

# Lesson Plan:

# Maps and Landforms

*Subject Areas:* Earth Science, Geography, Social Studies

### Science Connections

- Students will learn about the composition and structure of the earth's surface.
- Students will read maps to identify and compare Earth's surface features.

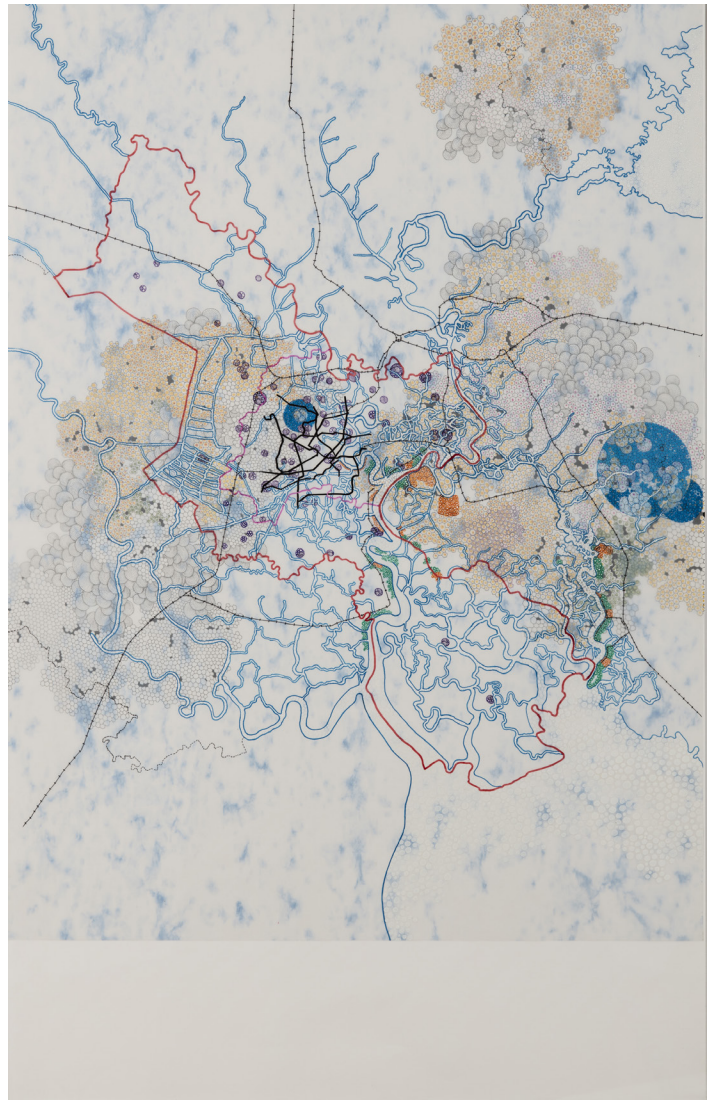
### Guiding Questions

- How can we use maps to understand Earth's features?
- How do maps use visual details to convey information?
- How do artists experiment with maps?
- How can maps and works of art help us understand more about the landforms and features of the Earth?

**Grades 4–6**

JOHNSON

MUSEUM OF ART



### Tiffany Chung

Vietnamese-American, born 1969

*Flora and Fauna Outgrowing the Future*, 2010

Micro pigment ink, oil, and alcohol-based marker on vellum and paper. Acquired through the George and Mary Rockwell Fund, 2014.014.002.

## Learning Standards

Next Generation Science Standards:

<https://www.nextgenscience.org/pe/4-ess2-2-earths-systems>

- 4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.
- 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area, and patterns in the natural world
  - ESS2.B: Plate Tectonics and Large-Scale System Interactions
    - Maps show where things are located. One can map the shapes and kinds of land and water in any area.

NYS Social Studies Standards (PDF): <http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/ss-framework-k-8a2.pdf>

- 4.1: New York State has a diverse geography. Various maps can be used to represent and examine the geography of New York State.
  - 4.1A: Physical and thematic maps can be used to explore New York State's diverse geography.
  - 4.1B: New York State can be represented using a political map that shows cities, capitals, and boundaries

Common Core ELA Standards (PDF):

[https://learning.ccsso.org/wp-content/uploads/2022/11/ELA\\_Standards1.pdf](https://learning.ccsso.org/wp-content/uploads/2022/11/ELA_Standards1.pdf)

- CCSS.ELA-LITERACY.RI.4.7
  - Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on web pages) and explain how the information contributes to an understanding of the text in which it appears.

