers, chisels and points to polish the granite. This process is called *bankering up the stone*.

Bankering up the stone

The following process was repeated until each side of the block was polished. After the mater mason inspected the work, the granite was fitted into

place. The finished blocks were used to construct the first floor and the spiral staircases.

1. Draw a straight line along the edge of the stone. Remove the rough edge with a pitching chisel and a hammer.
2. Smooth out the edge with a cutting chisel and a hammer to cut the first draft.
3. Draw another straight line perpendicular to the first draft. Pitch off and draft the second edge.
4. Pitch off and draft the third and fourth edge in the same manner as the first and second. Use a point to smooth the rest of the face.

Building with Bricks

The original plan stated that the entire fort would be built of granite. Because granite was expensive, the engineers decided to use bricks to build the rest of the fort. Bricks are strong, less expensive, and easy to make.

Making Bricks

Clay was found in the hillside near the fort. Sand and water were gathered at a nearby beach. These ingredients were used in the following process to make bricks:

1. The first step in brick making is to gather the ingredients. The sand and clay were added together in a mixture of 30 percent sand and 70 percent clay, and then mixed in a machine called a pug-mill. This machine was driven by steam power and sometimes by horses. The mixing of ingredients is called tempering.
2. When the mixture felt like soft mushy mud, workers placed it in a metal or wooden mold. A mold is a model shape for the brick to fit; a lot like a cookie cutter. This was called molding.
3. The bricks were then set aside to dry. When they were dry enough to come out of the mold in one piece, they were stacked inside a kiln. Here, the bricks were placed sideways on their edge with spaces in between them. These spaces let heated air move around and bake the bricks. A kiln was a large oven for cooking the bricks into their hardened form that we see today in the fort.

4. The kiln would heat the bricks to a temperature of about 1,800 degrees F. This heating process was called burning.

A scove kiln, a temporary stove, was built to bake the bricks for Fort Point. The heat in these kilns was not very even. Because of this, all of the bricks did not look the same after the burning. When we bake a batch of cookies in our ovens at home, some of them burn, while others are just right. The same thing happened to bricks - some were better than others after the burning.

The bricks with the best strength, size, and uniform look were called face bricks. These were set aside and used only in places where they would be seen, such as the outer walls and arches. The remaining bricks, called common bricks, were used on the inside of the walls and arches, and in places where plaster covers the walls. These bricks were often discolored and burnt.

Brick Patterns

A brick wall appears to have bricks that are different sizes. Actually, the bricks are the same size. They are arranged in a special way to create a pattern.

The short-looking bricks are called headers, and the long-looking bricks are called stretchers. These stretchers and headers could be combined in many different ways to form walls. These patterns are called bonds.

At Fort Point, Flemish bond and English bond were most widely used. When a stretcher is followed by a header and this pattern continues, it is called Flemish Bond. Flemish bond can be found in most of the walls at Fort Point. When an entire row of headers is followed by a row of stretchers, this is called English bond. English bond can be seen at Fort Point in many of the arches.

Laying Bricks

Once the bricks were baked and sorted, it was time for the bricklayers to begin construction! The brick mason had many tools to make sure the bricks were placed correctly.

1. A trowel was used for spreading mortar and breaking bricks into shapes. Mortar was a mixture of lime and sand and water. It was a type of cement that held the bricks together.
2. A bricklayer's hammer had a hammerhead on one side and a sharp edge on the other for shaping and breaking bricks.
3. A brick-axe was a long piece of metal with a chisel head on both ends for cutting and shaping.
4. The bricklayer's helper used a hod on a long stick to carry bricks and mortar to the bricklayers.

The bricklayers then began to lay the bricks for the walls. The corners of the walls were always built up first, so that lines of string could be stretched between them to guide the bricklayer. It was very important that the bricklayer keep all of the lines equal and level. Therefore, a level, square, plumb-rule, and compass were used to keep the lines equal and evenly spaced.

Hospital Workers

Fort Point had a small hospital for sick soldiers. The person in charge was called a hospital steward. The soldiers who helped him were called attendants or nurses. They had a special book of rules and regulations to tell them what to do.

Here are some of those rules and regulations quoted directly from the Hospital Steward's Manual, J.J. Woodward, U.S. Army, 1862.

Hospital Steward

The hospital steward is a non-commissioned officer; he ranks with ordnance sergeants and next above the first sergeant of a company. He is therefore entitled by his rank to obedience from all enlisted men who may be in the hospital, whether patients, ward-masters, nurses, or employees, who must cheerfully and promptly comply with all his reasonable and lawful commands.

For disobedience of orders, neglect of duty, drunkenness, or any other military offense, the hospital steward may be placed in arrest by the commanding officer, and may be tried and punished by court-martial, as is the case of the enlisted men.

The pay of a hospital steward appointed by the Secretary of War is \$30 a month, with one ration a day, and the clothing allowance of an enlisted man.

A hospital steward must be temperate, honest and in every way reliable, as well as sufficiently intelligent, and skilled in pharmacy.

Hospital Attendants or Nurses

Enlisted soldiers served as nurses and were entitled to twenty-five cents daily "extra duty pay," for service as a hospital attendant or nurse. They are excused from all other duty but must attend the parades for muster and weekly inspections of their companies at the post unless specifically excused by the commanding officer.

Sobriety, intelligence, and cheerful obedience to all lawful commands are important qualifications for hospital attendants. Those who work hard can be promoted to hospital steward by the surgeon.

These duties are important, and require sobriety, loyalty and intelligence on the part of the attendant to whom they are entrusted. Great care must be taken in the selection of the chief nurse.

Daily Schedule of Hospital Workers

Reveille, at 6:30 a.m. in winter, and 5 a.m. in summer.

Morning roll call, fifteen minutes after.

Breakfast call, 7 a.m. in winter, and 6 a.m. in summer.

Surgeon's call, 9 a.m. in winter, and 8:30 a.m. in summer.

Dinner, 12 p.m., preceded by noon roll call when so ordered.

Surgeon's evening call, 5 p.m.

Supper, 6 p.m.

Tattoo and evening roll call, 8 p.m.

Taps (lights out), 9 p.m.

Commanding Officer

In post hospitals it is usual for the commanding officer to complete his Sunday morning inspection by inspecting the hospital with the assistance of the surgeon. The hospital should be neat and clean. Those patients who are sitting up should be neatly dressed in uniform, with their faces and hands clean, hair neatly brushed and shoes well blacked. The attendants and stewards should appear in full dress uniform according to their rank.

Chief Nurse

The chief nurse will see that the beds are made up in the morning; that chamber pots, bed pans and urinals are emptied whenever used; that the ward is properly swept and cleaned daily; that the meals of those patients who are confined to bed are given to them at the proper hour; that those patients who can walk to the common table are assembled at the dinner hour and marched to the dining hall; that all medicines are received promptly and given to patients; that the hospital has air free from unpleasant odors; that the hospital is properly lighted at night and warmed in the wintertime; and that all the rules established by the surgeon are carried out.

Nurses

The nurse also is immediately responsible for the personal cleanliness of the patients under his charge. A nurse ensures that when patients are able to do so, they wash themselves daily, and change their underclothes at least once a week. When the patient is unable to wash himself and change his clothes, these duties must be performed for him by the nurse.

