

Cape Lookout Lighthouse



Fourth Grade Curriculum Guide



Teachers' Guide to Cape Lookout Lighthouse Curriculum

Welcome,

This program is designed to engage students in learning North Carolina coastal area history through hands-on activities. Some activities require reading and writing skills, while others involve physical activity. Any written materials included here may be freely copied.

If all the requirements listed at www.nps.gov/caloc/planyourvisit/academicfeewaiver.htm are completed, the class will be eligible for an Educational Fee Waiver. This fee waiver provides free access to the Cape Lookout Lighthouse. It does not cover any other costs.

There are 3 pre-site visit activities, 2 on-site activities (one of which is climbing the lighthouse), and 3 post-site activities. Activity quizzes are also included. There are to be given before beginning the pre-site visit materials and after completing the post-site visit materials.

This program is not a curriculum based program although it does meet numerous curriculum standards. Some of the standards that are met by these activities are:

4th grade social studies

4.H.1.3, 4.H.2.1, 4.G.1.1, 4.G.1.3, 4.G.1.4, Ex. 4.G.1.3, Ex. 4.G.1.4, EX.4.G.1.5

4th grade language arts

Language: 4a, 4c,
Reading for Literature: 1, 2, 3, 4, 5
Reading Foundational Skills: 3a, 4b
Reading for Informed Text: 4, 10
Writing: 2b, 2d, 4, 6, 7, 8, 9
Speaking /Listening: 4

4th grade math

4.OA.2, 4.MD.2, 4.G.1

Please contact the Cape Lookout National Seashore with any questions about these materials which cannot be found answered on the website www.nps.gov/caloc.htm

Cape Lookout Lighthouse Curriculum

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Cape Lookout Lighthouse Quiz

- 1) **Cape Lookout Lighthouse** is located on _____
- a) Harkers Island
 - b) South Core Banks
 - c) North Core Banks
 - d) Bodie Island
- 2) **This area is called the Graveyard of the Atlantic because there have been so many shipwrecks along this coast.**

True

False

- 3) **What is a daymark?**
- a) A mark that can be seen on a paper
 - b) A check mark on a paper
 - c) The painted pattern assigned to a Navy ship
 - d) The painted pattern assigned to a lighthouse



- 4) **The Fresnel lens was not very useful.**

True

False

- 5) **The second Cape Lookout Lighthouse was completed in _____.**

- 6) _____ is the series of light and dark periods emitted by a lighthouse.

- a) Night light
- b) Flash Dance
- c) Flash Pattern
- d) Light Pattern

7) Where did Lighthouse Keepers spend most of their time while in the lighthouse?

- a) Gallery
- b) Watch room
- c) Lantern room
- d) Landing

8) How many steps does Cape Lookout Lighthouse have?

9) Lighthouse Keepers had many jobs to do. List 3 jobs other than keeping the light burning.

1. _____

2. _____

3. _____

10) Cape Lookout Lighthouse is protected by Cape Lookout National Seashore

True

False

11) Where did the Lighthouse Keepers live?

- a) Hotel
- b) Keeper's Quarters
- c) Inside the lighthouse
- d) Tent

12) What is your favorite lighthouse style?



Lighthouse History

When people decided to explore the waters by boat, they realized they needed to have some guidance to return home safely. These guides are called navigational aids. Stacking rocks into large piles made a good day time navigational aid. But, rock piles cannot be seen at night. So, friends built bonfires on high places to guide the sailors home.

As adventurous spirits drove them farther and farther away from home, bigger and better navigational aids were needed. Sometimes Mother Nature provided navigational aids, like volcanoes, but most navigational aids had to be built.

Whether natural or man-made, these aids were essential to the safety of the ships. The aids not only provided directions for coming and going but also served as warnings. Since the early ships were wind powered, they could easily be pushed into dangerous rocks. If the captain had enough warning, he could sail around the hazard areas. With this in mind, navigational aids were built all along the coast especially near dangerous waters.

Starting with rock piles and bonfires, navigational aids evolved into lighthouses. A lighthouse is a tower with a bright light on top. Many lighthouses were connected to the houses where the keepers lived.

Lighthouses serve two main purposes: one, as a navigational aid and two, as a warning to boats that they were near dangerous areas.

Pharos of Alexandria in Egypt is the first lighthouse ever built according to recorded history. Records tell us that it was the tallest lighthouse ever constructed and was completed around 280 B.C. At 450 feet, it was as tall as a 45 story skyscraper. A large, open fire at the top was the light. At night, they believe that the light could be seen for thirty miles. During the day, it produced a column of smoke.



Today, we think of lighthouses as tall conical towers, but in reality lighthouses come in all sorts of shapes, sizes, and colors. The location of the lighthouse plays a vital role in its shape and size. If it was in a flat area, it needed to be taller than a lighthouse that could be built on a high cliff. Some lighthouses are round, some are square, and some are octagonal. They might be standing alone or they might be attached to a keeper's house. Some lights are even standing on top of large steel towers built in the water.

When the lighthouses were built, they were constructed with whatever materials were most readily available. Some are made of wood, while others were made of brick, stone, concrete, steel, cast iron, or even tabby (a mixture of shells, lime, sand, and water). They were designed to fit the local climate and geography. Each lighthouse is unique.

But, from a distance lighthouses can look alike. Imagine that you are a captain sailing along the east coast. You see a tall round lighthouse. Then as you sail 40 miles down the shore you see another tall white lighthouse. How would you know where you were? That would be very confusing.

That is what sailors saw along the Virginia and Carolina coasts in the 1860's. Lighthouses were built to help with the shipping trade of the time, but they all looked alike. So, the Lighthouse Board (those in charge of the lighthouses at the time) issued an order to have each lighthouse painted with a different color or pattern. These identifying designs are called "daymarks." The lighthouses along the Outer banks of North Carolina are some of the best examples of daymarks that can be seen today.



Imagine, again that you are a sea captain sailing along the east coast during the day. Now that the lighthouses have daymarks, it is much easier to know where you are. But, what about nighttime, the most dangerous time to navigate? All lighthouses had a single constant beam of light that could not be identified at night. Mariners had to know exactly where they were or they would end up crashing into the shoals (shallow waters).

Sometimes a group of two or three lighthouses were built together, but that was expensive. Eventually groups of lights were mounted on revolving frames making it possible to tell the lighthouses apart by the pattern of flashing lights. This was called a flash pattern.

Each lighthouse was assigned a specific flash pattern so that they could be easily identified at night. With these characteristics (the daymark and the flash pattern), each lighthouse could be identified during the night and during the day.

As technology improved, flash patterns became unlimited. Rotating frames were developed to assist in this process. Some rotating frames had black out boards (boards used to block the light so it would “disappear”).

Some lighthouses had a special lens called a “Fresnel lens” that revolved around the light. Some of these lenses were built so that the glass would focus all the light in one spot, making it brighter. The invention of the Fresnel lens was very important since it made the light brighter so it could be seen much farther away.

