

River Mapping Teaching Resource

Ages: 10–18 (Grades 4–12)

Materials needed:

- Paper
- Pencil
- Crayons, markers, and/or colored pencils
- Optional: ruler, yardstick, or tape measure
- Optional: compass (many smartphones have a built-in compass app)

Duration: 1.5 hours (includes three activities)

Essential questions:

- What is a map?
- What is a map used for?
- Who uses a map? When and why do they use it?
- Have you ever used a map? If so, what for?
- What are symbols used for on a map?
- What are some connections we can make between maps and works of art?



Image: Frohawk Two Feathers (American, b. 1976). *Map of the Frenglish Kingdom of Novum Eboracum (New York) (We All Got To Have a Place We Call Home)* (detail), 1847. Acrylic, ink, graphite, tea, and coffee on paper. Museum Purchase, 2015 (2015.10).

Part 2: Mapping the Hudson River

Hudson Riverama:

Hudson Riverama is the Museum's environmental teaching gallery focused on the **geography** and environmental history of the Hudson River. Much like a map, the gallery helps visitors navigate virtually through different regions of the River. Moving north to south, Riverama highlights the different habitats and ecosystems located along the River's 315-mile course from Lake Tear of the Clouds in the Adirondack Mountains to New York Harbor and the Atlantic Ocean. Watch two or three short documentaries produced by Oceans 8 Films from the series [The Hudson River at Risk](#) and [Hope on the Hudson](#) that are featured in the Riverama theater.

Discuss:

- What do you observe about the **landscapes** and natural features depicted in the films?
- What more details can you find?
- What **landmarks** do you notice?

Perspective:

The Hudson River Museum collection includes maps of the River and surrounding regions from different points of time in history. Historic maps provide evidence for how the **built environment** in a region has changed over time, as well as how the landscape and land features themselves have been altered or affected by human activity.

The original inhabitants of the lower and mid-Hudson River region, the site of contemporary Yonkers and the HRM, were the Leni Lenape people. Look at the map of [Lenapehoking](#), or "Land of the Lenape." The names on the map are names of smaller groups of Lenape peoples within this homeland. Any time a **cartographer** creates a map, they have a certain **perspective**, or frame of mind, that influences what is included in the work and what is left out. The names shown on the map are those that were recorded by seventeenth-century European explorers, who, like the Lenape, depended on the Hudson River and connected waterways to explore, fish, trade, and travel from place to place.

Look at [Map of the Frenghish Kingdom of Novum Eboracum](#) (New York) (*We All Got To Have a Place We Call Home*), 2015, by Frohawk Two Feathers. The artist created this work of map art as part of a series in which he reimagines and chronicles an alternative colonial history of the Hudson Valley that recognizes fictitious people of color and makes them players in global conflict loosely based on real events.

Compare the Lenape map and Map of the Frenghish Kingdom to a section of the Wade & Croome [Panorama of the Hudson River from New York to Waterford](#), published in 1847. Read the description about this **panorama**.

You can also zoom in on a map section via [Google Arts & Culture](#).

Finally, compare these works on paper with a search of the Hudson River using [Google Maps](#), the widely used **satellite GPS**-powered digital mapping platform. Experiment with different options the platform provides, like the satellite view, local COVID-19 updates and resources, and zooming in and out on different landforms, cities, towns, or villages. Can you locate Yonkers? Can you locate a place you have traveled to or live in?

Discuss:

- What do you notice about these maps? How are they similar? How are they different?
- Can you identify landmarks or landforms on either map that you recognize today?
- What was the purpose for making each map and how do you think that affected their design and details?
- In what frame of mind do you think each cartographer, artist, or group of developers was when they created these maps? What evidence do you have?

Artworks as Maps

The HRM's permanent collection includes actual maps like the Wade & Croome panorama described above, as well as works of art that are inspired by realistic maps and that introduce new perspectives on place, provide additional data or details about specific locales, and/or are visual representations of an area of interest to the creator.

Observe these works and exhibition:

- [Maya Lin: A River Is a Drawing](#), HRM Exhibition, Fall 2018
- [Grand Union](#), Ralph Fasanella, 1955
- [Constellation Series #3](#), Frances Hynes, 1986

Discuss:

- What do you see in these different artworks? What makes you say that? What else can you notice?
- What point of view or attitude does each artist take toward the place(s) they depict in their work? Why do you think they take this perspective? What values or ideas are they trying to communicate to viewers?
- What does the artwork(s) tell you about a specific location? How did the artist provide this information to the viewer?
- How do these different works compare and contrast with traditional maps? Why do you say that?

