

# ***Navigating with Bowditch*** **Classroom Resource Guide**



The House of the Seven Gables is pleased to offer this packet to help you prepare your students for their visit to our site. We encourage both preparation and follow-up to make your visit a meaningful learning experience.

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## DESCRIPTION OF THE ON-SITE ACTIVITY

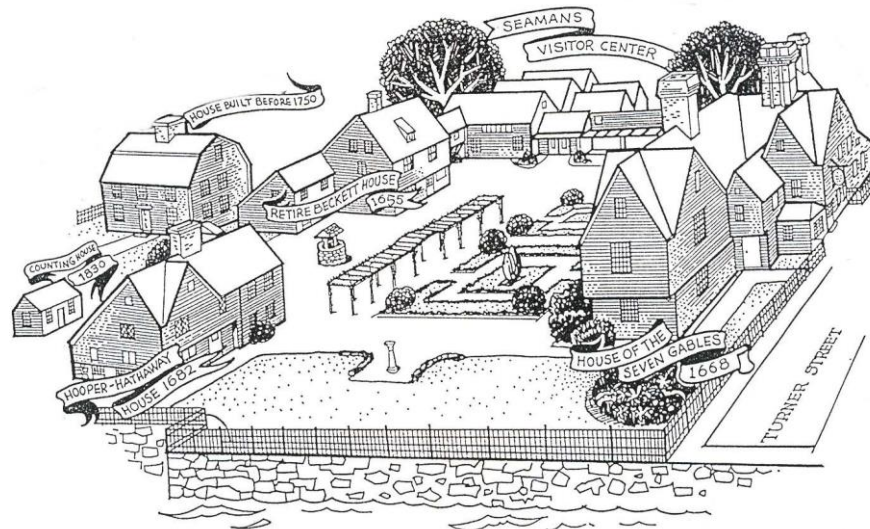
### *Navigating with Bowditch*

In addition to touring portions of The House of the Seven Gables and Hawthorne House, students will gather either in the orientation room of The House of the Seven Gables or in Hooper-Hathaway's Great Room to orient themselves on the sequence of their large group's activities. During the navigational activities portion, each group of 3-5 students will be given an instruction booklet which will direct them to their first activity station. From this starting point, each group will work through five stations, performing a mathematical or navigational task at each station. Math concepts include measuring depth, calculating percentages, and determining duty or taxes due. Students will also learn historical information about Nathaniel Bowditch, maritime trade, navigation, and the historic houses on site.

An activity kit provided by us for use on site will include an instruction booklet, directional compass, a site map, clipboard, paper, and pencil. The entire program is designed to take about 60 to 90 minutes.

FOR BEST RESULTS, PLEASE DETERMINE YOUR ACTIVITY GROUPS OF 3 TO 5 STUDENTS, IN ADVANCE. WE ALSO REQUEST THAT YOU BE PREPARED TO COMBINE THE COOPERATIVE ACTIVITY GROUPS INTO TWO LARGER GROUPS UPON ARRIVAL.

Active, engaged chaperones help enormously! **PLEASE PROVIDE 3-5, depending on the number of small groups.**



## VOCABULARY LIST

**Arbor:** a support for a vine or tree

**Calculate:** to solve a problem using math

**Chandlery:** a business place for certain goods

**Commodity:** a supply of goods for trade, *i.e.*, coffee, spices, etc.

**Cooper:** a wooden barrel maker

**Degree:** a unit used to measure angles; there are 360 degrees in a circle

**Duty:** a government tax, especially on imports

**Fathom:** a marine measurement of depth equal to approximately 6 feet

**Indenture:** period of time, usually seven years long, during which a person was required to work for his or her master. Indentured servants were different from enslaved people because they might eventually become free.

**Mansion:** a large house

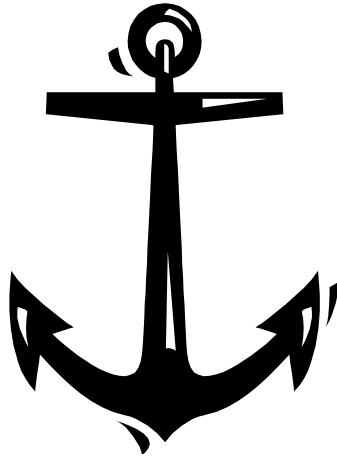
**Navigate:** to follow a planned course or path, especially at sea

**Octant:** a navigational instrument employing a 45-degree angle

**Pace:** a normal walking step

**Port:** a city harbor for ships taking in/delivering cargo

**Supercargo:** marine officer in charge of cargo sale or purchase



## **SUGGESTED ACTIVITIES**

### **Before your visit:**

Students should read *Carry On, Mr. Bowditch* by Jean Lee Latham, available from The House of the Seven Gables' Museum Store. For ordering information, please call (978) 744-0991 x 112. If this is impossible, please review Nathaniel Bowditch's importance in history, in navigation, and in Salem, as well as his character traits/strengths.