Another way to tell lighthouses apart is by their light color. Although most lighthouses have white lights, some use red or green lights or combinations of color.

Colors and flash patterns are great for navigation when they can be seen, but what happens when they can’t be seen? Some coastal areas can have dense fog banks. You can not see a distant light if the fog is thick. So now what? Luckily some lighthouses developed horns to warn ships by sound. The first “fog horn” was a cannon, but later they used whistles, sirens, and bells. Again each lighthouse was assigned a distinct pattern. This became a much needed addition especially in heavy fog areas.

Lighthouses have been around for hundreds of years. Until recently, they were vital to shipping and they served their purpose well. But, most ships today have their own navigational aids, like computers, depth finders and Global Positioning Satellite (GPS) systems. With this new technology, lighthouses are not really needed, except by smaller boats. Today, lighthouses have become popular places to visit as people try to understand what life was like more than 100 years ago.



Pre-Site Visit

Activity #1: What is a Lighthouse?

Objectives: The Student will understand the need for lighthouses and will be able to identify the structural elements of a lighthouse.

NC Standard Curriculum:

Fourth Grade: Social Studies

4.H.2.1, 4.G.1.4

Fourth Grade: Language Arts

Language: 4a, 4c

Reading for Literature: 1, 2, 3

Reading Foundational Skills: 3a

Materials:

- 1) Narrative entitled “What is a Lighthouse”
- 2) Vocabulary List
- 3) Label the Lighthouse worksheet

Procedure:

- 1) Have students read the narrative “What is a lighthouse?”
- 2) Discuss any unfamiliar terms
- 3) Have students fill out lighthouse worksheet
- 4) Go over answers

What is a Lighthouse?

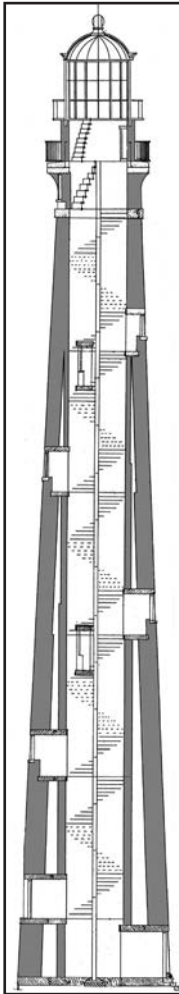
A lighthouse is a tower with a very bright light at the top called a **beacon**. The beacon is used by sailors to help guide their ships at night.

Lighthouses come in all shapes and sizes. They are usually located on the coast, on islands, or in the middle of busy harbors. They guide ships in and out of inlets as well as warn sailors about dangerous **shoals** (rocky or shallow places). There are so many dangerous shoals along the Outer Banks of North Carolina that this area is called the **Graveyard of the Atlantic**.

Some lighthouses are tall and some are short. Some are square and some are **conical** (cone shaped). Some are attached to **Keepers' Quarters** and some stand alone. Most have distinct **daymarks** (colors and patterns used to identify the lighthouse), but some don't.

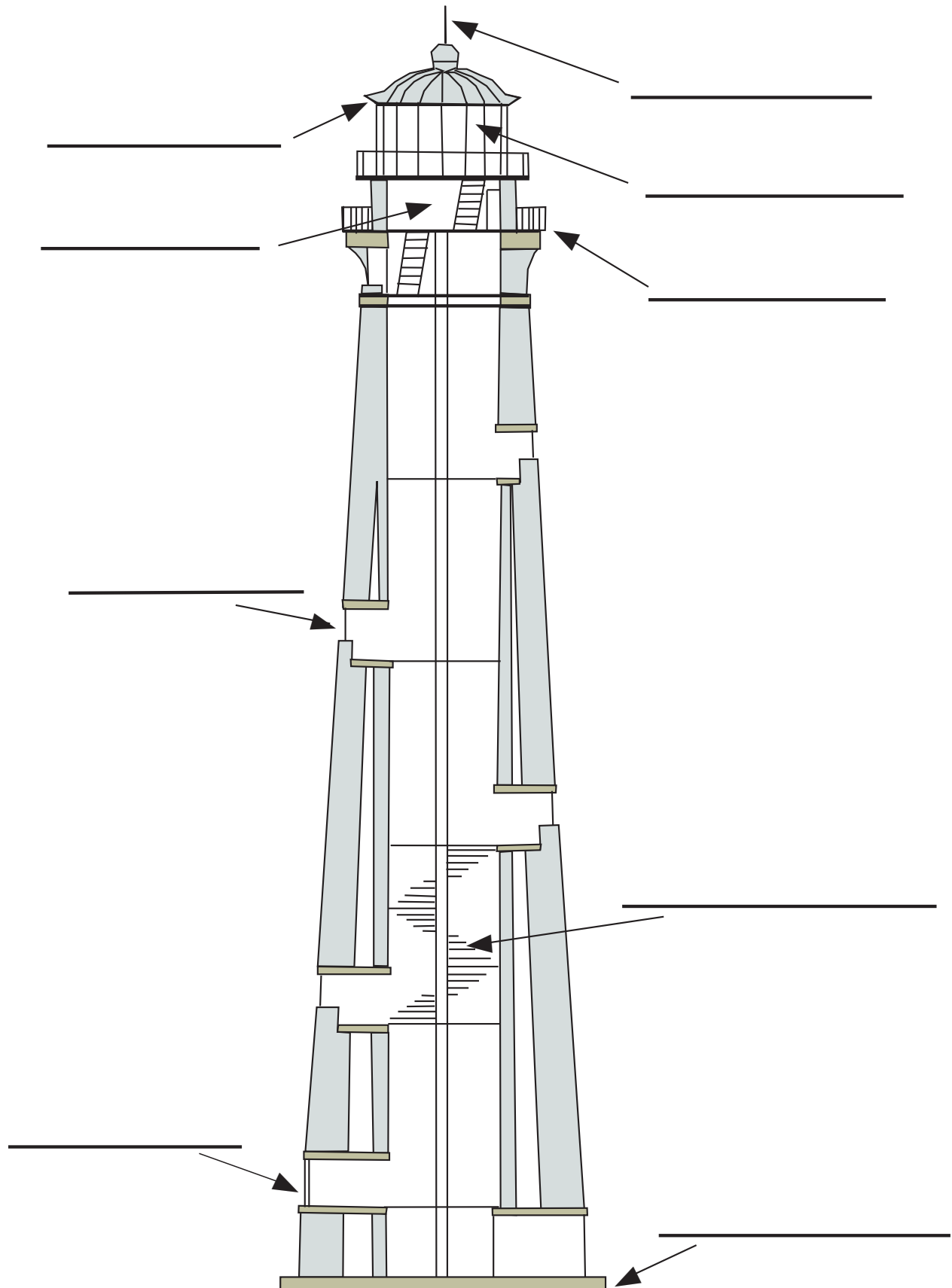
Each lighthouse is unique but they all serve the same purpose and, therefore, have many things in common.