When patients need to use the bed pan, urinal or chamber pot, the nurse should give it to them. Immediately after one of these is used, the nurse must carry it out of the ward, empty it, cleanse it, and return it to its place. On no account should containers with urine be allowed to remain even for a few minutes in the hospital.

Bedbugs are best avoided if the beds are clean. Beds must be wiped with soap and water. Lice may be removed by the use of the fine-toothed comb or strong soap and water.

One nurse should be assigned to sweep and clean the floor, walls and windows; another maintains the fires and manages the lights; a third cleans the bathroom.

The nurse should remember that absolute obedience is expected. Every time he disobeys or neglects the surgeon's orders, a patient's life is threatened. It is not for the nurse to judge: the surgeon is responsible.

Hospital Rules

These rules were posted in the fort and the soldiers had to obey them:

No patient will be allowed to leave the hospital without permission from the surgeon in charge. The same rule will hold with respect to nurses and other attendants.

No pass will be issued except between the hours of 10 a.m. and 12 p.m., except in urgent cases. The pass will be shown to the guard on post.

No smoking, swearing or loud talking will be permitted in the wards and passages of this hospital; and spitting on the floor, or defacing the building in any way, is positively forbidden.

The beds will be made every morning by the attendants, or more often if necessary. Patients able to do so will make their own beds.

No patient will occupy his bed without undressing.

Every patient who is able will wash his face and hands at least every morning, and keep the rest of his body in a clean condition.

No loud noises or improper language will be allowed in the wards at any time. All talking will cease at 8:30 p.m.

Lounging about the halls is also forbidden.

No provisions or liquors of any kind shall be brought within the hospital without permission of the medical officer of the day. Nor will any relatives or friends of patients be allowed to give such supplies to them, without permission from the medical officers of the ward.

Patients will give prompt obedience to the stewards, ward-master and nurses in all lawful commands. Any infractions of discipline, disobedience to orders, drunkenness or disorderly conduct will be promptly punished.

Diseases of the Time

There were certain diseases that were very common in the late 1800s when the soldiers lived at Fort Point.

Typhoid fever gave a patient a bad fever, pain in the back, arms and legs, headache, stomach ache and loss of appetite. It is caused by a bacterium which lives in unclean food and water. The worst part (which doctors did not understand) is that someone who is cured from the fever continues to carry the disease. The cured person can pass it on, unless people are very careful to keep their hands and bodies clean. Any type of filthy condition caused this disease to spread rapidly.

Fluxes was another serious type of illness. Today we call it dysentery. The main symptom is diarrhea. The food travels so fast through the intestine that the body cannot absorb water or minerals and vitamins. A patient with flux often (but not always) has fever, stomach cramps, no appetite and watery stools and may dehydrate.

Now we know that the germ which causes dysentery lives in dirty water and food. It first lives in the intestines and then travels throughout the body. Even today it is hard to treat bad cases of dysentery. Some medicines that would have helped (paregoric and opium) were known to the doctors, but they did not use them for this disease.

Pneumonia also caused many deaths. Some soldiers, weakened by exposure to wet and cold weather, got infected lungs. Sometimes, a soldier got one disease, was weakened, and then died of pneumonia. A patient with pneumonia would have a fever, a dry cough, pain in the chest and chills.

Today, most people can put up with the germ which causes pneumonia and not get sick. This is because of good health, diets, and modern drugs. The germ which causes pneumonia is found in the noses and throats of many healthy people. Sometimes good food, a mustard plaster, and tender care were able to conquer pneumonia. Doctors had medicines to stop the cough and quinine could reduce a high fever.

Malaria presented another problem. Doctors thought malaria came from "stagnant waters" (drinking water which was standing still -- not running, like a stream or river). Now we understand that it is carried by a certain mosquito, which actually lays its eggs and lives near stagnant water. This was not discovered until 1902.

Patients with malaria would have a high fever, sweats and chills and general weakness all over their body. Quinine was the main treatment. Today we have much better medicines. However, quinine is still good for treating the symptoms of this bad disease.

Other diseases, called "eruptive fevers" because they caused rashes or sores on the skin, were smallpox, measles and scarlet fever. Usually, people catch these diseases in childhood, recover and can't catch them again. However, soldiers from small towns may not have been exposed to these diseases as children.

These diseases are more serious if one catches them as an adult. Sometimes an entire regiment of soldiers would be hit by one of these diseases - one

soldier passing it to others. Men would become desperately sick with chills and burning fever.

Doctors were beginning to understand about vaccinations. In a vaccination, a person is given a tiny amount of the germ which causes the disease. This isn't enough to make him sick, but it is enough for his body to develop resistance so he won't catch the disease. Sometimes even vaccinations did not work.

Medical Practices

None of the modern drugs and medicines that we know today was used during the 1850s and 1860s. Doctors used home and herbal remedies. However, there were four or five drugs that helped patients.

Quinine was the "wonder" drug of the time. It was mainly used as a treatment for malaria, a deadly disease passed by mosquitoes. It was even used for other problems including fever and diarrhea. Doctors also used it to clean wounds and as a gargle. It was very bitter!

Morphine was used as a pain killer. Sometimes the powder was dusted directly onto a wound.

Chloroform and ether were both used as anesthetics. Doctors preferred chloroform because it would not burst into flames. Ether could be very dangerous to use when the hospitals were lit by lanterns and candles.

Alcohol (whiskey) was used for "whatever ails you!" Alcohol generally was not helpful and often made the patient worse.

Doctors did not generally understand that disease was usually carried by germs. So, they did not make sure that their hands and tools were clean before treating patients. Some medicines which would have been excellent germ-killers were only used as deodorants -- to make the stinking hospitals smell better.

Leeching

Leeches are small, pond animals that suck blood from the patient and hopefully the sickness out as well. They were used commonly in the 1850s and 1860s. Below are directions that were given to the hospital workers:

In the application of leeches, the surface to which they are to be applied must first be prepared by washing it carefully with warm water. If the part is hairy, it should be shaved. To make the leeches take hold more readily, the parts on which it is designed for them to fasten may be moistened with sugar and water, or still better, with blood drawn from the tip of the finger.

The leeches are applied a few at a time, and as these take hold others are added, until the whole number directed have fastened upon the part. As each fills, he lets go his hold and falls off; but if from any cause it is desired to remove them, sooner or later they may be made to let go their hold by putting common salt upon them. The leech should not be pulled off by violence, lest a portion of its head be broken off and remain in the wound, thus causing unnecessary irritation and killing the animal.

After the leeches are removed, bleeding may be encouraged, if so directed, by applications of warm water or of a warm poultice, or it may be checked, after carefully washing the part with cold water, by simple exposure to the air. Sometimes, however, the bleeding is quite profuse, and may resist this simple measure, in which case a sharp-pointed stick of nitrate of silver, introduced into the little bleeding orifices, will generally be found efficient.

Leeches may be kept on hand in good condition, for a long time, in tubs filled with water, at the bottom of which turf or peat is placed: the water should be changed about once a week. After the leeches have been used, some means should be employed to evacuate the blood they have gorged; otherwise, they generally die. This may be done by sprinkling them with salt, or pouring salt water upon them, which causes them to eject the contents of their stomachs.

A better plan, perhaps, is with a thumb-lancet make two small punctures on the back of the leech, one on each side of the median line: through these the blood escapes, and the little wound subsequently heals. Once used,

leeches should be kept in a vessel separate from the others for two or three weeks after which those which survive may be again employed.

