REMOTE TEACHING: CONTENT

MƒA
For master teachers
of math and science

Using Project-Based Learning

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As soon as Chaya started teaching remotely, her students challenged her about the point of learning during the COVID-19 pandemic. Chaya recalls her students asking: "Why are we learning at this point, considering what's happening? People are dying. What are we doing?" This pushed Chaya to really think about how she could provide her students with the science content and skills they needed while framing it in a way that felt relevant to them so they could be connected to the learning. Moreover, once Chaya learned the Regents exams were not being administered, she could be less concerned with "covering" all the content they'd be tested on and go into more depth in one major concept.

"It was like creating a connection with them - that we're both working together to something greater than just learning about photosynthesis, and doing it in a way that would motivate them to actually wake up in the morning and sign on to my class and actually complete the assignments."

▶ **How did Chaya make the science content relevant to students in her classroom?**

Chaya decided to use project-based learning for her sustainability unit that spanned a 12-week trimester. Students would use knowledge gained during the unit to redesign NYC to make it sustainable. She used backwards planning and a combination of strategies to provide multiple entry points into the topic. For example, students could access the content through different websites, videos, and readings. Chaya incorporated asynchronous lessons with one-on-one support and regular checkpoints to make sure that students were critically thinking about the content. The checkpoints provided students with a variety of ways to show what they were learning by allowing them to provide information through online discussions (using Parlay), video (using FlipGrid) and through Google Form responses.

Final Project: Sustainable NYC Design Challenge

Project Overview: Throughout the cycle, you have been building your knowledge and gaining resources on the topic of sustainability, renewable energy sources, smart transport, sustainable food options and eco-friendly practices. The final project for this course will be a **Sustainable NYC Design Challenge**—to use all the information you learned to redesign NYC to make it more sustainable and transform the lives of millions of New Yorkers, boost the city's business and protect NYC's natural resources.

What is a Sustainable City?

Nowadays half of humanity – 3.5 billion people – live in cities. By 2030, almost 60% of the world's population will live in urban areas. In the next few decades 95% of this urban expansion will take place in the developing world. The world's cities occupy just 3% of the earth's land, but account for 60-80% of its energy consumption and for more than 70% of its carbon emissions.

- **Sustainable cities** satisfy human needs and minimize the human impact on the environment (carbon footprint). A sustainable city uses less resources and produces less waste than an unsustainable city.
- **Sustainable cities** respect the sustainable development priorities from their social, economic and environmental perspective, and that allows its inhabitants to live in good conditions and in harmony with their surrounding nature.

The Task:

You are hired by the NYC Sustainability Committee to help redesign New York City to make it a more sustainable city where people enjoy living, working and live in harmony with nature. The Committee asked you to come up with a city redesign plan and pitch your plan to a group of New Yorkers. At the meeting, there will be other city designers pitching their ideas as well and the New Yorkers (your classmates) will vote (on PollEv) for which sustainable city redesign plan they think is BEST for their city.

Chaya introduces projects with base slides like this one to make expectations clear for students.

"The way the course was set up was open-ended which allowed students to think broadly about the topic. I was teaching the science so that students were learning about sustainability in a way where they felt connected to the material we were covering in the course."

▶ **Start using project-based learning by following these two pieces of advice:**

1. Start small. First think about what you want to do and what you want your end product to be. Use this to figure out how to scaffold student learning opportunities in multiple ways.

2. Recognize that it can be challenging to figure out how to blend the big concepts and bring in Regents requirements in a way that doesn't take away from the critical thinking or the openness of the problem the students are grappling with.

"COVID-19 is really forcing us, teachers, to think about how we can engage students critically, authentically, and make them owners of their own learning."