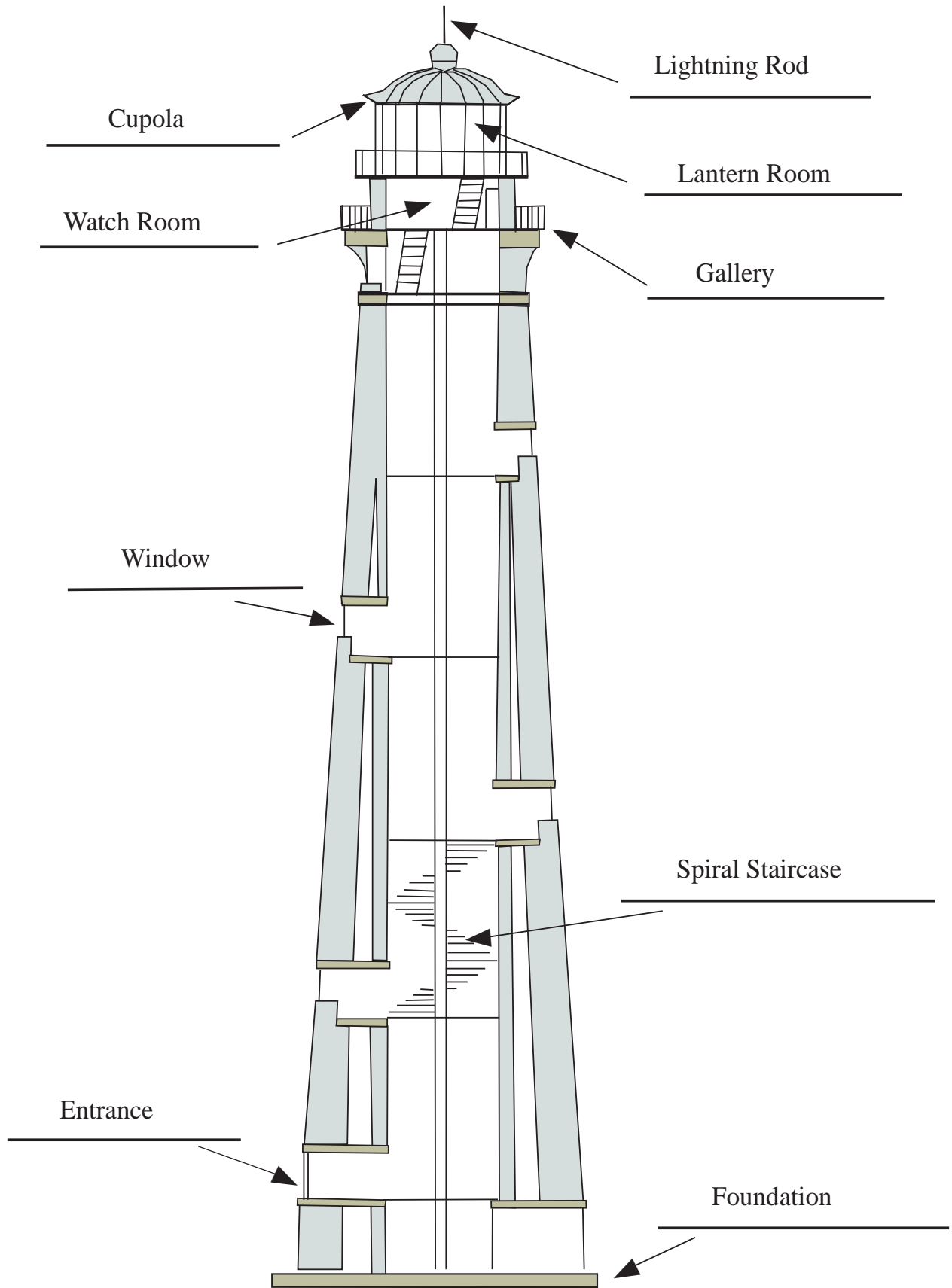
All lighthouses have a **beacon** (light) at the top. The beacon is housed in a room called the **lantern room** which has large windows all around and is topped with a domed roof called a **cupola**. A **spiral staircase** (or sometimes a ladder) provides a way to climb to the top of the tower. Most lighthouses also have a room for storage called a **service room** and **watch room** where the keeper kept watch on the light making sure it did not go out. Nearly all lighthouses include a small walkway around the outside of the tower called the **gallery**, a **lightning rod**, **windows**, and of course an **entrance**. But, one of the most important part of a lighthouse is its **foundation**. Without a sturdy foundation, the lighthouse would surely fall over.



*** Use the vocabulary words (the ones in bold print) to label the lighthouse on the following page.***

*** The "Vocabulary List" can help with definitions.







Pre-Site Visit

Activity #2: Which One is Which?

Objectives: The students will learn additional vocabulary related to lighthouses and how these towers differ from each other.

NC Standard curriculum:

Fourth Grade: Social Studies

4.H.2.1, 4.G.1.4, 4.G.1.3

Fourth Grade: Language Arts

Language: 4a, 4c

Reading for Literature: 3, 4

Reading Foundational Skills: 3a

Reading for Informed Text: 4

Materials:

- 1) Narrative entitled “Which One is Which?”
- 2) Photos of various lighthouses
- 3) Paper
- 4) Colored pencils, markers or crayons

Procedure:

- 1) Have students read narrative entitled “Which One is Which?”
- 2) Let students see various types of lighthouses (use provided photos or have them look them up on the internet)
- 3) Once they see several types of lighthouses, let them design their own.

Which One is Which?

Lighthouses have been used to guide sailors on their journeys for thousands of years. At first there were only a few here and there, but as time wore on more and more were being built, especially along the Outer Banks. After the **Fresnel lens** was invented by Augustin-Jean Fresnel (for more information see reference material), lighthouses were often placed about forty miles apart along the coast, since the light could be seen for about 20 miles. The sailors were able to see the light from one lighthouse for about 20 miles after they sailed past it. When they could no longer see that light, they would start to see the light from the next lighthouse. This was a tremendous help to these sea-going ships.

But, if there were lighthouses every 40 miles, how could they tell which lighthouse was which? That is a very good question!

Lighthouses come in all shapes and sizes. The location of the lighthouse is often what determined the shape and size needed to do the job. If the lighthouse were out in the ocean, then it needed to be built up on some sort of stilts. If it were placed on high cliff, the lighthouse did not need to be very tall. If it were built in a flat area and needed to be seen far away, it needed to be really tall.

Lighthouses were often built with whatever materials that were available. Some lighthouses were built out of wood, some used bricks, some used rocks, and some used metal. Some were even made from ships. They were in all different shapes and sizes. They were skeletal, octagonal, schoolhouse, conical and numerous other shapes. (look at lighthouse photos to see some of the different styles.)