Company Laundress

The army allowed laundresses to live down the road from the fort. Young girls could be laundresses, if they were at least thirteen years old and were able to do the work. There could be four laundresses for every hundred men. The laundresses served under the post commander. They received housing, fuel, services of the post doctor, and daily food. Often an enlisted soldier would receive permission to marry a laundress. If the marriage were approved, the husband/soldier could live with the laundress.

These washerwomen lived in crude housing on what was called *Suds Row* or *Sudsville*. Generally, these homes were old huts, tents pitched on lumber frames, shacks built of old boards, or tents made of gunny sacks. The women kept their homes warm by packing snow and straw around the outside in the winter. They bought their kitchen supplies from the sutler's store at the fort.

Washerwomen worked very hard all year. They had to haul the water for washing clothes from the nearest spring, lake, or river. They had to make their own soap. They made soap by mixing lye, wood ashes, and lard. They hung clothes on a clothesline to dry.

The laundresses were subject to the military law of the fort. One laundress is known to have been court-martialed (tried in court) for using disrespectful language to an officer. The laundresses were described as being rough, tough, and capable women who lived together in dirty houses where dogs and chickens roamed outside. Many had several children with them. The washerwomen helped each other and the wives of the officers during childbirth and illnesses of the children.

A hard-working laundress could earn up to \$40 a month.

Laundress Daily Life

The children of a laundress and soldier would live with them in *Sudsville*. Sometimes, husbands took their turn watching the children while the wives did the laundry.

Laundresses could charge officers up to \$4 per month for laundry services. Or, they could charge them \$1 per dozen items.

Laundresses and their husbands could cook and eat in their own quarters in *Suds Row*. They were allowed to keep milk cows for their private use. They could buy food in town or from the post sutler.

Laundresses needed scrub boards, wash boards, irons, an ironing board, pails, soap and water to correctly wash the clothes.

Conditions in *Suds Row* could be difficult. Most tents or shacks did not have a lot of light or ways for fresh air to come in. Nearby "privies" (outhouses) and chicken coops added to the unhealthy conditions. Dirty water might be dumped nearby also.

The laundresses had to split their own wood for building fires. They had to be very careful. If they cut themselves and the cut did not heal, they could die of an infection.

Laundresses were mid-wives (helped delivery babies) and nurses for each other and for the wives of officers.

Laundresses could bake pies for soldiers as a way of earning more money.

Washing Procedures

Washers and dryers were not available during the 1860s. People had to wash by hand to clean their clothes. The water had to be hauled from nearby sources. The soap had to be handmade. The clothes had to be scrubbed until they were clean. If one laundress washed for 25 soldiers, then a lot of hard work was necessary to properly wash clothes the old-fashioned way.

1. Fill the tub with water until it is full.
2. Place the washboard in the tub of water.
3. Stand or kneel behind the washboard.
4. Dip the dirty cloth into the water.
5. Place the wet cloth on the washboard.

6. Rub the soap on the cloth.
7. Turn the cloth over with the soapy side facing the washboard.
8. Rub the cloth against the washboard, using up and down motions.
9. Dip the cloth in the wash water to remove some of the soap. Rinse the cloth in clean water.
10. Hang the cloth on a clothesline to dry.

Lighthouse Keepers

The lighthouse keepers helped to navigate a safe passage for ships traveling along the west coast and through the Golden Gate. Each one of them worked day and night to keep the light shining. Other duties included cleaning the windows, polishing the lens, repairing machinery, and writing in a daily log. The windows and lens were kept clean so that the light would not be weakened. Polishing the lens could take eight hours a day alone.

On foggy days, many lighthouse keepers were responsible for tending the foghorn. The foghorn had to be sounded according to a schedule, which could be as often as once every 30 minutes. This meant that until the fog lifted, the keeper would get little sleep, if any at all, for several days or even a few weeks. One August, a lighthouse keeper reported only one day in the month when there was no fog. On the other hand, a keeper at Fort Point once reported only ringing the fog bell one time in a two-year span.

Lighthouses were often built in isolated areas. Getting supplies to maintain the light was a difficult task. They were only delivered as needed and usually by boat. Even the services found in the smallest of towns were not available to the keepers. Many keepers and their families kept gardens and grew their own food.

The lighthouse keepers at Fort Point lived in houses just outside the walls of the fort. To access the lighthouse on the fort, the keepers used a bridge which connected the keeper's houses and the top tier of the fort. It was considered a convenience at the time, but later was realized as a challenge because of the weather and frequent, strong winds. Sometimes, the keepers had to crawl along the bridge to get to the fort because of the strong, hurricane force winds.

Men and women served as lighthouse keepers. Even their family members had important roles. Whenever the keeper was ill, the families would help out with the daily tasks of keeping the light. Some lighthouse keepers served as rescuers also. Often, there were lifeboats to launch and lives to save due to the many shipwrecks. The life of a lighthouse keeper might have been a challenge, but the scenery and ever-changing weather must have kept it interesting.

Lighthouse Facts

Lighthouses served as landmarks in the daytime and a warning signal at night to help guide sailors through dangerous waters.

Each lighthouse is unique. For example, they are built in different styles, painted in different colors and patterns, and operated in different flash patterns. The individual flashing pattern of each light is called its characteristic.

During foggy weather, lighthouses were difficult to see from the water. Foghorns added sound to help mariners find their way. Bells, whistles, trumpets, sirens, and even cannon were used as foghorns.

The source to power the light before electricity varied from wood fires and rows of candles to lamps fueled with whale oil or kerosene.

The first lighthouse on the west coast was built at Alcatraz Island.

Lighthouse keepers were nicknamed "wickies". One of their chores was to trim the burned lamp wick so that it would not dirty the lens with smoke.

In 1886, the Statue of Liberty became the first lighthouse to ever use electricity in the United States.

Fresnel lenses (pronounced as fraynel) were invented in 1822. This French lens is like a glass lampshade made up of hundreds of prisms. The special cut glass surrounds the bulb and bends its light into a single beam, like in a car's headlight.

A lens can weigh as much as four tons.

The first lighthouse at Fort Point was completed in July 1853, then torn down the following September by the US Army. The Army used the site for the construction of the new fort.

Fort Point's lens for the first lighthouse was reassigned to Point Pinos in Monterey Bay, where it is still in use today.

Shortly after the first lighthouse was destroyed, a second lighthouse was built in front of the new fort. It was removed to make way for the granite seawall to better protect the foundation of the fort.

The third lighthouse was built on the top tier of Fort Point in 1864. It went out of service in 1934 due to the construction of the Golden Gate Bridge.

Post Sutler

The sutler was a civilian who sold goods to soldiers. He set up a store outside Fort Point. The list of items he sold is almost endless -- food, newspapers and journals, tobacco, shoe blacking, spoons and forks, clothing and many luxuries such as canned milk, fruit, vegetables and fish. The Army did not consider writing supplies important, so soldiers had to buy pens, pencils, ink wells and wooden desks from the sutler if they wanted to write letters home.

Sutlers sometimes made their own money. Usually they had metal tokens, about the size of a penny, or small cardboard "chits." The sutler's name, unit and value were stamped or printed on the "chit." So, soldiers bought with money and received change in tokens. By replacing real money with their own tokens or "chits," sutlers made sure that the soldiers had to come back and spend the rest of their pay in the sutler's store. Sometimes soldiers used the tokens as prizes in their games of poker.

