



# Independence Seaport Museum

## INDEPENDENCE SEAPORT MUSEUM ACTIVITY PACKET

Grades 6-8

### Dear Teacher:

We are so excited that you scheduled a visit to the Independence Seaport Museum with your class! To complement your students' visit to the museum, we have created this packet to use in the classroom. We hope the activities included will enhance your visit and inspire your students to want to learn more.

### About the Packet:

The activities in this packet are designed to encourage creative thinking and introduce students to the topics of boats and sailors. In the classroom activities ask students to think about exploration and travel and can be done individually or in small groups.

### In the classroom activities:

#### Activity 1: *Everyone Lives on a Watershed: The Delaware River and Dock Creek*

Students will discover the history of the Delaware River and Dock Creek through this historical two page essay.

#### Activity 2: *"Conveyor Belts of the Atlantic": Wind Systems and How Ships Use Them*

Students will learn how wind is utilized to cross the Atlantic Ocean. They will also investigate today's Delaware River, learning about the route and its affect on four states in United States.

US Standards: NS.6-8.6

PA Standards: 1.6, 2.3, 4.2, 4.3, 6.2, 7.2

NJ Standards: SL.6.2, 5.2, 5.3, 6.1, 6.3

DE Standards: History 1, History 2, Geography 1, Science 1



## In the Classroom activities:

### *Everyone Lives on a Watershed: The Delaware River and Dock Creek*

The Delaware River connects everyone who lives within its watershed: from Hancock, N.Y. to Cape May, N.J. (a distance of 330 miles). The Dock Creek Watershed in Philadelphia is part of this system, and covers approximately one square mile.

The Dock Creek Watershed is a good place to learn about watersheds, wetlands, and how people interact with them. The area offered opportunities for fishing, transportation and trade. William Penn's choice of the site for Philadelphia was probably do to the favorable impression, which this stream made on the original planners. It was named Dock Creek because it was hoped it would become a permanent dock. Along the Creek, some of Philadelphia's most prosperous early citizens made their homes. The soil was grassy, the water clean, and the summer view pleasant. The colonists who came over in those first years wasted no time in clearing the woodlands for fuel and filling in the wetlands to make way for homes. There were approximately 7000 acres of shallow water habitats within the future city limits when Penn arrived in 1682. By the end of the colonial period there were 500. Trade and industry also took advantage of this waterway. A brewery was set up on its banks. This was followed by tanneries and lumberyards. Everyone used the Creek as a dumping ground.

By 1799, the Dock Creek had been turned into a sewer and the Riverfront was a mess. The City's first pollution survey taken that year, found pollution from ships, sewers and contaminated wetlands was threatening the health of the City and the River. After the Revolution, it was decided to cover the Creek. It had become stagnant, ill smelling and there was no doubt that it often contributed to disease. Thieves and robbers hid along its banks and on occasion tipsy men sometimes fell into the foul water and drowned. The Creek was covered and a street was created to replace it. The pollution was much worse for the River.

In just over a century's time, the colonial Riverfront changed from a predominantly wild, wooded area, supported by a clean, healthy river teeming with life, to a farming and recreational area whose river supported the needs of the new colony throughout the 1700s, to a dangerously polluted hub of industry beginning in the 1800s. By the early 1900s the River was so polluted it could not support aquatic life. The River was receiving raw sewage from two million people. By 1941, there was a 20-mile pollution block, the Dead Zone, in the Camden-Philadelphia region, a zone containing no dissolved oxygen. The water was no longer safe to swim in, drink or even breathe because of the odors of the sewage.

But the River has been making a comeback. Since the end of World War II, more than one and a half billion dollars have been spent building and improving sewage treatment plants. By 1986, dissolved oxygen was up and 36 species of fish lived in what was once the Dead Zone. Today, the Delaware Watershed is the most intensely used area in the country. The Watershed provides water for 7.4 million people living within its borders and for an additional 17 million people outside it, in New York and northern New Jersey.

In all, the Watershed provides water for 5% of the nation's population. Groups such as the River Keepers and the Philadelphia Water Department are constantly testing its water to maintain acceptable standards.