This made it easy to tell one lighthouse from another, but in some places they are all the same shape, like the ones along the Outer Banks. Most of the lighthouses along the North Carolina coast were **conical** shaped. This made it hard to **navigate** this stretch of the coast because all the lighthouses looked the same. In 1873, the U.S. **Lighthouse Board** decided that each lighthouse would be painted with a different **daymark** (pattern). The Cape Lookout Lighthouse was assigned its distinctive black and white diagonal checkerboard pattern. Cape Hatteras was assigned the black and white candy cane pattern.

Once the lighthouses were painted, the **mariners** were able to tell exactly where they were and navigate past the hazards.

This of course only worked during the day time. What about nighttime? Another important question.

Even though the lighthouses looked different during the day, they looked the same at night. They all had a **fixed light** (steady, non-flashing) burning, making it hard to identify at night. To fix this problem the Lighthouse Board came up with a plan. Each lighthouse was assigned a **light characteristic**. Some lighthouses were given colored glass so that the light would look red or green. Most of the lighthouses were assigned a flash pattern. **Flash patterns** were set up so that there would be a period of light, say 15 seconds, then a period darkness, say 30 seconds. The light would shine for 15 seconds, then be off for 30 seconds. This system has thousands of variations and each lighthouse had its own identifier.

Daymarks during the day and light characteristics during the night led to easier navigation for the **mariners**, day or night.



Schoolhouse Style

Holland Harbor, Michigan

Cape Lookout National Seashore – Cape Lookout Lighthouse

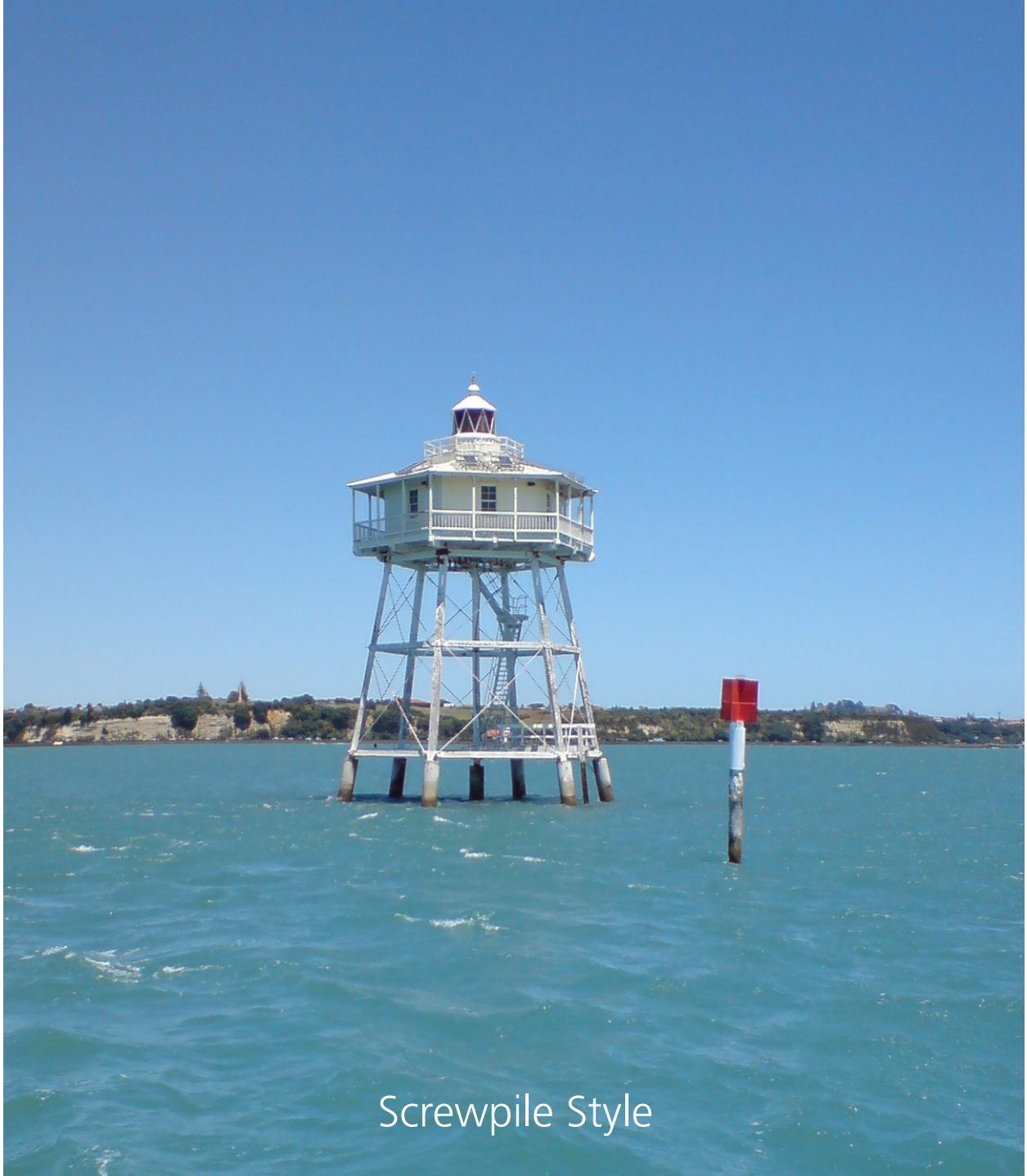
1. 13



octagonal style
Anapa, Russia



Lightship style
Calshot Spit, England



Screwpile Style

Waitemata Harbour, New Zealand



Conical Style

Cape Lookout, North Carolina



Pre-Site Visit

Activity #3 Make a Flash Pattern

Objectives: Student will understand how lighthouses flashed prior to the advent of electric.

NC Standard Curriculum

Fourth Grade: Social Studies

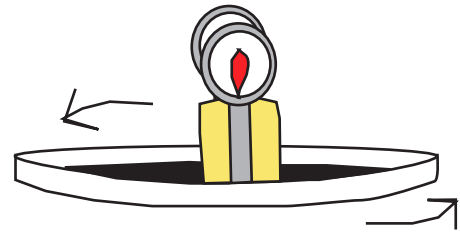
4.G1.4, 4.G.1.3, Ex.4.G.1.4

Materials:

- 1) 1 Styrofoam craft ring (9-12 inches diameter)
- 2) 2 magnifying glasses with handles (6 inches tall)
- 3) 1 thick candle (approximately 2 inches shorter than magnifying glass)
- 4) flashlight
- 5) clock with second hand
- 6) sample light list
- 7) narrative on “Flash Lighthouse Flash”

Procedure:

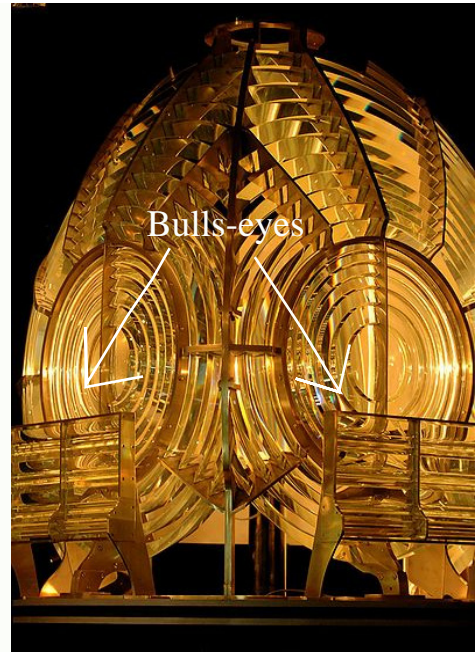
- 1) Have students read narrative on Flash patterns
- 2) Place the Styrofoam ring on flat surface
- 3) Press the handle of one magnifying glass into the top of the ring so that it stands on its own
- 4) Turn the ring around and stick the other magnifying glass in the ring directly opposite the first magnifying glass
- 5) Position the candle in the center of the ring so that the wick is directly in line with the center of each magnifying glass
- 6) Light the candle and turn out lights (darken the windows if necessary)
- 7) Slowly rotate the ring around the candle and watch for the light on the wall. A spot should appear to travel along the wall as the ring is slowly rotated. The spot is created by a focused beam of light created by the magnifying lens.
- 8) Stand by the wall and look back at the candle as the ring is turned. Do you notice how the light gets brighter when the magnifying lens passes between you and the flame? This is similar to flash created by the bulls-eye in a Fresnel lens. The light (candle) is on all the time, but it is the flash that is noticeable.



Flash Lighthouse Flash

Flash...1...2...3...4...5...Flash. Each lighthouse was assigned a different flash pattern. If they all had the same flash pattern or no flash pattern at all, it would be hard to tell which lighthouse was which, especially at night. Each **lighthouse keeper** was told to make their lighthouse flash with a different pattern. Most of the lighthouses installed a special lens called a Fresnel lens. This lens was made of many, individual **prisms** that worked together to concentrate the light into a stronger beam. This beam could be seen from greater distances.

This concentration of the lens is called the **bull's-eye**. The light is brighter looking at the center of the bull's-eye than the other areas. The placement of the bull's-eye causes the light to be very bright for a few seconds then fade for a few seconds. So, as the lens rotates around the light, there appears to be a flash when the bull's-eye passes between the light and your eyes. If there is a bull's-eye on just one side in the lens, there is a much longer amount of time of darkness between the flashes. If there is a bull's-eye on all four sides, the pattern might be something like this Flash...Flash...Flash...Flash. If there is only one bull's-eye, its something like Flash.....Flash.....Flash.



These lenses were very big. The largest Fresnel lens was big enough for an adult to stand inside and it weighed about as much as a small pickup truck (or about 100 fourth graders). Since these lenses were so big how did they rotate? Some of them were placed on rails or rotating tables that moved as weighted chains slowly fell back to the bottom after being pulled up with pulleys. Sometimes a shield mechanism was installed between the lamp and the lens using the same system. This device would rotate giving the light the appearance of flashing.

Some lighthouses were fairly tall so the keepers only had to pull the chains up once or twice a day to keep the weights moving, but shorter lighthouses required the keeper to pull the chains every couple of hours.

Flash patterns may have been very helpful for mariners, but it sure added work for the keepers!



Pre-Site Visit

Activity #4 North Carolina's Outer Banks

Objectives: Students will be able to identify the locations of natural and man-made features along the Outer Banks.

NC Standard Curriculum

Fourth Grade Social Studies

EX.4.G.1.3, EX.4.G.1.5

Fourth Grade Language Arts

Reading Foundational Skills: 3a

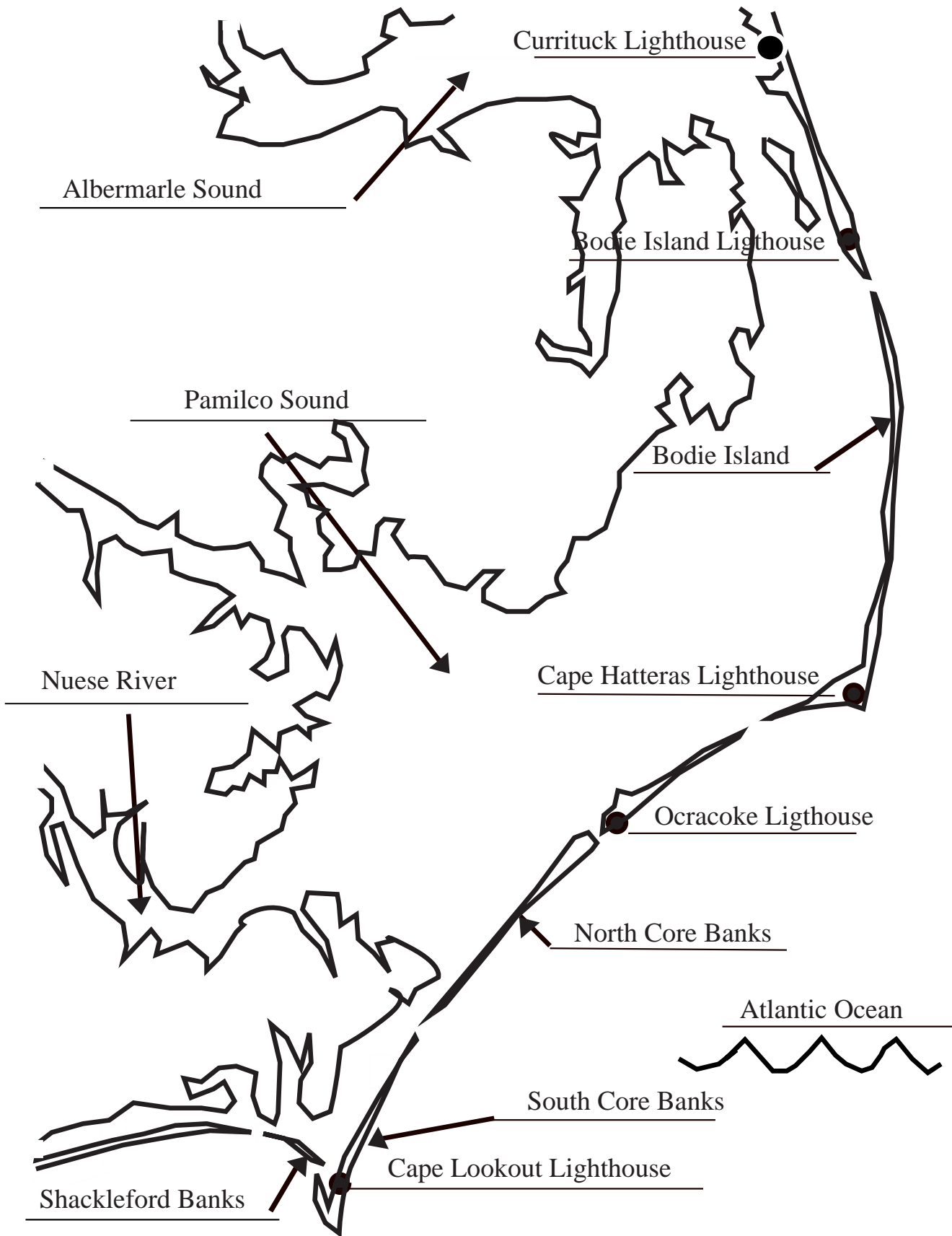
Materials:

- 1) state map or map of eastern North Carolina
- 2) pens or pencils
- 3) coloring pencils or crayons

Procedure:

- 1) Place map of eastern NC on a board or place several smaller ones around the room.
- 2) Either divide the kids up into small groups or have them do it individually.
- 3) Locate and label each location.
- 4) Color the map, possibly blues for ocean, greens for grass, brown for beach.
- 5) Draw each lighthouse with its distinctive pattern.
- 6) Circle your favorite spots in red.