Sutlers offered officers special gifts so that they would not report them for overcharging the soldiers. But this was a big risk for the officer; if he were caught, he could be court-martialed. Still, many sutlers were able to charge very high prices for their services. Some sutlers sold their goods for as much as five times what they paid for it! Because the sutler's prices were so high, soldiers often thought of these civilians as both a necessity and a nuisance.

Life for the Sutler

The post sutler at Fort Point from 1861 to 1864 was named E.B. Willitson.

Every military post could have one sutler, to be appointed by the Secretary of War.

A sutler held the job for three years, unless the commanding officer took it away because the sutler did not follow the rules.

If there were an empty building, the sutler could use it for his store. He was responsible for keeping it in good working order. If there were no building, the sutler could construct one nearby. The sutler did not receive living quarters, transportation for himself or his goods, or any military pay.

All prices had to be posted in the store.

The sutler could not allow a soldier to be in debt to him for more than 1/3 of the soldier's monthly pay (about \$4.00 in debt).

Three days before the last of every month, the sutler gave the commander a note telling all the charges he had for enlisted men. The note was presented to the men for payment. The sutler sat at the pay table with his books and accounts, and received payment from the soldiers under the watchful eye of the commanding officer.

The sutler's main competition came from the family of the soldiers. Packages sent from home contained items such as canned food, clothing, writing supplies, medicine, personal articles and family mementos.

Soldiers at Fort Point also could buy goods in stores in San Francisco. But it was difficult to shop in San Francisco because they did not have much free time, and the trip to the city was long and they would have to pay a fare on the omnibus.

Soldier Life

Every Fort Point soldier served guard duty for at least one 24-hour period every week. Day or night, eight men were stationed in the guardroom while the rest of the guard detail stood watch at sentry posts around the fort.

Drills, marching and cannon firing were a big part of a soldier's daily life. This was to remind them of the importance of discipline. They had to react quickly to orders. They had to be skilled in their duties.

Soldiers could be assigned to the gunpowder room. They had to take barrels filled with black powder down from a shelf. Then, they had to roll the barrels back and forth to make sure the powder did not form into big clumps that could not be used. A barrel could weigh 100 pounds. They wore special booties in the gunpowder room because their regular shoes were made with nails; the metal from the nails could cause a spark that might explode the gunpowder!

Privates slept 24 to a room. They used bunk beds and had to share their mattress with someone else. Like most civilians, the soldiers slept on mattresses made of straw.

All dirty clothes had to be put away in knapsacks.

The rooms had small fireplaces. They burned coal to keep the room warm. The room usually smelled from coal burning, wet clothes and dirty boots.

Soldiers had to wash their feet twice a week.

Saturday was cleaning day. The beds were cleaned, floors were rubbed, blankets shaken and mattresses supplied with new straw.

Enlisted soldiers had three days off a month.

Their food was rationed. Everyone ate at the same time. Soldiers could earn more money by cooking food for the officers.

Soldiers could buy extra supplies from a civilian called a sutler. The sutler had a store nearby.

Enlisted soldiers received \$13.00 a month.

Headquarters Department of the Pacific - San Francisco

Here are rules that the soldiers knew very well:

Instruction for General Supervision of Fort Point

1. There must be, night and day, at least two sentinels, one on the barbette battery, and one at the gate.
2. When the gates are closed and opened it must be done under the supervision of the officer of the day, in whose charge the keys must always remain.
3. The postern gate must never be opened in the morning until the sentinel on the barbette battery has examined the area near the fort, nor the main gate be opened until the grounds within musket range of the fort have been examined by a patrol.
4. During the absence of the patrol the guard must remain under arms.
5. The lower shutters must be fastened and examined by the officer of the day at Retreat.
6. No smoking will be allowed on the parade ground.
7. The soldiers will not be permitted to go on the barbette battery except on duty.
8. Proper orders will be given to prevent the destruction of the property of the engineers.

Orders for the Officer of the Guard at Fort Point

1. The Guard will be divided into three reliefs of three men each.
2. The gun detachment will be drilled twice each day at the guns from 11 to 12 A.M. and from 2 to 3 P.M.
3. The water will be pumped into the upper reservoir by the gun detachment every day.
4. The part of the post occupied by the Guard must be kept in thorough police. Its condition at the time it is turned over to the new Guard will be reported in Guard report.
5. No Federal troops in the Department of the Pacific will ever surrender to rebels.

Bugle Calls

A soldier's day was regulated by bugle calls. The bugle calls told the soldiers what to do next, just like the bell sounding at school. The following bugle calls were used in the United States during the 1860s:

- 0500 **Assembly of Buglers** - Awaken, dress in uniform, and attend to toilet. This was the first call of the day.
- 0515 **Assembly** - Assemble in parade ground at Parade Rest.
Reveille - Begin roll call, uniform inspection and receive daily orders. This call sounded a minute or two after Assembly. All were to be present except for sick and guards. Then, the sergeant made daily report to company commander, as to sick and AWOL (Absent Without Leave).
To the Colors - Raise the flag.
- 0530 **Mess Call** - Report to mess hall for breakfast.
- 0700 **Sick Call** - Report to fort hospital for treatment.
- 0715 **Fatigue Call** - Police the parade ground, living quarters, privies.
Drill - Prepare for drill assignment. This was the first call. Soldiers were to either get ready to assemble in parade ground for orders or proceed to drill position as given at morning roll call.
Assembly - Assemble in the parade, if needed.
- 1130 **Issue Call** - Receive supplies. This call was only sounded if supplies were delivered.
- 1200 **Dinner Call** - Report to mess hall for dinner. This call sounded different from the Mess Call used at breakfast and supper.
Attention - Gather in parade for afternoon detailing of duty or further drill. This call was used along with Assembly.
- 1645 **Attention** - Report for roll call for findings of court martial, general orders, lectures on condition of company, etc. This call was used with Assembly.
Retreat - End work details of the day.
To the Colors - Lower the flag.
- 1730 **Mess Call** - Report to mess hall for supper.
- 2100 **Tattoo** - Turn off lights and go to sleep.

The taps we know today first came into use during the Civil War, 1861-1865. General Dan Butterfield composed it one afternoon, whistled it to his bugler, who sounded it that night. The next day, the other buglers came and asked what that new call was, and after later clearance by commanders, it was used throughout the Army. Before this, Tattoo was the finale of the day. It was General Butterfield also who started the use of introductory calls to signify to which company a call was directed.

U.S. Army Uniform 1861

Headress

The soldier's hat was known as the "Jeff Davis" hat after Jefferson Davis, who authorized the hat while he was Secretary of War. The brim is turned up on the right side for mounted men and on the left for foot men. Light artillerymen wore the old style "tar bucket" hat instead. One black ostrich feather indicated an enlisted man; three feathers, an officer. The hat cord reflected corps color: cavalry - yellow, artillery - red, infantry - sky blue. The hat insignia was worn in front, with corps insignia and regimental number above it, and the company letter above that. The enlisted soldier's device was all in brass; the officer's corps device was of gold embroidery, and the regimental number and company letter in silver embroidery.

