The Power of Collaboration

OBJECTIVES

During this lesson, students will:

- **Explore** the potential of collaboration in solving problems related to COVID–19.

- **Analyze** how collaboration is currently helping society, and how it has helped solve STEM problems in the past.

- **Identify** problems that continue to exist today and determine how collaboration could help the world move closer to a solution.

OVERARCHING QUESTION

How does collaboration help solve problems?

MATERIALS

- UN News article or link to share (news.un.org/en/story/2020/11/1077162)

- Challenge handout, one per student

- Devices with Internet access, at least enough for half the class

STANDARDS

ITEAA Standards for Technological Literacy

- **Standard 117: Information and Communication Technologies.** In order to use, select, and understand information and communication technologies, students should learn that:

   - **H.** Information and communication systems allow information to be transferred from human to human, human to machine, and machine to human.

Next Generation Science Standards

- **MS Engineering Design.** Disciplinary Core Idea:

   - **ETS1.A:** Defining and Delimiting Engineering Problems. The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1).

Common Core English Language Arts

- **Reading:**
  - **R.1:** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text

- **Writing:**
  - **W.4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

- **Speaking and Listening:**
  - **SL.1:** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
  - **SL.2:** Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Instructional Note:

The following activity has been designed so you can tailor it to your current mode of instruction.

- The *Introduce*, *View* & *Reflect*, and *Conclude* sections can be presented virtually, by video, or through a shared document.
- The *Challenge* section is designed for students to complete independently at home using the accompanying *Challenge* handout. Students can either print and fill out the handout or answer the questions separately in a format that can be shared with you.

ACTIVITY OVERVIEW

Introduce

1. Begin by asking students: How has the world fought COVID-19? Encourage students to brainstorm with a partner and then share ideas with the class. Record notes on the board as students share.

2. Once all students have shared, add *collaboration* to the list (or circle it if it has already been recorded).

3. Then pass out copies of the UN News article or share the link with students. Ask students to read this article with their partner and annotate (highlight/underline or take notes if reading a digital copy) for details that explain *how* the article believes people should collaborate to fight COVID-19 and *why* collaboration is important.

4. Once students have finished annotating, encourage pairs to summarize their annotations and share with the class: According to this article, how could collaboration help fight COVID-19?

View & Reflect

1. Tell students that they are about to watch a video that highlights an additional example of how collaboration is being used to combat the pandemic.

2. Tell the class that after watching the video, they will be responsible for writing a six-word video title that explains the importance of collaboration. It does *not* have to be a complete sentence. As they watch the video, students should concentrate and focus on its gist. They may jot notes on a piece of scrap paper if it would be helpful.

3. When the video is complete, challenge students to create three different six-word titles that summarize the video. Each one must incorporate why collaboration is important.

    Note: It may be helpful to pull up an online newspaper or news source to show students how titles and headers can summarize stories without being a full sentence.

4. Then ask students to share their six-word titles with a partner. Together, the partners should select one title that they believe best captures the gist of the video and the importance of collaboration.

5. Invite pairs to share the title they selected, and take a moment to compare and contrast what students developed.

CHALLENGE

1. Explain that the class will now investigate additional ways that the world has collaborated to further a cause or lend a hand.

2. Share the *Challenge* handout and review the instructions together before encouraging students to work independently.

    Note: It may be helpful to share a list of local, national, and global online news sources that students can use for the handout's first step.

CONCLUDE

1. When the Challenge activity is complete, invite students to the board to record the collaboration headlines that they created for the final section of the Challenge activity.

2. Once all students have written their headlines, encourage students to take a moment to read them quietly.

3. Wrap up with a class discussion around the importance and potential of collaboration. Ask: Why does collaboration have the power to help us solve all kinds of problems—big, small, local, and global?

Directions: Read the Background section below. Then complete Steps 1–3 as you consider the potential of collaboration.

Collaboration Background

Collaboration is defined as a situation in which two or more people work together to create or achieve the same thing. As people work with others to exchange ideas and information, problem solving and innovation can occur.

While collaboration has occurred as far back as history takes us, recent technological advancements have developed many tools that help us communicate and collaborate with greater ease. Imagine, for instance: Would your parents have been able to collaborate with their peers and teacher in an online classroom when they were growing up? Could your great-grandparents have been able to work from home and still communicate with colleagues in many different time zones?

Not only does an increase in communication technology help us learn and work from anywhere, but it allows thought-leaders, researchers, scientists, organizations, and governments from around the world to collaborate and tackle a wide range of problems together.

Step 1—Survey

How is collaboration helping society right now? Select two online news sources (preferably one local and one national or global news source) and scan the articles for examples of collaboration. Then try to fill in all five rows below.

Headline	Who is collaborating?	What is the collaboration achieving?

STEM Careers Coalition

Step 2—Research

Select two examples of STEM collaboration from the list below and perform Internet research to learn more about each one. Then jot notes to answer the questions in the chart's first two columns before creating your own six-word headline to describe the collaboration.

STEM Collaboration Research Possibilities:

- International Space Station
- Human Genome Project
- Millennium Seed Bank
- CGIAR (Consultative Group for International Agricultural Research)
- International Cancer Genome Consortium
- Additional Idea of Your Choice: _____*

    *Check with your teacher before pursuing!

Who is collaborating?	What is the collaboration achieving?	Create-Your-Own Six Word Headline

Step 3—Apply

Now that you've learned how collaboration has helped the world in the past and present, it's time to think about how it can continue to help the world in the future:

1. Select one of the following categories that interests you:

    _____ Environment   _____ Health   _____ Disaster Relief

    _____ Innovation   _____ Business   _____ Social Change

    Then brainstorm problems in this general area that exist today: locally, nationally, and/or around the world. You may perform Internet research to learn more, if needed. Once you have jotted several problems, circle one that you believe collaboration could help solve.

2. **What** may need to occur in order for this problem to be solved? What constraints (or limits) exist that may make this difficult?

3. **Who** could collaborate to help solve this problem? Consider collaboration among people in the same field, collaboration among people in different fields, collaboration across the United States, and collaboration around the world.

4. **How** could collaboration help solve the problem? Be specific and consider each party's role.

5. If this collaboration is successful, what may be the result?

6. Now imagine the headline: What may a newspaper headline or a video title describing this successful collaboration say?