Vocabulary

Beacon	a device designed to attract attention to a specific place
Conical	cone shape without a point at the top
Cupola	domed shape roof on the lantern room
Daymark	pattern which a lighthouse is painted so it looks different from other lighthouses during the day
Entrance	door leading into the lighthouse
Fixed Light	steady light that does not flash
Flash Pattern	pattern of light and darkness for the lighthouse so it looks different from other lighthouses during the night
Fresnel Lens	(fray-NAL) a type of lens developed by Frenchman Augustin-Jean Fresnel that uses hundreds of pieces of glass to concentrate light into a stronger beam
Foundation	a large flat structure that keeps the lighthouse from falling over
Gallery	a platform that circles the tower just below the lantern room
Graveyard of the Atlantic	an area along North Carolina coast that is very dangerous and is known for numerous shipwrecks
Keepers' Quarters	house or place where the lighthouse keepers lived
Lantern Room	a room at the top of lighthouse with glass walls that contains the lamp and lens
Light Characteristic	light color and flash patterns used to identify lighthouses at night
Lighthouse Board	part of the U. S. government that took care of lighthouses and paid the keepers from 1852- 1910
Lighthouse Keeper	person responsible for tending and caring for a lighthouse
Lightning Rod	metal poles attached to top of a building to help stop the damage created by lightning strikes, the rods are connected to a copper wire connected to the ground so that the lightning will run down into the ground instead in the building

Mariner	seaman , someone who navigates ships or boats in the water
Navigate	to steer a ship or boat using maps and landmarks
Prism	a glass object that focuses light in one direction
Refract	bend or throw-back light
Revolving Light	a light produces a flash or pattern as it turns
Service room	room in lighthouse used for storage
Shoals	a shallow formation of sand that can be dangerous to ships
Spiral Staircase	most lighthouses had long circular staircases leading from bottom to top with several landings
Watch room	a room below lantern room in a lighthouse where the keeper kept watch on the light making sure it did not go out
Windows	opening used for ventilation and light

On-Site Visit

Activity #1: Climbing the Lighthouse

Objectives: Students will experience some of the physical

labor involved in being a lighthouse keeper and observe some of North Carolina's geography from a higher elevation.

NC Standard curriculum:

Fourth Grade: Social Studies

4.H.2.1, 4.G.1.4, 4.G.1.1, EX.4.G.1.4

Materials:

- 1) students over 44 inches tall
- 2) one chaperone for every 9 students
- 3) shoes and water for everyone

Making a Reservation and Obtaining an Academic Fee Waiver

- 1) Determine your eligibility for an Academic Fee Waiver.

The requirements are:

- a) NC students studying state history (4th grade)
- b) proof of educational facility or home school documentation
- c) students are required to participate in pre site, on site, and post site activities
- d) students must be over 44 inches tall
- e) students must be physically able to climb numerous steps
- g) 1 adult must be in each climbing group (1 adult and 9 students on each climb)



- 2) Decide on a date for your trip
- 3) Determine total number of people that will be climbing the lighthouse
 - a) there must be 1 chaperone for every 9 students
 - b) only 10 people can climb the lighthouse at one time
 - c) chaperones must be over 18 years of age
- 4) Call the Lighthouse Reservation line at 252-728-0708 with date and number of participants to reserve your spot. Be sure to inform the reservationist that you will be applying for an Academic Fee Waiver.
- 5) Once reservation is made download the Academic Fee Waiver form from the park website
<http://www.nps.gov/cal/planyourvisit/academicfeewaiver.htm>. **The Academic Fee Waiver materials must be received by the park 4 weeks before your climb.**
- 6) Make arrangements with a ferry service to transport your group to the lighthouse. Be sure that you will arrive at the Light Station Visitor Center at least 30 minutes in advance of your climb time. A list of ferry services can be found on our website at www.nps.gov/cal/planyourvisit/ferry.htm

On-Site Procedure

- 1) Pick up your tickets at the Light Station Visitor Center near the ferry dock at least 30 minutes in advance of your first scheduled climb time.
- 2) Be sure to let the cashier know that you are an Educational Fee Waiver group before they ring it up.
- 3) The group should already be divided up with assigned climb times at 15 minute intervals
- 4) Hand out the tickets to the chaperones.
- 5) Have each group arrive at the base of the lighthouse 10 minutes prior to their climb time.
- 6) Be sure that everyone has shoes on when climbing lighthouse and that they do not take any large bags, like backpacks, up with them.
- 7) Have students complete Activity #2 while others are climbing the lighthouse.



On-Site Visit

Activity #2: Cape Lookout Lighthouse Scavenger Hunt

Objectives: The students will use deductive skills to answer questions pertaining to the lighthouse, lighthouse keepers, and the life-saving service.

NC Standard Curriculum:

Fourth Grade: Social Studies

4.H.2.1, 4.H.1.3, 4.G.1.3, 4.G.1.4

Fourth Grade: Language Arts

Language : 4a, 4c

Writing: 8

Fourth Grade: Math

4.OA.2

4.MD.2

Materials:

- 1) Scavenger Hunt sheets
- 2) Pencils

Procedure:

- 1) Hand out Cape Lookout Lighthouse Scavenger hunt worksheets
- 2) Have them read over the questions so that they are familiar with them before they start
- 3) Have them answer the questions as they visit the various facilities in the lighthouse area

Cape Lookout Lighthouse Scavenger Hunt

Answer the following questions.

The answers can be found by reading the signs along the boardwalk, looking at the exhibits in the museum, reading the park brochure, or by asking the park rangers or volunteers.

1. Like you, the Lighthouse Keepers had to use a _____ to get to the island from the mainland.

2. Lighthouse Keepers had to keep detailed journals about the weather.
What is the weather like today? Record temperature, direction of wind, and wind speed.