Coat

The frock coat of dark blue cloth was authorized for all but fatigue duty. All the trim was in the color of the corps. Enlisted men's and company officers' coats were single breasted, while field and general officers wore double breasted coats. The chevrons for rank distinction and service for enlisted men were as follows:

Sergeant Major	three bars and an arc, in silk	
Quartermaster Sgt	three bars and a tie, in silk	
Ordnance Sgt	three bars and a star, in silk	
First Sergeant	three bars and a lozenge, in worsted	
Sergeant	three bars, in worsted	
Corporal	two bars, in worsted	

Service stripes, one for each five years of "faithful service," ran diagonally from seam to seam just above the point of the cuff, in corps color.

Trousers

The uniform orders of 1861 authorized trousers of dark blue cloth for all enlisted men except those of the light artillery companies. However, the orders of 1857 were generally followed on this point, as they authorized trousers of sky blue cloth for all enlisted men including light artillerymen. Sergeants wore one stripe 1 1/2 inches wide in corps color down the outer seam of the trousers. Corporals wore a 1/2-inch wide stripe in corps color. Ordnance sergeants wore a 1 1/2-inch stripe in crimson. Privates wore no stripes at all.

Sword

All foot non-commissioned officers (NCO) were authorized to carry the regulation NCO sword. All NCOs of the foot artillery carried the Foot Artillery sword, model 1833. Privates carried the standard musket bayonet and other like accessories used by foot men.

Army Food

Soldiers took turns working in the post kitchen. Here are two "rules" they were expected to follow:

The Cook's Creed

"Cleanliness is next to godliness, both in persons and kettles; be ever industrious, then, in scouring your pots. Much elbow grease, a few ashes, and a little water are capital aids to the careful cook. Dirt and grease betray the poor cook, and destroy the poor soldier; whilst health, content, and good cheer should ever reward him who does his duty and keeps his kettles clean. In military life, punctuality is to be exact in time. Be sparing with sugar and salt, as a deficiency can be better remedied than an over-plus."

(U.S. Army Cookbook, 1863)

Kitchen Philosophy

"Remember that beans, badly boiled, kill more than bullets; and fat is more fatal than powder. In cooking, more than anything else in this world, always make haste slowly. One hour too much is vastly better than five minutes too little, with rare exceptions. A big fire scorches your soup, burns your face, and crisps your temper. Skim, simmer and scour are the true secrets of good cooking." (U.S. Army Cookbook, 1863)

Menus

A typical daily menu for soldiers looked like this:

Breakfast at 0530 Baked meat hash, with onion gravy Coffee Bread	Breakfast at 0530 Codfish hash Coffee Bread
Dinner at 1200 Vegetable Soup Baked beans and bacon Mashed potatoes and bread Boiled mush, with syrup	Dinner at 1200 Pork and Cabbage Potatoes Rice pudding Bread
Supper at 1730 Stewed dried fruit Tea Bread	Supper at 1730 Boiled rice and syrup Coffee Bread

Napoleon 12-Pounder Field Cannon

The model 1857 Napoleon field cannon at Fort Point was manufactured by Cyrus Alger & Co., Boston, Massachusetts during the Civil War. This cannon is called a 12-pounder because its cannon ball weighs 12 pounds.

The cannon was attached to a limber, or wheeled ammunition chest, and drawn by six horses. Though this type of cannon was not typical of a seacoast fort, its loading and firing procedures were very similar to the large cannon of Fort Point.

Cannon are dangerous weapons. During each drill, the cannon would be treated with caution and respect. Eight soldiers worked together to fire the cannon. Carelessness on the part of one soldier could be disastrous for the entire crew.

Cannon Drill Rules

These rules were very familiar to the soldiers:

Never sacrifice safety or proper procedure for speed. During a drill, emphasis is on accuracy of procedure, and following the proper steps in their proper order. Speed comes after constant drilling.

During the drill, never step in front of the muzzle or over the trail of the cannon.

Always use the haversack, with the flap closed, to transport the ammunition from the limber to cannon. Sparks could easily set off exposed powder.

Always use the worm (corkscrew) to remove ammunition from the cannon barrel. Never reach down the barrel with your hand.

Protecting the Bay

This activity will help you imagine a bit about daily life in the 1850s. You will create a bay area with towns, commerce, and the necessary protection. If you are working in groups, each person in the group must agree at each step along the way.

A bay opens into a large ocean. Many towns and settlements are on the shore and nearby. In different ways, all of the towns depend on each other.

1. Draw a map of a bay on a large sheet of paper.
2. Give the bay and ocean a name. Label them on the map.
3. Give each of the following places a name on the chart below.

Name of Town	Description of Town
	A town that has a silvermine
	A town that has a dairy farm
	A town that has a river
	A town that has a wharf
	A town that is far north
	A town that is far south
	A town on the coast
	A town that supplies lumber
	A town that has a goldmine
	A town that is by the bay
	A town that has a rock quarry

4. Decide the best location for each of the towns. Mark their names in their locations on your map.
5. Discuss the supplies that are exported from and imported to your bay. The exported supplies are shipped to places outside the bay. The imported supplies are brought from places outside the bay. These supplies are usually items that are not found locally. List them on the chart below.

Exported Supplies	Imported Supplies

6. Discuss the major transportation routes on the water and on the land.
7. The government has decided that a fort must be built to protect your entire bay from ships that might enter the harbor and attack. Select the best location to build your fort.
8. Assign symbols to the legend below. Mark them on your map.

Symbol	Legend
	The best location for a fort
	The towns that receive supplies directly from ships
	The towns that do not receive supplies directly from ships
	The routes on land that are used to transport supplies
	The channel for ships traveling into the bay
	The channel for ships traveling out of the bay

9. Compare your map with those of your classmates. Discuss why different decisions were made.
10. Reexamine your map and determine if there are changes you would like to make. List the changes you make and the reasons for the change.

Changes	Reasons

Designing the Fort

The government agrees on the location of your fort. Now you are responsible for designing the fort. You must decide the materials you will use, where these materials are found, the size of your fort, and the floor plan.

1. Review the following vocabulary words.

<p>Barbette Tier - the top level of a fort where cannon are mounted</p> <p>Casemates - large, bombproof rooms where cannon are mounted</p> <p>Cistern - a tank to store emergency water, often placed underground and protected from potential pollution</p> <p>Magazine - a room for storing gunpowder</p> <p>Parade - the center where soldier report for duty</p> <p>Sally Port - a protected entrance to a fort</p> <p>Seawall - a strong wall to protect a fort against rough ocean waves</p> <p>Quarters - rooms where soldiers sleep</p> <p>Embrasures - openings in walls through which cannon could fire</p> <p>Detention Barracks - a room for soldiers who misbehave</p>

2. Review your map.
3. Which materials are available and where are they located on your bay map?

Materials	Locations

4. Are there materials that you would like to use that are not available in your bay area? Where will you get these materials?

Materials	Locations

5. Which of these materials will you use to build your fort.
6. Determine the safety concerns that you must consider in your fort's design?
7. Design a floor plan for your fort on a large piece of paper.
 - a. Label each room in your floor plan. If your fort has more than one floor, include a floor plan for each floor.
 - b. Use at least four of the vocabulary words in your plan.
 - c. Mark the length and width of the site of your fort.
 - d. Mark the length and width of the fort building.
8. Review your list of materials. List those that you use will construct your fort and color code each material.