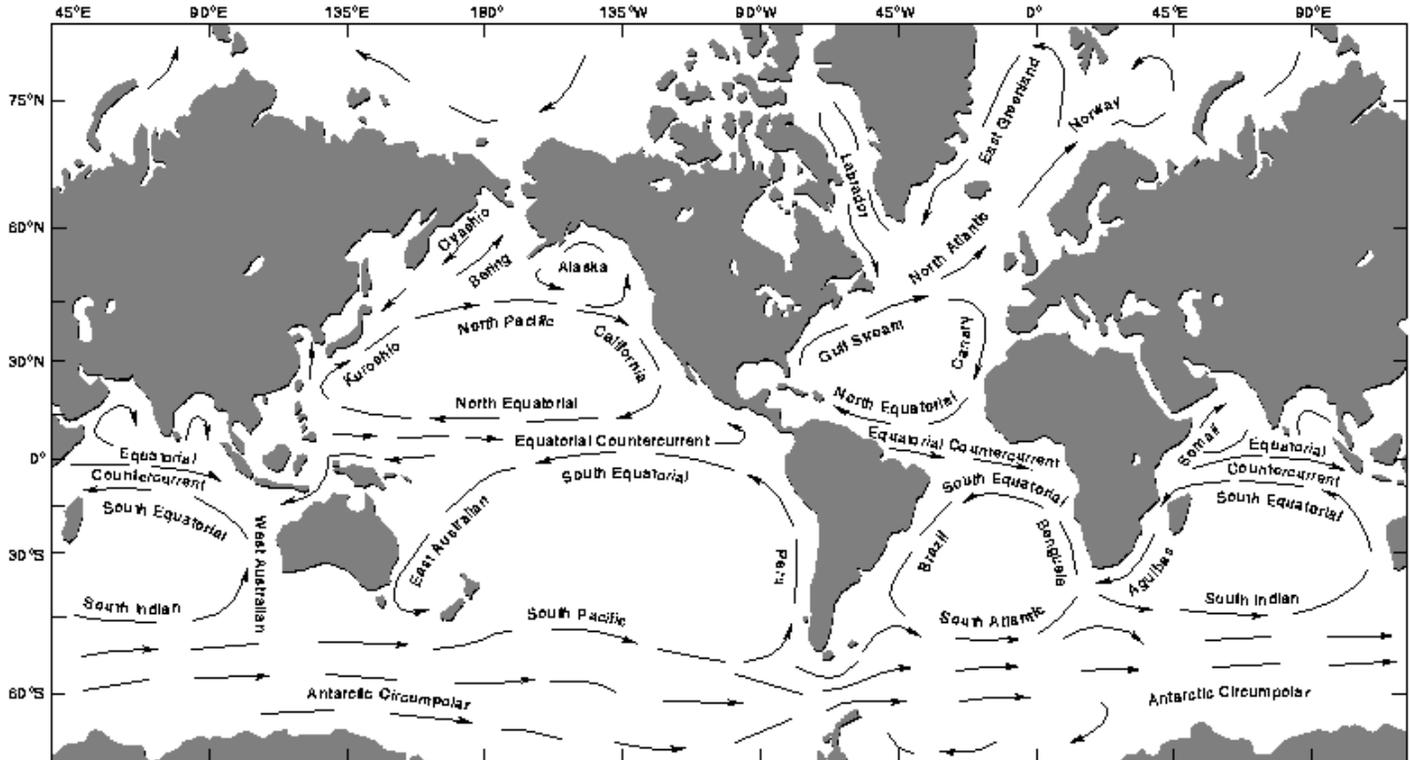
### **Activity:**

1. What is a watershed?
2. In what year did William Penn arrive and what did the land look like when he arrived?
3. In 1799, what happened to Dock Creek?
4. Briefly explain the idea of a dead zone on the Delaware River. What happened to cause a dead zone? What is being done to correct it?

### The Delaware River:

- ✿ Is the longest un-dammed river east of the Mississippi.
- ✿ Is 330 miles long.
- ✿ Has 216 tributaries, the largest are the Schuylkill and the Lehigh Rivers.
- ✿ Has a watershed of 13,539 square miles draining parts of four states: Pennsylvania (50.3%), New Jersey (23.3%), New York (18.5%) and Delaware (7.9%).

*“Conveyor Belts of the Atlantic”: Wind Systems and How Ships Use Them*



The wind systems of the Atlantic Ocean consist of two ellipses, one north of the Equator, the other south. The northern ellipse moves in a clockwise direction, the southern in a counterclockwise direction. These ellipses are separated by bands of equatorial calms, the Doldrums, where the winds are unpredictable.

In the North Atlantic, the eastern end of the ellipse rests on the Atlantic coast of Portugal. The winds, which wash past this coast, carried Portuguese ships west to the Canary Islands. Here the ships entered a band of winds known as the Trade Winds because of their importance to commerce. These winds are among the most reliable winds in the world. They will drive a sailing ship across the

ocean in a few weeks.

### QUESTIONS:

1. Trace the fast route for a sailing ship to take to reach the Americas.
2. What countries would this ship pass?
3. Would the captain be wise to take the same route back? Why?
4. Why would the doldrums also be called the horse latitudes? Look it up.

**Do this:** Look at the map to answer the questions below.

1. Which **four** states does the Delaware River flow by?

2. Into which **ocean** does the Delaware River flow?

3. Philadelphia was founded between the junction of the Delaware and **what other river**?

4. Near which **town** in New York State does the Delaware River begin?