3. What year was the first lighthouse built and how tall was it?

4. Cape Lookout Lighthouse is protected by the

Hint: it is three words



5. What is a Breeches Bouy? _____

6. What did Keeper Gillikin get in his package from the family? _____

7. What direction does the door onto the gallery face? _____

8. What award did the Life Saving Service crew get for rescuing the victims of the Sarah D. Rawson wreck in 1905?



9. How many steps did you climb to get to the top of the lighthouse?

10. Lighthouse keepers had to carry oil to the top of the lighthouse to burn in the light. How much did a bucket of oil weigh?

11. By using the formula below, find out how many land miles the light can be seen if the light can be seen 25 nautical miles.

$$\begin{array}{r} 1 \text{ nautical mile} = 1.2 \text{ land mile} \quad 25 \text{ (nautical miles)} \\ \times \quad 1.2 \\ \hline ? \text{ (land miles)} \quad \underline{\hspace{2cm}} \text{ land miles} \end{array}$$

12. The base of the lighthouse is 28 feet 7 inches. Count the number of steps it takes you to walk around the base of the lighthouse.

13. Name of the only female lighthouse keeper that worked here at Cape Lookout Lighthouse.



14. What does U.S.L.S.S. stand for?

15. What is the name of the park ranger or volunteer that was gave you the safety information at the base to the lighthouse?

Answers to Scavenger Hunt

1. boat
2. (found in Visitor Center) example: hi 80's winds SE at 13-18mph
3. (found on sign along boardwalk) 1812 107 ft tall
4. (found in Visitor Center) National Park Service
5. (found in museum) apparatus used to bring victims to shore from shipwrecks
6. (found in museum) chicken, coke, light bread, butter and candy
7. (found in lighthouse) east
8. (found in museum) Gold Life-Saving medal
9. (found in lighthouse) 207
10. (found in museum) approx. 45 pounds
11. 30
12. depends on the size of the kid
13. (found in museum) Charlotte A. Mason
14. (found in museum) United States Life Saving Service
15. Ranger _____

Lonley keepers keep the light shining bright
Itching for the dawn to break.
Greeting sailors through the night
High above the roaring sea she stands.
Twilight to dawn she shines her light.
Helping ships pass the shoals is her job.
Ocean waves beat at her door with might.
Under the cover of darkness her light is seen.
Sailors jump for joy when she's in sight.
Emitting her blinking light is her source of joy.

Post-Site Visit

Activity #1: Acrostic Poem

Objectives: Student will learn to write an acrostic poem using adjectives and synonyms.

NC Standard Curriculum:

Fourth Grade: Language Arts
Language: 4a, 4c
Reading Foundation Skills: 3a, 4b
Reading for Literature: 2, 3, 4, 5, 10
Reading for Informed Text: 10
Writing: 2b, 2d, 4, 6, 7, 8, 9
Speaking/Listening: 4

Materials:

- 1) Samples of acrostic poems
- 2) Student worksheet
- 3) Dictionary
- 4) Thesaurus
- 5) pencil

Procedure:

- 1) Introduce acrostic poetry by reading examples
- 2) Read and discuss what makes an acrostic poem.
- 3) Review adjectives and synonyms
- 4) As a group, brainstorm some possible adjectives or synonyms that could be used to write an acrostic poem using something they are familiar with, like their school or an animal.
- 5) After writing an acrostic poem as a group, hand out the worksheet and have them write a poem using the word “Lighthouse”
- 6) Have them read their poems aloud to the rest of the group.

What is Acrostic Poetry?

Acrostic Poetry is written using the letters in a topic word. The topic word is written down the left side of the paper. Each letter in the topic word is used to start a phrase relating to the topic. The topic word is written vertically along the left side of the page and the words or phrases that describe the topic are written left to right using the letters in the base word.

title

by

name

L _____

I _____

G _____

H _____

T _____

H _____

O _____

U _____

S _____

E _____

Post-Site Visit

Activity #2 Build a Lighthouse

Objective: Students will demonstrate their knowledge by constructing their own lighthouse.

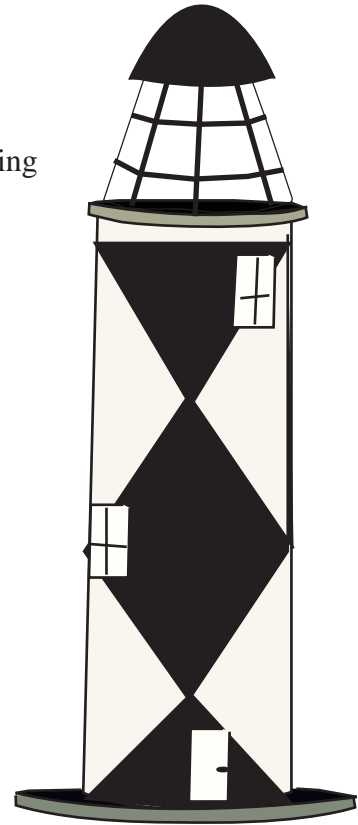
NC Standard Curriculum:

Fourth Grade: Mathematics

4.G.1

Materials:

- 1) one 3 1/2" diameter cardboard tube cut to 12" length
- 2) one 6" diameter cardboard circle
- 3) one 4" diameter cardboard circle
- 4) one 9 ounce clear plastic cup
- 5) half of a 2 1/2" diameter Styrofoam ball
- 6) Glue
- 7) one black permanent marker (wide tip)
- 8) paints, markers, crayons, and other assorted art supplies

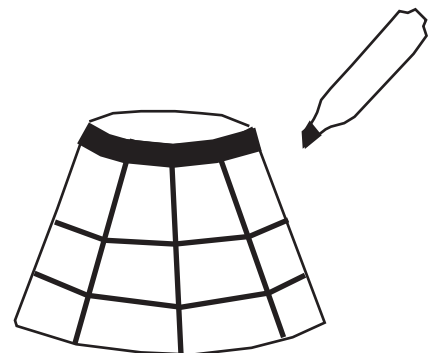


Procedure:

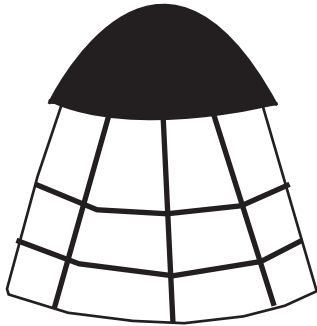
After discussing lighthouse terminology and lighthouse characteristics, let the students enjoy this hands-on activity constructing their own lighthouse.s

- 1) Distribute the following items to each student
 - * 1 sheet of cardboard, large enough to cut out one 6" diameter circle and one 4" diameter circle
 - * one 12" long cardboard tube
 - * half of a 2 1/2" diameter. styrofoam ball
 - * one 9 ounce clear plastic cup
 - * glue (white glue will work but hot glue works easier and faster)Students should not handle glue guns.
 - * permanent marker
 - * art supplies

- 2) Glue 6" diameter cardboard circle to the end of the tube (make sure the tube is in the center of circle). Set aside to dry.
- 3) Use a black marker to draw windows on the plastic cup.