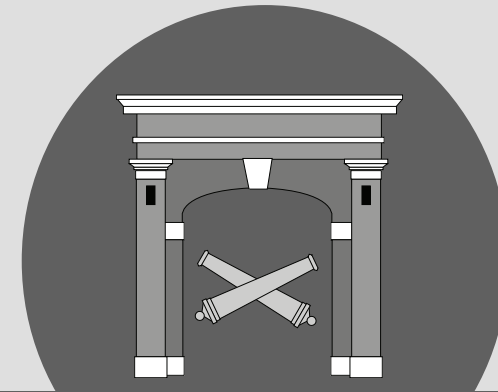
Materials	Color Key

8. Use your color key to indicate where you will use each material on your floor plan.



Fort Point National Historic Site
P.O. Box 29333
Presidio of San Francisco, CA 94129-0333

www.nps.gov/goga/education




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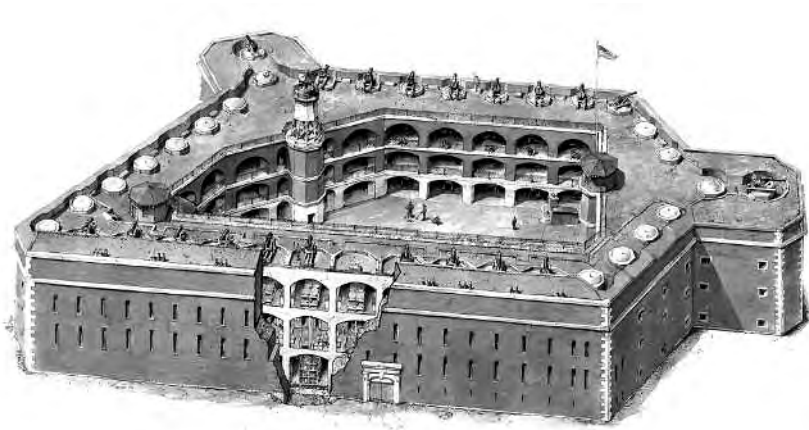
FORT POINT NATIONAL HISTORIC SITE

Golden Gate National Parks



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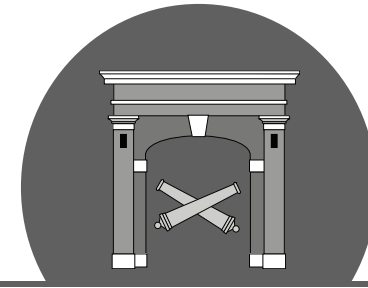


Fort Point: Still Standing Watch

Gold was discovered in California in 1848. People came from all over the world, hoping to make their fortunes by mining for gold. Many of these people made their homes in the towns surrounding San Francisco Bay. These areas became very important places for trade and commerce. The United States Army built Fort Point in the 1850s to protect these towns from enemy ships.

Fort Point is the only seacoast fort of its kind on the West Coast. The massive fort is made of brick and granite. It has only one entrance - the sally port, guarded by two sets of iron-studded double doors and rifle slits along either side. Inside the fort are walls about seven feet thick. Fort Point could hold 550 soldiers and 126 cannon.

A community of people also lived or worked inside or near the fort - soldiers, laundresses, storekeepers, engineers, hospital nurses, brick makers, and families of the soldiers. The soldiers were ready in case of attack, but no enemy ever came. Fort Point looks very much like it did when it was completed during the Civil War in the 1860s. In 1970, Fort Point became a National Historic Site. Come inside and make the fort's history come alive!



ARTILLERY, BRICKS, & CO.

FORT POINT NATIONAL HISTORIC SITE

Golden Gate National Parks

The Golden Gate National Parks serve as one of the nation's largest and most inspiring outdoor classrooms. From fragile indigenous habitats to historic landmarks, ancient redwood groves to dramatic coastal preserve, the park's value as an urban educational resource is unsurpassed. Deeply committed to young people, National Park Service and Golden Gate National Parks Conservancy staff partner with educators to design inquiry-based learning linked to school curriculum and education standards.

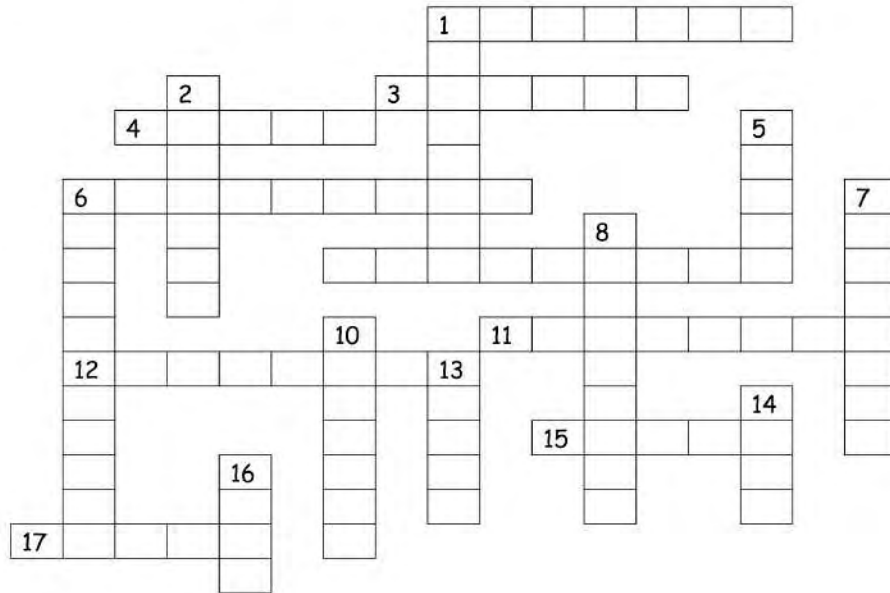
Crissy Field Center, located on the Presidio of San Francisco, is a partnership project of the Golden Gate National Parks Conservancy and the National Park Service. The Center affirms and strengthens the NPS's commitment to quality K-through-12 education. The Center offers multicultural programs that actively engage us with our environments and promote collaborations in building a more sustainable and environmentally just society.

www.nps.gov/goga/education

www.crissyfield.org



Fort Point Crossword Puzzle



Vocabulary Words

Bond	Garrison Gin	Meat Hash	Sally Port
Brass	Gold Rush	Mess	Stewards
Brick	Gorge	Private	Straw
Cannon	Granite	Quarters	Union
Casemates	Gunpowder	Quinine	

Across

1. Used to treat fevers
3. Large, iron weapon
4. Made of clay, water and sand
6. Used to fire cannon
9. Bombproof rooms for cannon
11. Event in California which lead to the construction of Fort Point
12. Hospital workers
15. Land facing side of the fort
17. Northern states during the Civil War

Down

1. Soldier's bedroom
2. Strong, heavy rock
5. Shiny material used to decorate the uniform
6. Large, triangular pulley used to lift cannon
7. Breakfast food for soldiers
8. Entrance to a fort
10. Lowest ranking soldier
13. Material used to fill mattresses
14. Military word for the dining area
16. Patterns of bricks

1 Discussion

Location: outside in front of the fort

During your visit to Fort Point, you will be asked to think about the design of the fort. Even before you look inside, you may have ideas about how to design a fort. One of the first things building designers think about is why people need the building they are creating. Can you name 3 reasons people build forts?

