Middle and High School

Lesson Plan: Explore a Topic: Technology at Work

Overview

Students research a topic related to technology's role in the workplace, create a project, and present their findings.

📊 Learning Objectives

By the end of these lessons, students will be able to:
- Explain how technology creates new jobs and changes the way people work.
- Recognize information and innovation as key drivers of today's economy.
- Describe various ways technology continuously changes the workplace.
- Identify different ways technology is used in jobs that may not be typically thought of as "tech" jobs.
- Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits
- Publish or present content that customizes the message and medium for their intended audiences

🕐 Total Duration	💼 Materials
- 2-5 hours	- Computer with internet access (per student) - Headphones (per student) - A Google account (create an account at accounts.google.com/signup)

Lessons Outline		
Lesson	Duration	Description
1 Choose a Topic to Research	45-90 min	Students choose a topic to explore, then create a document to organize research.
2 Explore the Topic and Create a Project	45-90 min	Students research a topic using the exploration guide, then choose a Google app and build a project.
3 Communicate to Teach the Class	45-90 min	Students prepare to present their research, then use their project to teach the class they they have learned.

🔧 Prep

Before introducing the lesson to students:
- set up a class account at g.co/applieddigitalskills
- create and distribute the class code to the students

📋 Assessments

- Reflection after Lesson 3 to assess what students have learned about technology's role in the workplace.

Tip: A lesson can be completed over the course of a few classes. Each lesson has multiple videos for students to watch and varies in duration.

Tip: Before teaching: In this lesson, each student or group chooses one topic to explore. A set of topics is provided to start. In your "Instructor Dashboard" click into a class you've added. From there, you can edit topic choices and assign topic choices to your students. Refer to the Instructor Dashboard section in the appendix to learn more.

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Lesson 1: Choose a Topic to Research

Overview

Students choose a topic to explore, then create a document to organize research.

📊 Learning Objectives

By the end of this lesson, students should be able to:
- Explain how technology creates new jobs and changes the way people work
- Recognize **information** and **innovation** as key drivers of today's economy
- Describe various ways technology continuously changes the workplace
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📋 Resources

- List of Research Topics
- Appendix

☰✓ Outcomes

- Students identify if they're working alone or in a group
- Students select a topic and exploration question
- Students start an exploration document and copy and paste their topic information
- Students open the Exploration Guide at their own computer and start to research

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☰ Procedure

1. Describe how students will select, research, and present a topic (see Appendix for suggested prompts)
2. Describe the activities and outcomes for the unit: Exploration Guide and Final Project
3. Provide context about technology's role in current events (see Appendix for suggested prompts)
4. Check in with students. Meet 1:1 or in small groups as students watch videos 1-2 (see Appendix for suggested prompts). Approve any topics submitted by students
   - Video 1: Explore Create Communicate, Introduction
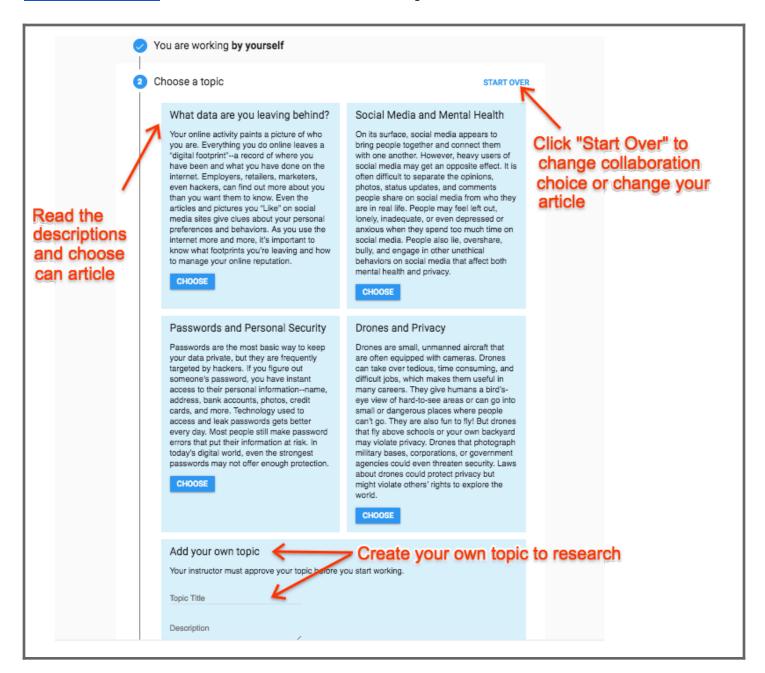   - Video 2: Introduction to the Topics
5. Wrap-Up

Tip: Students can work on this unit independently, or be assigned to groups of 2 or 3. Students will identify whether they will work in groups before they select their topic. Ensure students are sitting next to their partners, then have all students watch the first two videos.
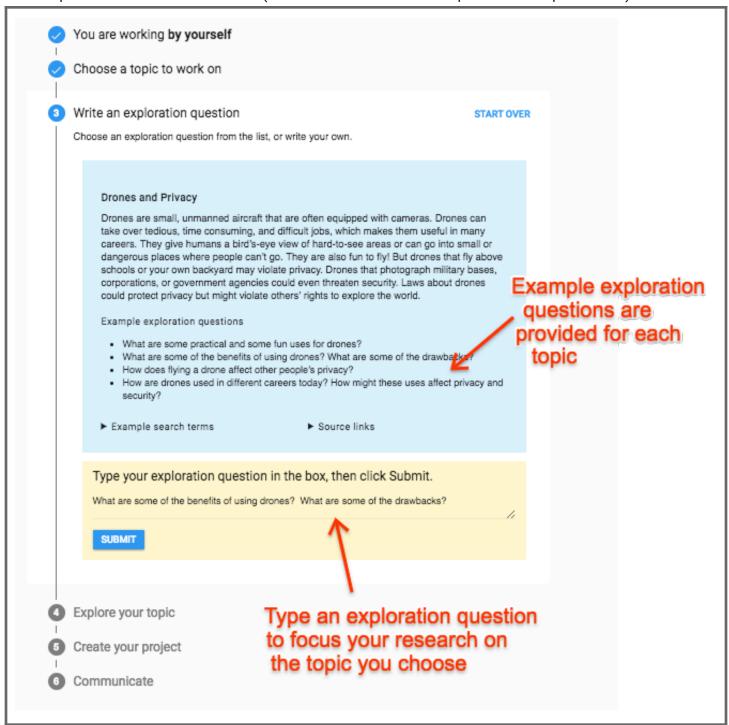
Example Student Outcome