- 4) Decorate the 4" diameter circle (lantern room floor) and the styrofoam ball (the lantern room roof, also known as the cupola)
- 5) Glue the lantern room floor (4" circle) on top of the tube (make sure it is centered). Set aside to dry.



- 6) With the plastic cup laying upside down on a flat surface, center the lantern room roof onto the bottom of the cup and glue in place.
- 7) Center the lantern room (the upside down cup with the ball on top) onto the lantern room floor and glue in place.

- 8) Allow project to dry before proceeding.
- 9) Color or paint an entrance at the bottom of the lighthouse.
- 10) Color or paint the lighthouse. Create your own daymark (pattern) and remember to add windows and an entrance door.
- 11) Color or paint the base to simulate grass and a sidewalk to make it more realistic.

For added fun, do not glue the lantern room to the floor. Set a flameless tea light on the lantern room floor, then set the cup over top.

A small light bulb could also be put into the lantern room by cutting a small hole in the 4" diameter circle. The cord could run down through the cylinder and out the back of the lighthouse.

Post-Site Visit

Activity #3: Word Search

Objectives: Students will reinforce lighthouse terminology by completing a word puzzle

NC Standard Curriculum

Fourth Grade: Language Arts

Language: 4c

Reading Foundational Skills: 3a

Reading for Literature: 4

Materials:

- 1) word search puzzles
- 2) pencils
- 3) dictionary or narrative sheets, or use the vocabulary list from previous materials

Procedure:

- 1) hand out puzzles
- 2) have students complete puzzles



Cape Lookout Lighthouse

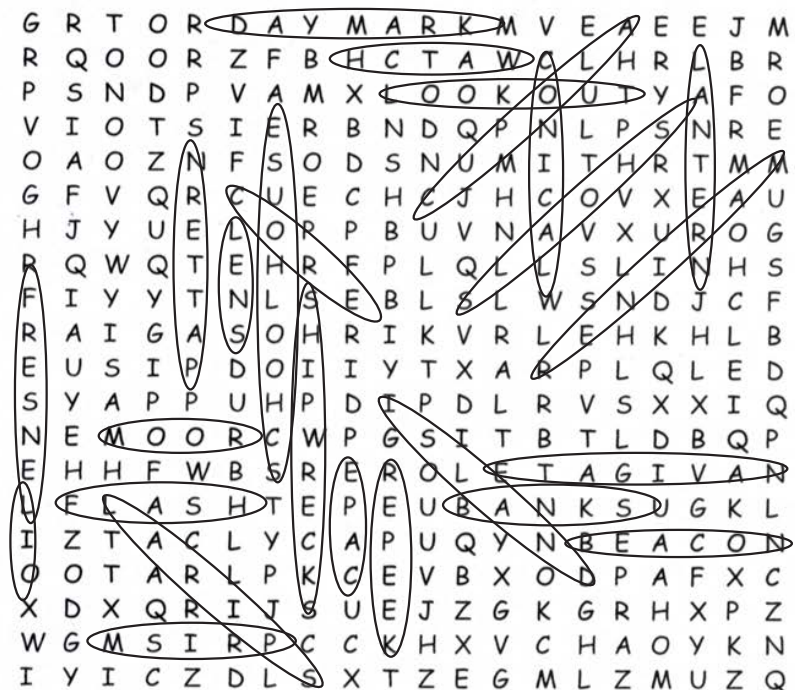


Fill in the blanks. Find each word in the puzzle. Each blank will be found individually.
Two word answers will not be found together.

- 1) glass structure used to concentrate the light beam _____
- 2) North and South _____ are part of Cape Lookout National Seashore
- 3) job title of person in charge of lighthouse _____
- 4) domed shaped roof _____
- 5) people who work on or with the sea _____
- 6) style of lighthouse where the tower is attached to the quarters _____
- 7) painted pattern on lighthouse _____
- 8) shape of glass used in the lenses _____
- 9) shallow hazards in the ocean _____
- 10) round style of lighthouse _____
- 11) type of stairs in Cape Lookout Lighthouse _____
- 12) what type of fuel was used to burn in the lighthouse _____
- 13) lighthouses were used to prevent _____
- 14) light fixture housed in a glass room _____
- 15) device used to attract attention _____
- 16) piece of land surrounded by water _____
- 17) _____ Lighthouse is located on South Core Banks
- 18) to steer a boat by comparing it to a known place _____
- 19) periods of dark and light assigned to a lighthouse _____
- 20) area in a lighthouse where the keeper spent most of his or her time _____

Answers to Word Search

- 1) glass structure used to concentrate the light beam fresnel lens
- 2) North and South Core Banks are part of Cape Lookout National Seashore
- 3) job title of person in charge of lighthouse keeper
- 4) domed shaped roof cupola
- 5) people who work on or with the sea mariner
- 6) style of lighthouse where the tower is attached to the quarters schoolhouse
- 7) painted pattern on lighthouse daymark
- 8) shape of glass used in the lenses prism
- 9) shallow hazards in the ocean shoals
- 10) round style of lighthouse conical
- 11) type of stairs in Cape Lookout Lighthouse spiral
- 12) what type of fuel was used to burn in the lighthouse oil
- 13) lighthouses were used to prevent shipwrecks
- 14) light fixture housed in a glass area lantern
- 15) device used to attract attention beacon
- 16) piece of land surrounded by water island
- 17) Cape Lookout lighthouse is located on South Core Banks
- 18) to steer a vessel by comparing it to a known location navigate
- 19) periods of dark and light assigned to a lighthouse flash pattern
- 20) area in lighthouse where keeper spent most of his time watch room



Cape Lookout Lighthouse Quiz

- 1) **Cape Lookout Lighthouse** is located on _____
- a) Harkers Island
 - b) South Core Banks
 - c) North Core Banks
 - d) Bodie Island
- 2) **This area is called the Graveyard of the Atlantic because there have been so many shipwrecks along this coast.**

True

False

- 3) **What is a daymark?**
- a) A mark that can be seen on a paper
 - b) A check mark on a paper
 - c) The painted pattern assigned to a Navy ship
 - d) The painted pattern assigned to a lighthouse



- 4) **The Fresnel lens was not very useful.**

True

False

- 5) **The second Cape Lookout Lighthouse was completed in _____.**
- 6) _____ is the series of light and dark periods emitted by a lighthouse.
- a) Night light
 - b) Flash Dance
 - c) Flash Pattern
 - d) Light Pattern

7) Where did Lighthouse Keepers spend most of their time while in the lighthouse?

- a) Gallery
- b) Watch room
- c) Lantern room
- d) Landing

8) How many steps does Cape Lookout Lighthouse have?

9) Lighthouse Keepers had many jobs to do. List 3 jobs other than keeping the light burning.

1. _____

2. _____

3. _____

10) Cape Lookout Lighthouse is protected by Cape Lookout National Seashore

True

False

11) Where did the Lighthouse Keepers live?

- a) Hotel
- b) Keeper's Quarters
- c) Inside the lighthouse
- d) Tent

12) What is your favorite lighthouse style?

