



## Clearwater and the Common Core Standards

We have worked over the past year to ensure that Clearwater's onboard education program fits in with Common Core Standards effectively, and we can provide teachers with specific practices that we use on the boat that fulfill specific standards. As we began alignment, we have found (as many educators across the country have found) that our program, with very little adjustment, is in line with Common Core Standards. Throughout our diverse set of learning stations, full group activities, and program variety, we can cover many common core standards at every grade level. For example, the Common Core asks that students be prepared to do math even when it is not in a "math problem"- applying fractions and percentages and ratios to real life situations. On the *Clearwater*, we do that every day, whether it is through creating, observing, and recording water quality testing results, or pulling up the sail using a complex pulley system, and then recreating it during our mechanical advantage "tug of war" game. We have also been creating curriculum that will align with the "reading informational text" standards. While our history station often requires students to use their inferring skills, and use tools like timelines and artifacts to make inferences about history, we have been hard at work creating activities hands on activities using primary sources describing the art, history, literature, and ecology that is so important to Hudson River study. Below, we have listed many of the different activities and stations that we use on the boat, and which standards each activity covers (by grade, low to high.)

**Instructions-** Find the theme on our website or materials that best suits your class/curriculum. Identify which stations you would anticipate wanting in a sail program. Talk to the educator- Typically we will run Life, Navigation, History and Water Quality on every sail, leaving one station as the teacher (or educators) choice. Look at what standards we cover in your grade by following the Hyperlink, or looking at a Common Core manual.

**Life Station:** Students get a close up, hands on experience with the fish and other live river creatures. Students learn to identify a variety of aquatic species using dichotomous keys. (*NYS Learning Standards MST1, MST4*) ([CCSS.ELA-Literacy.RST.6-8.1](#)) ([CCSS.ELA-Literacy.RST.6-8.4](#)) ([CCSS.ELA-Literacy.RST.6-8.7](#)) ([CCSS.ELA-Literacy.RST.6-8.9](#)) ([CCSS.ELA-Literacy.RI.4.7](#)) ([CCSS.ELA-Literacy.RI.4.9](#)) ([CCSS.ELA-Literacy.RI.5.3](#)) ([CCSS.ELA-Literacy.RI.5.4](#)) ([CCSS.ELA-](#)

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[Literacy.RI.6.7](#)) ([CCSS.ELA-Literacy.RI.7.3](#)) ([CCSS.ELA-Literacy.RST.9-10.1](#)) ([CCSS.ELA-Literacy.RST.11-12.1](#))

**History Station:** Down below decks in the main cabin, students gather around the dining table and learn about the rich history of the Hudson River and *Clearwater*. Timelines and props are used to engage students in exploring historical developments on the Hudson River. We can also provide primary and secondary sources based on Hudson River history as learning tools. (*NYS Learning Standards SS1, SS2*) ([CCSS.ELA-Literacy.RI.4.7](#)) ([CCSS.ELA-Literacy.RI.4.7](#)) ([CCSS.ELA-Literacy.RI.4.9](#)) ([CCSS.ELA-Literacy.RI.5.3](#)) ([CCSS.ELA-Literacy.RI.5.4](#)) ([CCSS.ELA-Literacy.RI.5.5](#)) ([CCSS.ELA-Literacy.RI.6.2](#)) ([CCSS.ELA-Literacy.RI.6.7](#)) ([CCSS.ELA-Literacy.RH.6-8.1](#)) ([CCSS.ELA-Literacy.RI.9-10.9](#))

**Navigation Station:** Everyone gets to stand at the helm of this 106-foot wooden ship and learn how their efforts at the tiller change the course of the entire vessel! They also examine nautical charts, compasses, and other tools to understand how a captain navigates the waters of the Hudson River. (*NYS Learning Standards MST5, MST6, SS3*) ([CCSS.Math.Content.HSN-VM.A.3](#)) ([CCSS.Math.Content.4.MD.C.5a](#))

**Water Quality Station:** Students determine the health of the Hudson River's water by doing a few simple water chemistry tests. After making observations and hypotheses about the water, they perform tests on salinity, dissolved oxygen, turbidity, and pH levels. (*NYS Learning Standards MST1, MST4*) ([CCSS.ELA-Literacy.RI.4.7](#)) ([CCSS.Math.Content.4.NF.A.1](#)) ([CCSS.Math.Content.5.MD.C.3](#)) ([CCSS.Math.Content.6.RP.A.1](#)) ([CCSS.Math.Content.6.RP.A.3](#)) ([CCSS.ELA-Literacy.RST.6-8.7](#)) ([CCSS.ELA-Literacy.RH.9-10.7](#)) ([CCSS.ELA-Literacy.RST.11-12.1](#)) ([CCSS.Math.Content.6.RP.A.3](#)) ([CCSS.Math.Content.6.RP.A.3c](#)) ([CCSS.Math.Content.7.RP.A.2a](#))