### **Review the vocabulary list with definitions from page 3.**

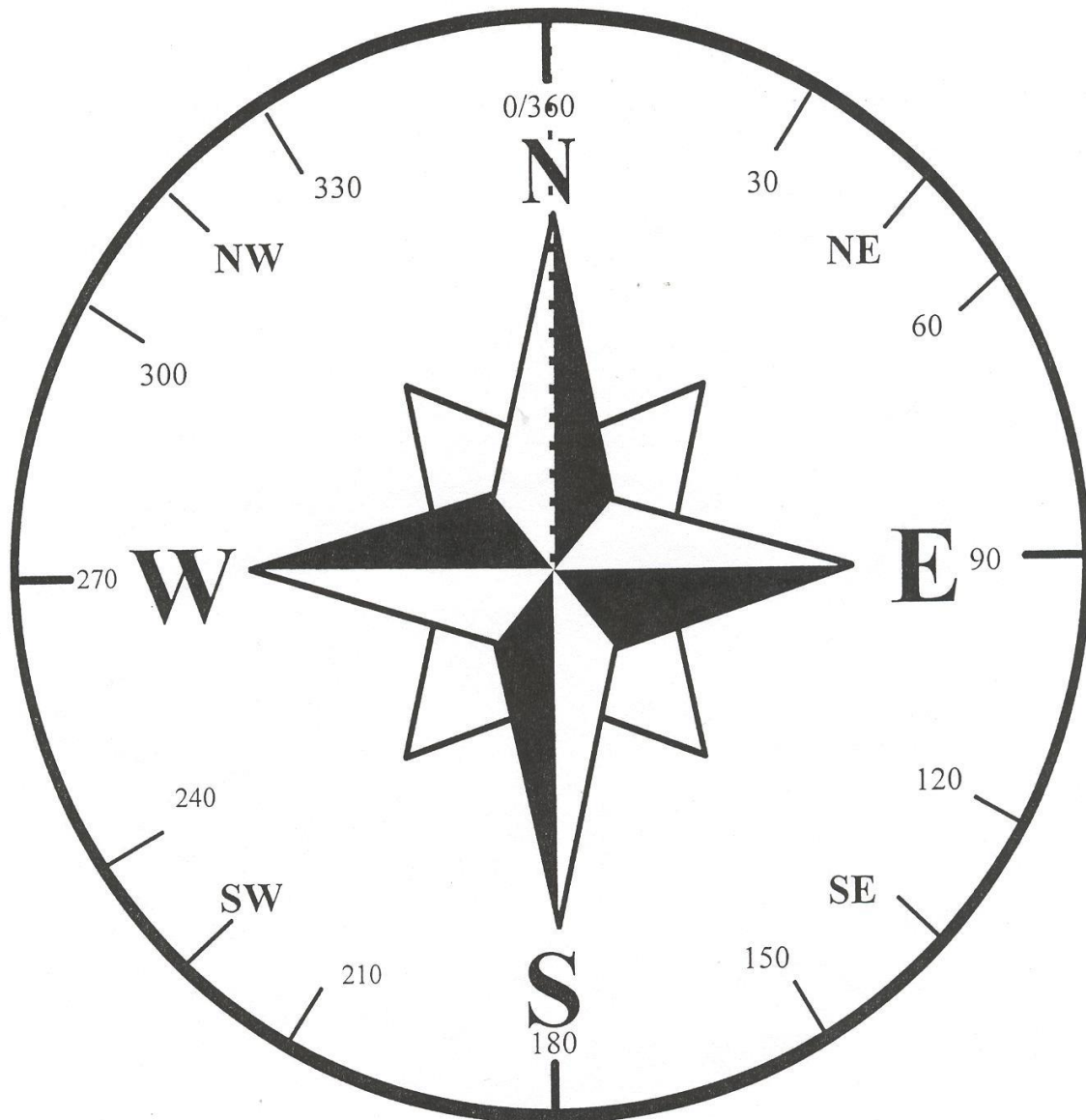
Demonstrate the use of a directional compass and let students practice in the classroom or on the playground. Instructions on using a compass appear on page 6 of this packet. The paper compass can be useful as a demonstrative tool.

### **After your visit:**

Find Sumatra, Java, and China on a map. Discuss possible sailing routes from Salem to those places. What commodities would be profitable from such trips? Why?