Part 3: Mapping Yourself and Your Interests (Activity 1)

Duration: 30 minutes

Materials needed:

- Paper
- Pencil
- Colored pencils, markers, or crayons

Introduction:

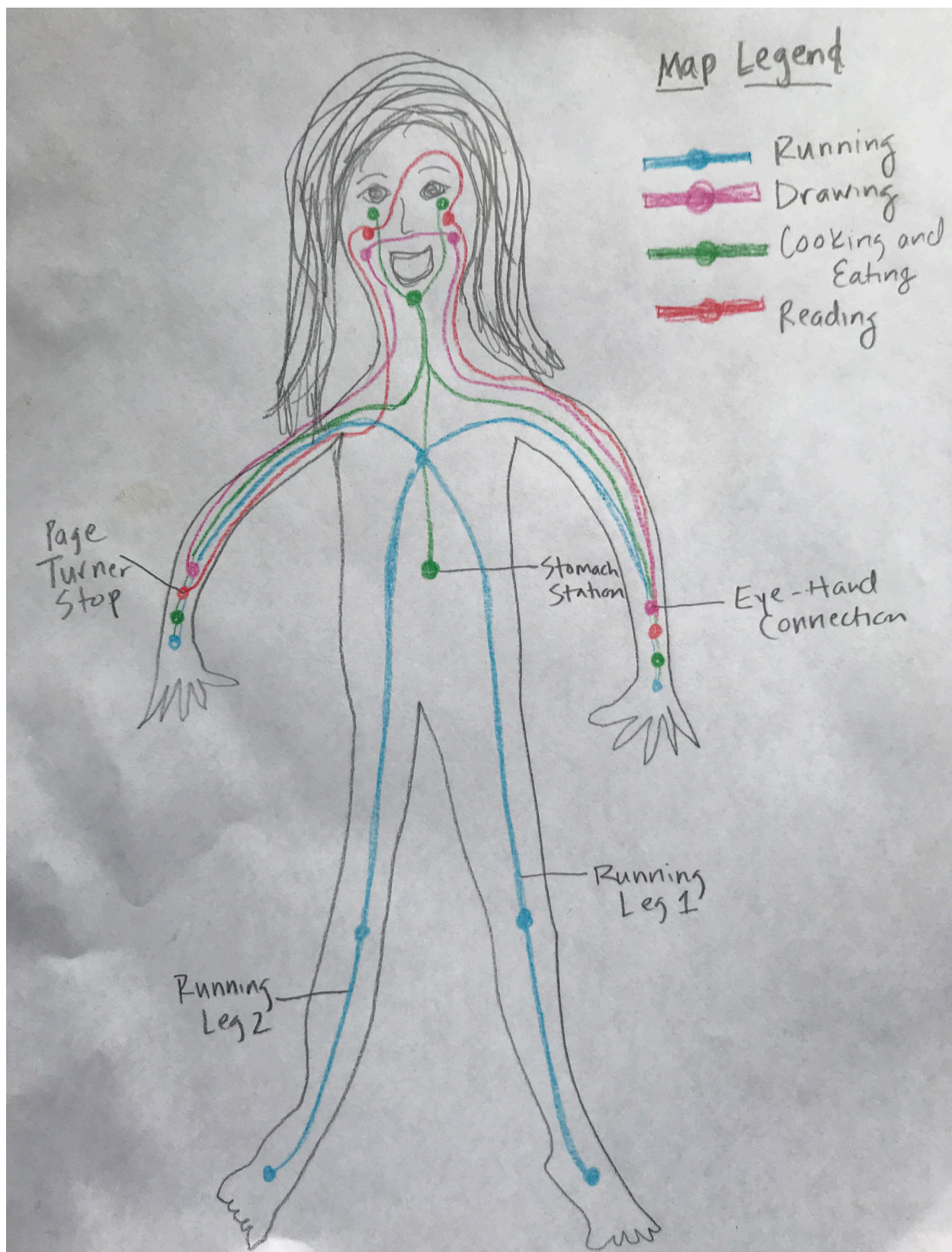
In this activity, you will begin the process of becoming cartographers. Instead of mapping a geographical location, you will be mapping yourself and your interests and talents, making sure to include essential map components in your work.