## Live Lesson Structure

### Warm-Up [10 minutes]

- Divide students into small groups of 3-4 people. Have students pull up Google Earth on individual devices. If students are new to this tool, provide a short introduction on how to navigate it.
- With a timer set for 5 minutes, have students silently write down as many responses as possible to the question "What do you see?" Encourage students to zoom in and out of various locations, including land, water, and different continents.
- Share! Encourage students to share in their small groups, telling their classmates what they noticed, and using Google Earth to point out the details they found.

### Introductory Discussion [5-10 minutes]

- As a class, respond to the following questions:
  - What do we know about the landforms and natural features on Earth's surface from this resource?
  - What visual evidence tells us this information?
  - What questions does this resource leave us with?

### *Learning Partners Exploration [20 minutes]*

- Divide students into groups of two. These groups can overlap with the warm-up activity groups. Have one student from each group pull up Google Earth, while another student accesses National Geographic's list of encyclopedia entries on landforms: <https://education.nationalgeographic.org/resource/landform>
- Ask students to locate examples of **five** different landforms from the National Geographic list on Google Earth. In an online document, students should record: (1) the name of the landform, (2) its definition, and (3) the location where they found it on Google Earth, by copying its URL.

### *Share-out Discussion [10 minutes]*

- Come together as a class. With Google Earth projected in front of the entire class, have each pair of students share one landform they discovered, by zooming in on that location. Have students share the definition and explanation of what the landform is.
- As the teacher, be creative about making connections! If students found landforms near each other, or on the same continent, point that out. If two groups found different examples of the same landform, take a moment to compare the two examples.

### *Discussion [10 minutes]*

- How do you think Google Earth is created? What is its purpose?
  - Give students a simplified overview of how Google Earth uses satellite and aerial photography: <https://www.livescience.com/65504-google-earth.html>
- How does it compare to other kinds of maps we have used? Ask students to share examples of maps they have encountered, either in school or in daily life.
- Culminate the discussion by explaining to students how maps are made for different purposes. Some intended to show the physical features of Earth's surface, some are used for navigation, and some show political boundaries.
- Finally, after emphasizing the importance of maps, prepare students to transition into an explanation of how maps can also be used as inspiration for artists.

### *Large-Group Close Looking [20 minutes]*

- Briefly introduce the activity: looking closely at two works of art inspired by maps and landforms.
- One after the other, project images of the following works of art: Tiffany Chung's *Flora and Fauna Outgrowing the Future*, and Mona Hatoum's *Projection*. For each, ask students to share what they notice. Encourage students to point out as many landforms, and physical geography features they can find. Prompt with questions like: "What bodies of water can you identify?"
- After close looking, ask students to reflect more broadly:
  - How are these artworks different from or similar to the Google Earth image we viewed at the beginning of this lesson?
  - What do these works of art tell us about the land being shown?
  - How are the two map-inspired artworks similar or different?
  - What do these works of art tell us about the way people interact with the environment?
  - What did the creators have in mind when they made these maps?
  - How is a work of art that looks like a map different from or similar to something intended to be a map?
  - In what ways are these maps factual? In what ways are they fictional?

## Supplementary Activities

These activities can be assigned for homework, independent study, or as follow-up lessons.

### *Exploring a River Delta through Maps and Art*

- Read the National Geographic Learning Encyclopedia's entry on deltas (either individually, or as a class): <https://education.nationalgeographic.org/resource/delta>
- Have students explore the Mekong River Delta through Google Earth: <https://earth.google.com/web/@9.93159474,106.12986895,0.09531592a,222100.88485759d,35y,0h,0t,0r>
  - Ask students to construct an explanation for how geologic processes caused the formation of the Mekong River Delta, using visual details they discovered on the map, and information they gained from the encyclopedia entry, to support their explanation.
  - Resources for teachers interested in learning more about the delta:
    - Mekong Basin: <https://www.mrcmekong.org/about/mekong-basin/>
    - *Saving the Mekong River Delta from Drowning*: <https://woods.stanford.edu/news/saving-mekong-river-delta-drowning>
    - *Southeast Asia's Most Critical River is Entering Uncharted Waters*: <https://www.nationalgeographic.com/science/article/southeast-asia-most-critical-river-enters-uncharted-waters>
- Next, have students compare the Google Earth satellite image to Tiffany Chung's *Flora and Fauna Outgrowing the Future*.
  - How did Tiffany Chung represent this area?
  - How are the two visual resources similar or different?
  - What physical landforms can you discover in both the work of art, and the satellite image?
  - Why do you think Chung gave her artwork this title?

### *Create an Artistic Landform Map*

- Provide students with a [simple outline](#) of the state in which you are located.
- Ask students to research five landforms to represent on the map.
- Encourage students to be creative about the colors, symbols, and lines they use. Draw inspiration from the works of art discussed in class to make a visually compelling map.