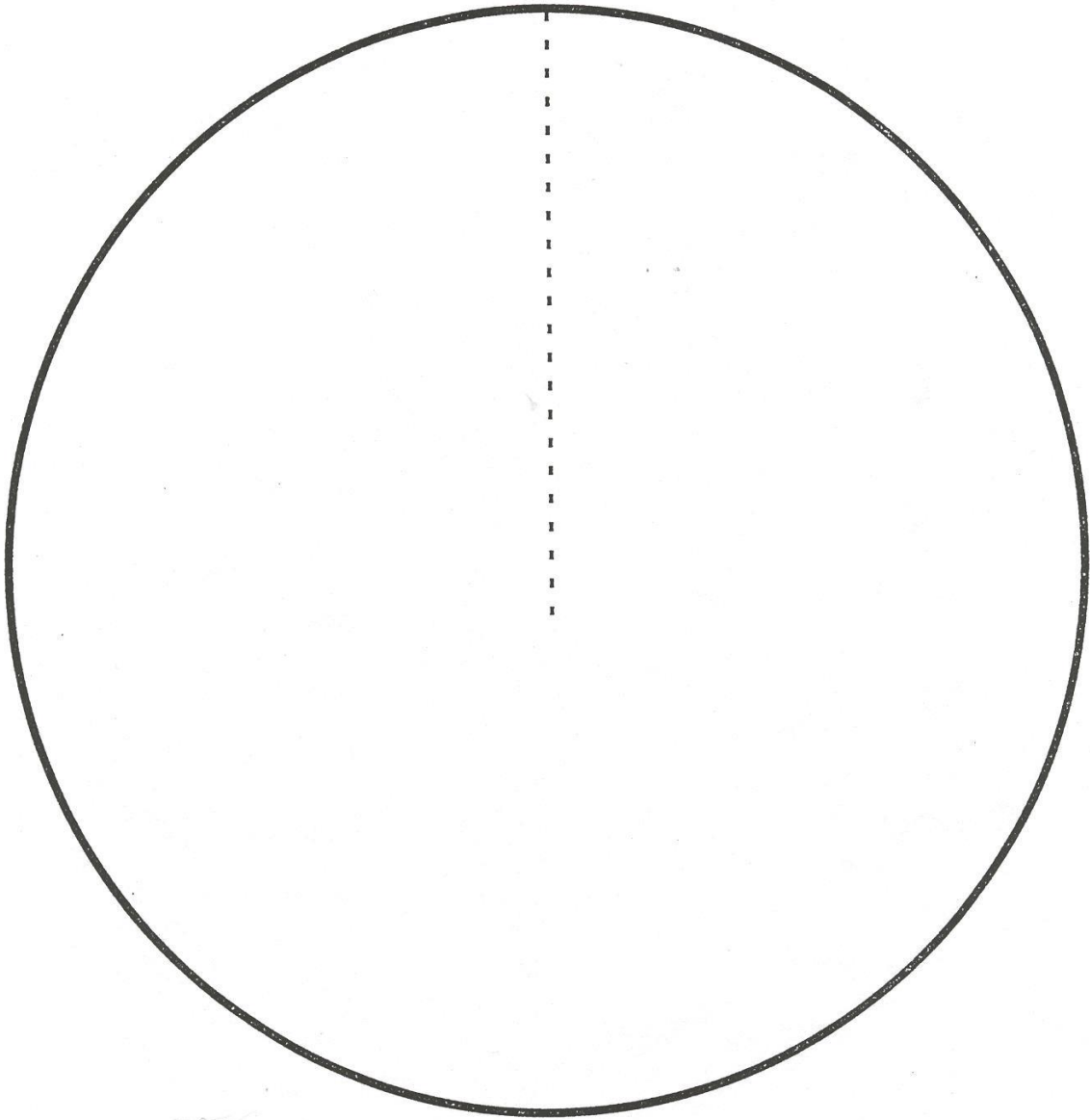
From The Gables, your group can walk to the Custom House located at 176 Derby Street to learn about the commodities that entered the port of Salem during the heyday of maritime commerce. The Custom House is operated by the National Park Service and is located directly across the street from the Salem Maritime National Historic Site.

For more information, call 978-740-1650 before you visit, so that you can learn about free educational demonstrations or talks offered by the National Park Service.



**Directions for the Teacher:**

- Photocopy the compass and the circle on the next page onto card stock, or mount them on cardboard.
- Cut along the dotted line and slide the two circles together so the centers meet. To see various sizes of angles, rotate the two circles so the dotted line of the plain circle lines up with the degree marks on the edge of the compass.
- Make up some math problems to go with the compass.
  - For example: How many degrees apart are the N and the S? (180) How many degrees apart are the N and the NE? (45). Let the students practice measuring angles using the compass.



## HOW TO USE A DIRECTIONAL COMPASS

### To find direction:

- Hold the compass horizontally (flat).
- Turn your compass so the colored (usually red) end of the needle is pointed to the **N**. Your compass is now pointed toward the **north**.
- When you hold the compass this way, **E** will indicate **east**, **S** will indicate **south**, and **W** will indicate **west**.
- It is very important to hold the compass FLAT and to MAKE IT POINT TO THE NORTH each time you need to find a direction.

### To measure angles:

- Most compasses have numbers between the N, E, S, and W. These numbers indicate degrees. You can use these degree marks for many things.
  - If you were using your compass in the wilderness with a map, you would use the degree marks to determine the path to your destination.
- In a classroom setting, you can use the marks to estimate the sizes of angles.
  - For example, place your compass on the lower left corner of a piece of paper. Line up the N with the left-hand edge, and the E with the bottom edge. The degree marks will tell you the corner makes a 90-degree angle.
  - Now try lining up both the W and the E with the bottom edge. You can count or subtract to find that there are 180 degrees between the W and the E. That is the measurement of a straight angle. How many degrees are there in a complete circle?