Procedure:

1. View a selection of crowd-sourced [transit maps](#) as visual inspiration for this activity. Notice the use of color coding for different transit lines, and the use of a map key and labels on the samples you observe.
2. Reflect on your talents, interests, and the activities that you enjoy doing. Choose at least three to highlight in this activity.
3. Draw an outline of your body. It can be life-size, or fit on a sheet of printer paper.
4. Create a map key/legend, with each activity or interest as a designated color.
5. What parts of the body are needed for each activity? Each part is a “stop” on that particular activity line. For example, if soccer is one of your activities, you would have stops at the feet, knees, and head. (If you’re a goalie, you could stop at the hands!) Indicate an activity “stop” with a circle of the same color as the transit line.
6. Map your activities and interests. Add labels. Where do some intersect? What are your reflections on this process?
7. Maps can provide a chronology of change over time in a specific region. They can be thought of in layers. If you create an interest/activity map depicting pre-COVID-19 in contrast with a different version mapping post-COVID-19, what has shifted for you?

Share your work:

Take a photo of your picture and post it to Instagram using the hashtags #MuseumFromHome and #RiverMapping, and tag @HudsonRiverMuseum.



Part 4: Interior Topographies (Activity 2)

Duration: 30 minutes

Materials needed:

- Paper
- Pencil
- Optional: ruler, yardstick, or tape measure

Introduction:

In this activity, you will experiment with contour line maps, depicting the different objects, furniture, and other three-dimensional features of your interior landscape. A **contour map** is used by cartographers to share the three-dimensionality of landforms on a flat paper surface. Hills and mountains are common land elevations; sinkholes and valleys are examples of landform depressions. Each line on a contour map indicates a specific elevation above or depression below sea level. Different colors can be used to indicate a specific elevation, and labels help make the information clear to map users.

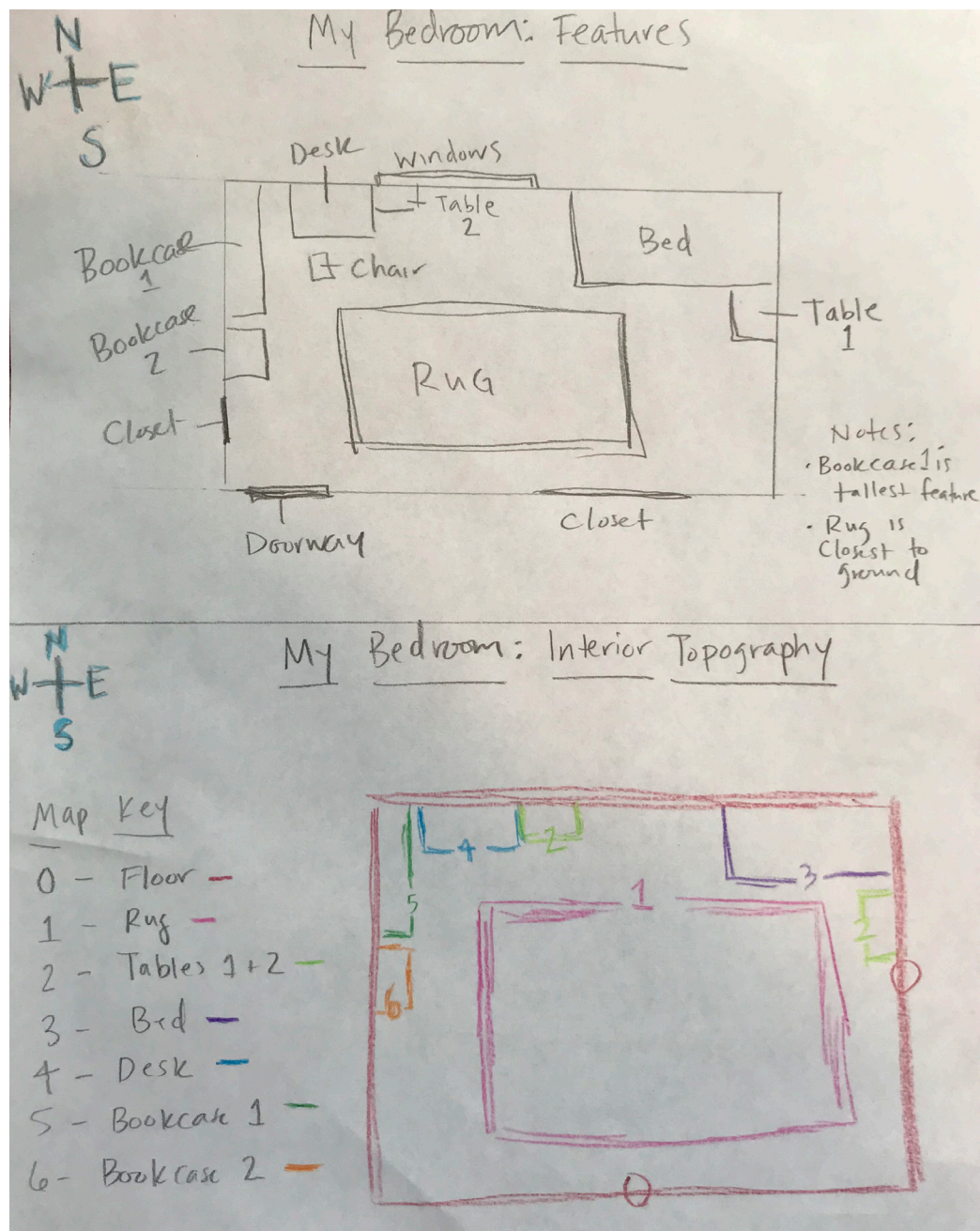
Procedure:

1. Choose an interior space or room in your home, apartment, or current location where you have been spending time during social distancing.
2. Begin by sketching out the features of this space.
 - Can you determine or estimate the height of the ceiling or walls?
 - Can you determine or estimate the square footage of the floor space?
 - What furniture is present? What piece of furniture or collection of objects has the highest elevation in this space? What is closest to the ground?
 - What objects are in this space? What objects are about the same height, relative to the height of the ceiling in this space?
3. Using a compass or a compass app on a smartphone, determine north in your space. Add a **compass rose** to your contour map. North points toward the top of your map. Anything you draw will be from this viewpoint.
4. Experiment with transforming the interior you have observed and sketched into the form of a contour map. Instead of sea level, the floor is measurement 0. Add as many contour lines representing different elevations as you like.

5. Experiment with using directional commands to describe moving an object from one part of the space to another. For example, “Move the book three feet northeast, from an elevation of 2 feet above floor level to an elevation of 4 feet above floor level.” Try communicating in directionals only with someone else at home to complete a simple task.

Share your work:

Take a photo of your picture and post it to Instagram using the hashtags #MuseumFromHome and #RiverMapping, and tag @HudsonRiverMuseum.



Part 5: Illustrations Mark My Spots (Activity 3)

Duration: 30 minutes

Materials needed:

- Paper
- Pencil
- Markers, crayons, colored pencils
- Optional: ruler

Introduction:

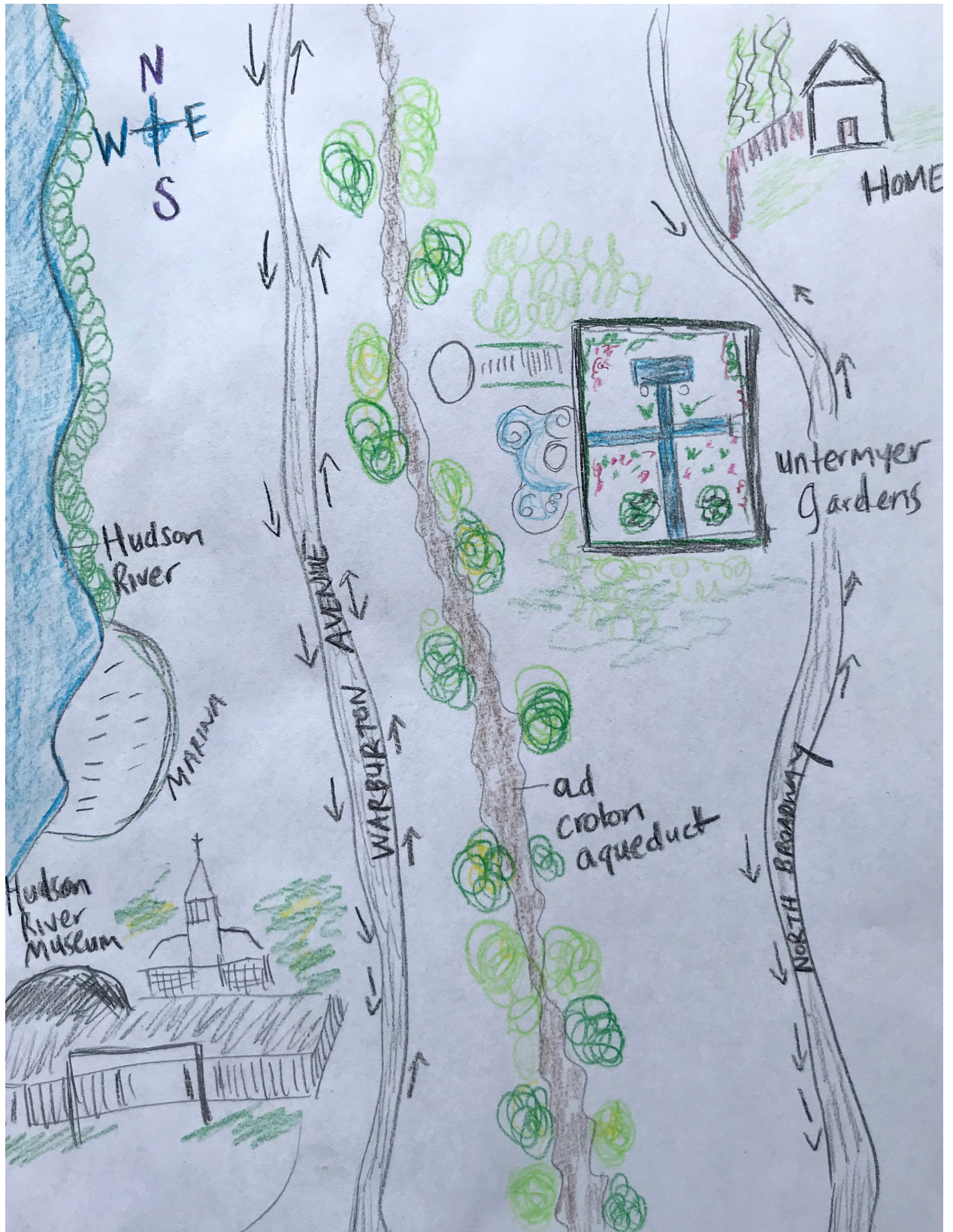
In this activity, you will create an illustrated **panoramic/pictorial map** highlighting your favorite and most visited locations.

Procedure:

1. Begin by reflecting on the places in your immediate region (town, city, or county) that you visit, use, or enjoy the most. What are your personal landmarks? These may be places that are currently inaccessible during social distancing, or they may be places like home or a backyard where you are currently spending a lot of time. School, playing fields, a favorite place to eat, friends' homes or apartments, family members' homes or apartments, stores, playgrounds, etc. are all options.
2. You have the option of using Google Maps or another GPS mapping platform to find and observe these spaces in relation to your home and to one another.
3. Draw a map that includes all of your important places and landmarks. Begin by adding a compass rose with the cardinal directions. What key roads or transit lines are necessary to travel to each place from your home? Can you think of a map key, or legend, to include that helps categorize your spots? What other labels might you include? How can you indicate details about the landscape and different elevations that may be present in your personal region?

Share your work:

Take a photo of your picture and post it to Instagram using the hashtags #MuseumFromHome and #RiverMapping, and tag @HudsonRiverMuseum.



Part 6: Glossary & Further Resources

Built environment: The human-made environment that provides the setting for people's activity, ranging in scale from buildings to cities and beyond.

Cardinal directions: The four principal compass directions: north, east, south and west. Intermediate directions are northeast, southeast, southwest, and northwest.

Cartographer: A person who draws or produces maps.

Cartography: The science or practice of drawing maps.

Contour map: A map marked with contour lines.

Contour lines: Used to determine elevations, contour lines are lines on a map that are produced from connecting points of equal elevation. (Elevation refers to height in feet, or meters, above sea level.)

Compass rose: An ornamental compass that indicates direction (north, south, east, west) on a map.

Geography: A science that deals with the Earth's surface and the ways that people affect and are affected by the natural world.

Lenape: The Leni Lenape are the First Peoples to inhabit the lower Hudson Valley. The Leni Lenape made use of the valley's vast natural resources and network of waterways.