2 Activity

Location: outside in front of the fort

Another thing that building designers must think about is how people will use their building. What do people do in a fort? What types of rooms and spaces does a fort need?

Activities in a fort:

Rooms and spaces in a fort:

3

Activity

Location: outside in front of the fort

Take a careful look at the outside of the fort. Look at all the different shapes of windows. In the space below draw each window shape.

Each window shape has a different function. Can you use your ideas about forts to label each window shape with one of the functions below?

Window for bedroom

Rifle slit (window that soldiers would shoot their gun through)

Cannon window

It's now time to enter the fort and have a look around.

When you get into the fort, take a look at the windows from the inside. Did you label the windows correctly?

Please find one of the staircases and carefully climb up to the very top level.

18

Activity

Location: first level

Your visit to Fort Point is almost over but before you leave it is important to think about what it was like for the people who lived and worked in Fort Point. Close your eyes while your group leader reads the paragraph below.

"Imagine that you are in Fort Point in the year 1865 - over 100 years ago! What time of day or night is it? What are you wearing? What colors do you see? Are you alone or are other people there with you? What are you doing? What are the people around you doing? What can you hear? Imagine that someone is practicing shooting a cannon. The "boom" from the cannon runs through your body like thunder. What do you smell? Are the smells pleasant or unpleasant? How does this place make you feel? Open your eyes now."

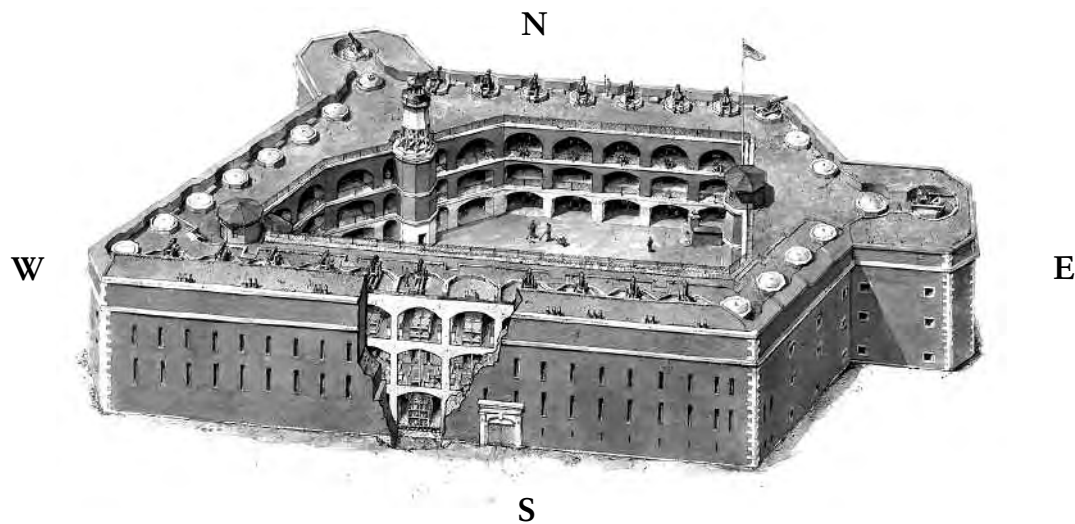
Think back on your visit to Fort Point today. What one thing surprised you the most? What do you think you will remember after you leave here?

Thank you for visiting.

17 Discussion

Location: first level

You have explored all four levels of Fort Point and learned a lot about the fort. You have learned how building designers create rooms and spaces for different activities.

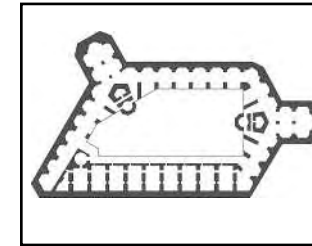
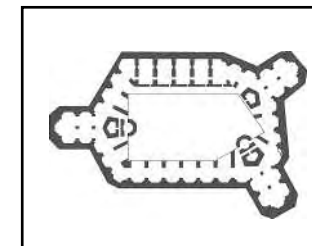
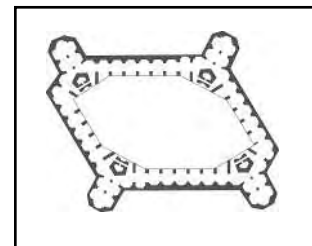


Look back at the list of rooms and spaces you created in Activity 2 of this booklet. What things would you add to your fort? What things would you change? What things did you include in your fort that should have been included in Fort Point but weren't?

4 Activity

Location: top level

Take a look around. Notice the shape of the fort. Circle the shape that looks the most like the shape of Fort Point.



Why would the engineers who designed the fort decide on this unusual shape?

5 Discovery

Location: top level

How many circular cement structures are on this level of the fort?

Can you guess the original purpose of these structures?

6 Discussion

Location: southwest side of the top level

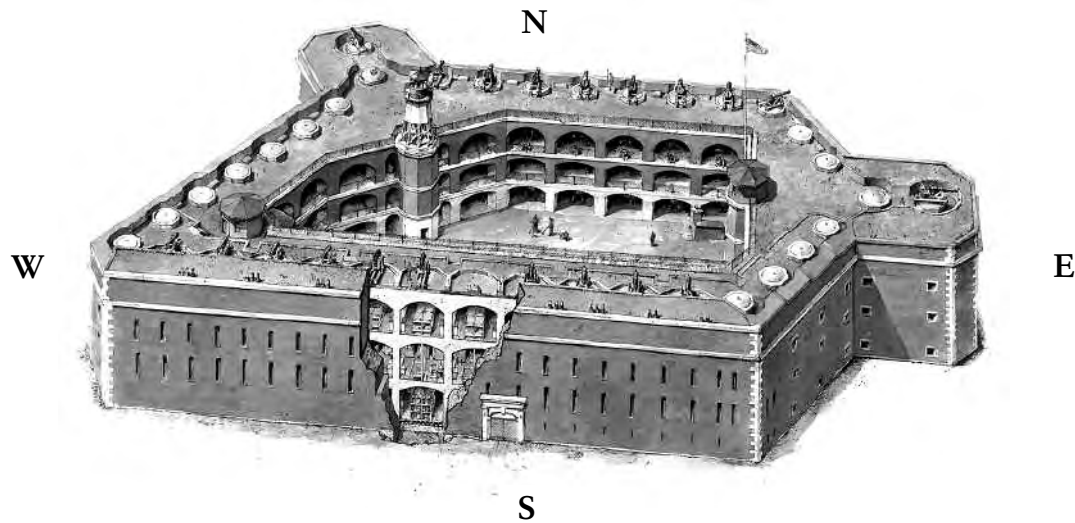
Notice the cement block here. How is it different from the other cement structures? This block was part of something that used to be here. Look around inside and outside the fort for clues to help you guess what was here.

Can you guess the original purpose of the cement block?

7 Discovery

Location: top level

Take a look at the drawing below. This is a map of the top level of the fort.



Draw lines connecting the spaces with the list of words:

Lighthouse
Bridge to Lighthouse
Keepers' Houses

Cannon Mounts
Stairwell

It is now time to walk down the cast iron southeast stairs to the level below. Be careful!

