

VISIONMAKER MODULE 5: INTRODUCTION AND BACKGROUND INFORMATION FOR TEACHERS

Module 5 focuses on climate change. A few anticipated climate change impacts include rising sea levels, melting snow and ice, more extreme heat events, and more extreme storms, rainfall and floods. For the purpose of the sample lessons, we are exploring first what climate change is and its effects on the NYC environment. The main focus will be on understanding how climate change consequences such as rising sea level and increased precipitation will impact the social, political, and environmental sectors of our urban surroundings. Throughout the unit, students will be working towards synthesizing data from various sources to showcase both the risk and the potential mitigation actions NYC residents can take towards reducing the hazardous impact of climate change on our local communities.

In Lesson 1, students will work to first understand the scientific phenomena of climate change and how climate differs from weather. They will analyze data from the World Bank Climate Change Knowledge Portal to see temperature trends over a 112 year time span. This activity is designed to increase environmental awareness amongst students, informing them that our average global temperatures are rising over time, which can have a great many consequences in the future. Students will then explore spatial reasoning concepts to investigate how geography contributes to the effects of climate change. They will analyze topographic/elevation maps at multiple scales to examine the potential ramifications climate change has on NYC in relation to rising sea levels. Finally, they will explore Battery Park City in a case study format on Visionmaker. They will investigate how urban planning contributes to coastal resiliency from the viewpoint of event-based and gradual hazards such as storm surges and sea level rise.

In Lesson 2, students will explore climate change through an environmental justice lens. Often times it is poorer communities that suffer disproportionate amounts of harm when it comes to environmental hazards such as flooding from events like Hurricane Sandy and sea level rise. Students will draw conclusions from census data and maps to demonstrate this phenomenon. Using climate change adaptation strategies, students will have the opportunity to design visions with the goal of creating a more sustainable and just neighborhood for low-income residents in mind. Lastly, students will share out their visions with their classmates and larger school, neighborhood, and city communities to give them a voice through which to be active participants in the discussion on environmental issues.

Throughout these lessons, students will realize the short and long-term threats that climate change poses to NYC. All of our actions have costs associated with them, so how can we contribute to a greener NYC? What aspects of urban planning design can students incorporate into their visions to mitigate the impacts of climate change? Students will be able to analyze various types of data in order to construct well-supported scientific explanations and see connections across multiple disciplines.