Landmark: A building or place that is easily recognizable or personally significant, especially one that you can use to identify where you are and who you are.

Landscape: All the visible features of an area of countryside or land, often considered in terms of their aesthetic appeal or beauty. Landscape art is a major genre of art and takes many different forms.

Map: A map is a visual representation of an area that uses symbols to highlight relationships between elements of that space such as objects, regions, and themes.

Map key / map legend: Gives you the information needed for a map to make sense. Maps often use symbols or colors to represent things, and the map key explains what they mean.

Navigation: The process or activity of accurately determining one's position and planning and following a route. Maps are essential to navigation, past and present.

Nautical chart: A map that depicts the configuration of the shoreline and seafloor. It provides water depths, locations of dangers to navigation, locations and characteristics of aids to navigation, anchorages, and other features.

Panoramic / pictorial map: A map that depicts a given territory with a more artistic rather than technical style.

Perspective: A particular attitude toward or way of regarding something; a point of view. This can be a physical point of view, or a psychological, emotional, moral, etc., point of view.

Political map: A map that shows the governmental borders for countries, states, and counties, as well as the location of capitals and major cities, towns, and typically bodies of water.

Region: An area or division, especially part of a country or the world, having definable characteristics but not always fixed boundaries.

Sea level: An average level of the surface of one or more of Earth's bodies of water from which heights such as elevation may be measured.

Satellite GPS: The GPS (Global Positioning System) is a "constellation" of approximately 30 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. Services like Google Maps make use of GPS and high-resolution aerial photography to provide detailed digital maps of a variety of perspectives (political, topographical, panoramic Street View, etc.).

Scale: The proportion between two sets of dimensions (as between those of a physical landscape and a map).

Symbol / map symbol: A character, letter, or similar graphic representation used on a map to indicate some object, characteristic, and so on.

Topography: The arrangement of the natural and artificial physical features of an area.

Topographical map: A map showing topographic features, usually by means of contour lines.

Transit map: Used to illustrate the routes and stations within a public transport system—whether this be bus lines, tramways, rapid transit, commuter rail, or ferry routes.

[Maps in the Library of Congress collections](#)

[Maps and Atlases in the New York Public Library collections](#)

[The Norman B. Levanthal Map and Education Center at Boston Public Library](#)

Part 7: Standards

Common Core Learning Standards

English Language Arts

Reading Informational Text:

Key Ideas and Details: CCSS.ELA-LITERACY.RI.K-12.1

Range of Reading and Level of Text Complexity: CCSS.ELA-LITERACY.RI.K-12.10

Foundational Reading Skills:

Print Concepts: CCSS.ELA-LITERACY.RF.K-1.1

Phonological Awareness: CCSS.ELA-LITERACY.RF.K-1.2

Phonics and Word Recognition: CCSS.ELA-LITERACY.RF.K-5.3

Fluency: CCSS.ELA-LITERACY.RF.K-5.4

Writing:

Texts Types and Purposes: CCSS.ELA-LITERACY.W.K-12.1-2

Research to Build and Present Knowledge: CCSS.ELA-LITERACY.W.K-12.7-9

Speaking and Listening:

Comprehension and Collaboration: CCSS.ELA-LITERACY.SL.K-12.1-3

Presentation of Knowledge and Ideas: CCSS.ELA-LITERACY.SL.K-12.4-6

Language:

Conventions of Standard English: CCSS.ELA-LITERACY.L.K-12.1-2

Knowledge of Language: CCSS.ELA-LITERACY.L.K-12.3

Vocabulary Acquisition and Use: CCSS.ELA-LITERACY.L.K-12.4-6

Science and Technical Subjects

Key Ideas and Details: CCSS.ELA-LITERACY.RH.6-12.1-3

Integration of Knowledge and Ideas: CCSS.ELA-LITERACY.RST.6-12.7-9

Range of Reading and Level of Text Complexity: CCSS.ELA-LITERACY.RST.6-12.10

New York State Learning Standards

The Mathematics, Science and Technology

Standard 3: Mathematics

Standard 4: Science

English Language Arts

Standard 1: Language for Information and Understanding

The Arts

Standard 1: Creating, Performing and Participating in the Arts

Standard 2: Knowing and Using Arts Materials and Resources

Social Studies

Standard 1: History of the United States and New York

Standard 3: Geography