15 Discussion

Location: Sally Port

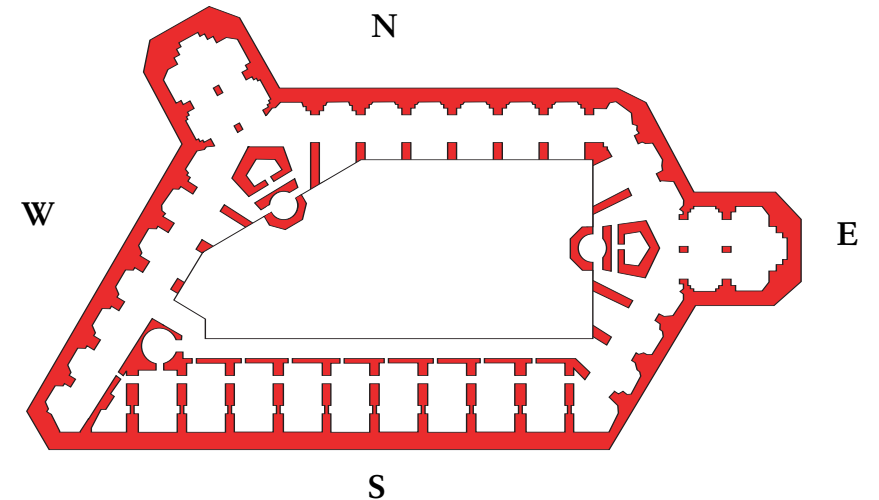
This is the entrance to the fort. Notice the two sets of doors. Name at least 4 characteristics of these doors that make them different from the doors at your school. What purposes do you think these characteristics serve?

16 Discovery

Location: first level

Take a look at the drawing below. This is a map of the first level of the fort.

Draw lines connecting the spaces with the list of words: (You'll need to explore some of the rooms you haven't seen yet!)



Gunpowder Magazine
Sally Port
Parade Ground

Casemates
Guard Room

12 Activity

Location: second level

Compare the map of the second level of Fort Point with the fort you designed at the beginning of this program. What spaces did you include in your fort that are also here on the second level of Fort Point? List them below:

It is now time to walk down the stairs to the first level.

13 Discussion

Location: southwest end of the first level

Look carefully at the granite staircase. Can you see any evidence that the stairs are supported from beneath? What supports the staircase?

14 Discovery

Location: the Powder Magazine on the southwest side of the first level

Explosives that were used for cannon balls were stored in this room. What are 3 special characteristics of this room that made it safer to store gunpowder?

Soldiers were not allowed to wear their shoes while in this room. Can you guess why they had to take off their shoes?

8 Discussion

Location: southwest end of the third level

Peek inside the enclosed room on this side of the building. This is the most secret place in the fort. Would you want to go in there?

Notice what the room looks like. Are there doors? How many? Are there windows? Is it dark or light?

Can you guess what this room was used for?

9 Discovery

Location: third level

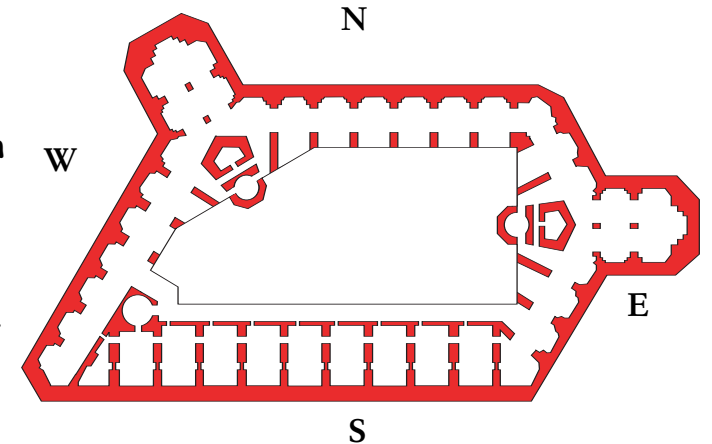
Take a look at the drawing below. This is a map of the third level of the fort.

Draw lines connecting the spaces with the list of words: (You'll need to explore some of the rooms you haven't seen yet!)

Casemates
Stairwell

Sleeping Quarters for Soldiers
Detention Barracks (Jail)

End your discovery in the sleeping quarters. Look for the exhibition case with hats and swords. The wooden box for your next activity will be nearby.



10 Activity

Location: *Sleeping Quarters*

Building a fort with bricks takes a lot of planning and skill. The bricks must be laid so the fort will be very strong.

Find the wooden box and take out the bricks. Work with your group to lay the bricks in a pattern that could be used to build a very strong wall.

Draw your brick pattern here:

Now examine the walls of the fort. How many different brick patterns can you see? _____

Do any of your patterns look like ones the builders created?

What skills do you need to know when building with bricks?

Activity

Location: *Sleeping Quarters*

Fort Point and many other forts use arches in their designs. Look around now to see if you can spot any arches.

Now take out the building pieces for the arch. Work with your group to build your own arch.

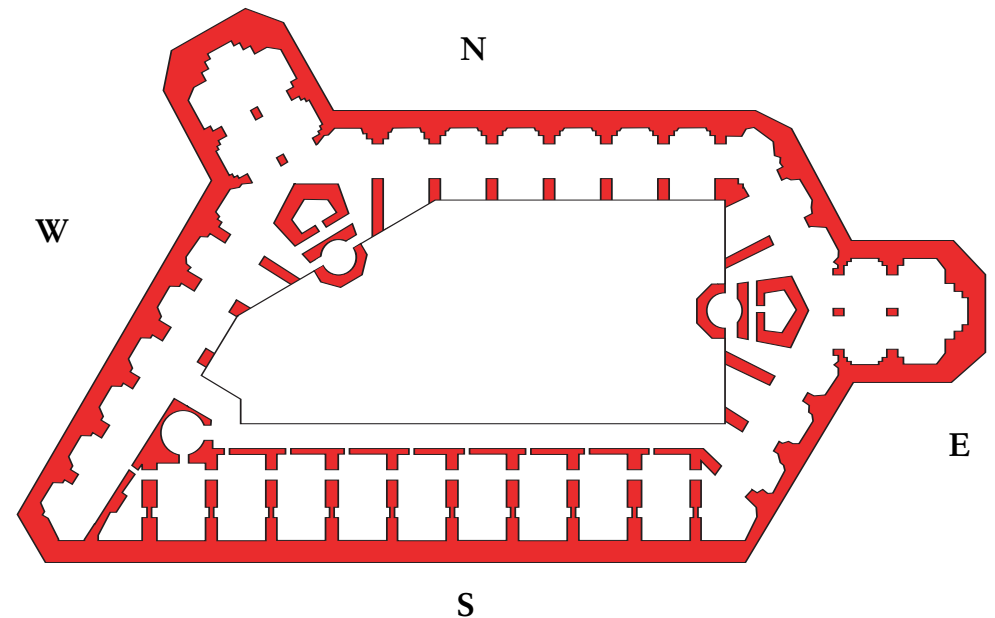
Why do designers and builders use arches in their buildings?

Please put your arch and bricks back inside the wooden box. It is now time to walk down the stairs to the second level. Don't Run!

11 Discovery

Location: *second level*

Take a look at the drawing below. This is a map of the second level of the fort.



Draw lines connecting the spaces with the list of words: (You'll need to explore some of the rooms you haven't seen yet!)

Officers' Quarters
Mess Hall

Hospital
Casemates