**Sail Physics:** Students learn how wind can be harnessed to propel a vessel like *Clearwater* along the river. By observing a foil, such as the 3,000 square foot mainsail above their heads, and feeling the wind on their faces, they learn how the high and low pressures around them create lift and move the ship. (*NYS Learning Standards MST1, MST4*) ([CCSS.ELA-Literacy.RST.9-10.5](#)) ([CCSS.Math.Content.8.G.A.1b](#)) ([CCSS.Math.Content.8.G.A.1b](#)) ([CCSS.Math.Content.8.G.A.1c](#)) ([CCSS.Math.Content.HSN-VM.A.1](#))

**Simple Machines:** Students identify the simple machines found all around the boat and learn how necessary they are to a sailor's life. They test the advantages of levers and pulleys through interactive games and learn the mathematical relation between what is gained and sacrificed with the use of these tools. Great usage of real world skills to broaden real world understanding of proportions and fractions using the physics of simple machines.. (*NYS Learning Standards MST1, MST4*)

*Reading Standards*

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(CCSS.ELA-Literacy.RST.9-10.5) (CCSS.ELA-Literacy.RST.6-8.3) (CCSS.ELA-Literacy.RST.6-8.9) (CCSS.ELA-Literacy.RST.9-10.4) (CCSS.ELA-Literacy.RST.9-10.5)  
(CCSS.ELA-Literacy.RST.9-10.7) (CCSS.ELA-Literacy.RST.11-12.4) (CCSS.ELA-Literacy.RST.11-12.8) (CCSS.ELA-Literacy.RST.11-12.9)

#### *Math Standards*

(CCSS.Math.Content.4.NF.A.1) (CCSS.Math.Content.4.NF.B.3d)  
(CCSS.Math.Content.5.NF.B.6) (CCSS.Math.Content.5.NF.B.7c)  
(CCSS.Math.Content.6.RP.A.1) (CCSS.Math.Content.6.RP.A.3)

**Knot Tying:** One of our professional sailors demonstrates a few important knots used onboard ships. Students learn the variety of uses for different knots and practice tying them with the help of our salty crew.

**Art Station:** Students learn about the Hudson River School Painters, their significant role in American history, and study their paintings. Students see how an artist can inspire a sense of ownership for a place and help protect our beautiful natural resources. Students have an opportunity to create their own work of art. (*NYS Learning Standards ARTS1, ARTS3, ARTS4*)

**Writing/Poetry Station:** Students work on a [Found Poetry](#) activity, using primary source documents to create their own original found poetry, or use the primary source documents as a pre-writing discussion point. Students work with new vocabulary and use critical reading skills to bolster their own creative processes and connect with Hudson River history and legend in an organized way.

(CCSS.ELA-Literacy.RL.4.1) (CCSS.ELA-Literacy.W.4.3d) (CCSS.ELA-Literacy.W.5.3b)  
(CCSS.ELA-Literacy.W.7.3b) (CCSS.ELA-Literacy.W.11-12.3d) (CCSS.ELA-Literacy.RI.5.4)  
(CCSS.ELA-Literacy.RH.6-8.1) (CCSS.ELA-Literacy.RL.9-10.4) (CCSS.ELA-Literacy.RI.5.)

**Geology Station:** Students observe their physical surroundings and understand how the river they are sailing on, the mountains surrounding them, and the rocks in their hands were created. Connecting glacial actions that took place thousands of years ago with the quarry onshore, gives students an understanding of our connection with the natural environment. (*NYS Learning Standards MST1, SS1*)(CCSS.ELA-Literacy.RI.4.1) (CCSS.ELA-Literacy.RI.4.3) (CCSS.ELA-Literacy.RI.4.4) (CCSS.ELA-Literacy.RI.4.5) (CCSS.ELA-Literacy.RST.6-8.4) (CCSS.ELA-Literacy.RST.6-8.7) (CCSS.ELA-Literacy.RST.9-10.4) (CCSS.ELA-Literacy.RST.9-10.5) (CCSS.ELA-Literacy.RST.11-12.4) (CCSS.ELA-Literacy.RST.11-12.9)

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