Students work alone or in groups to choose a topic. The student sees four choices, which you can modify or edit; see the Instructor Dashboard section of this document to learn more about how to manage topics and assignment. Students also have the option of submitting a custom topic, which you must approve using the Instructor Dashboard before the student can continue working.
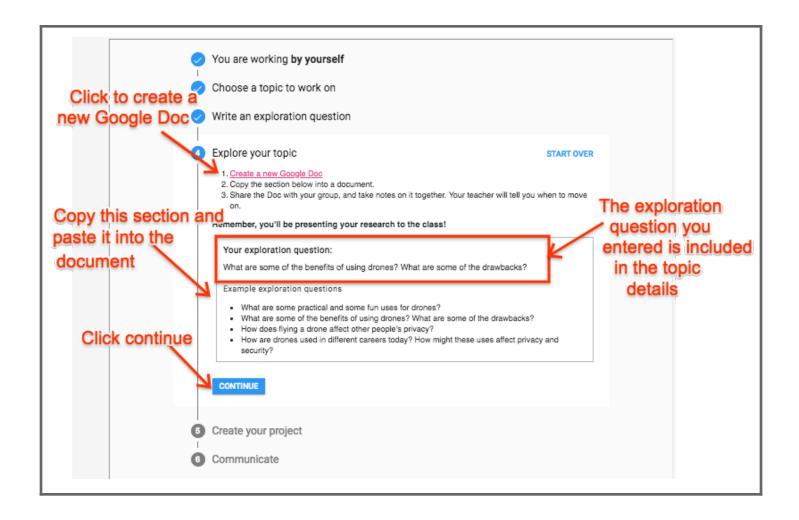
Example Student Outcome (Students write an exploration question)

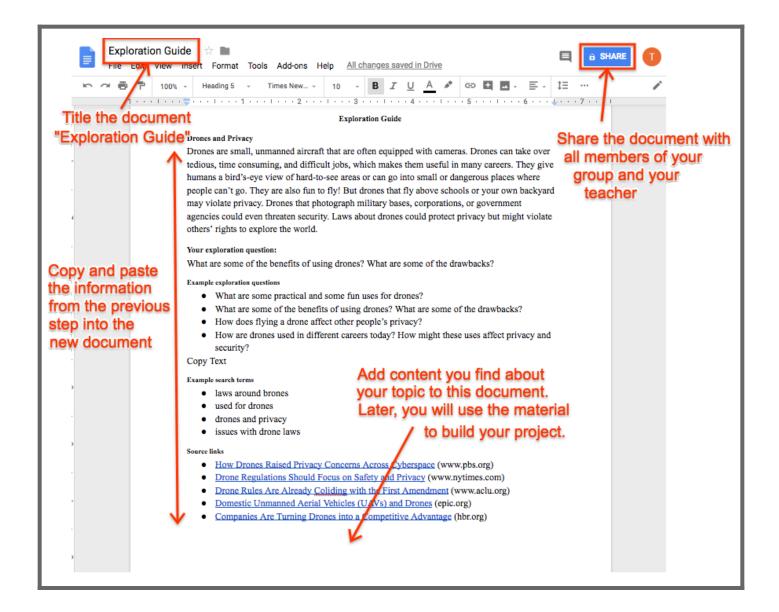# Example Student Outcome (Students review their topic then create a new doc)

Students review their topic, and then click Copy & Continue. A new document automatically opens in a new tab.

Example Student Outcome (continued)

Click on the new tab to access the document. Students use the menu or command keys to paste the copied contents for the topic into the document; then, they title it "Exploration Guide." Remind students to share the Exploration Guide with all members of the group and you. After the document is shared, students can return to their own computers to open the document from their Gmail Inbox or using their My Drive. Then they can start researching independently and add what they find to the Guide.

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Research Topics

Technology determines what information is available, how it is accessed, and what people can do with it. In this unit, students explore how technology changes the way we work and the jobs we do.

Topics	Possible Research Questions
Technology in the Fashion Industry	How has wearable technology changed the fashion industry? What are three jobs in the fashion industry that use technology, and how could you learn the skills needed to do those jobs? How do fashion designers use computer aided design (CAD), and how is this different from designing by hand?
Technology in Sports Careers	How is data used in sports, and what technology skills are needed to become a sports analyst or sports engineer? How is technology used in a specific job in sports such as coaching, marketing, management, athlete, trainer, analyst, statistician, or engineer? How has technology changed how athletes train? How has technology changed how sports teams are managed? How has technology changed how sports venues are designed? How has technology changed how sports equipment is designed?
Technology in the Healthcare Professions	What technology skills do healthcare professionals need to take care of patients and perform their jobs effectively? How is technology used in healthcare jobs that aren't directly involved in patient care, such as healthcare informatics, healthcare management, or healthcare administration? What changes has technology brought to healthcare in the past ten years?
How Technology Impacts Art and Artists	How have computers and technology changed how people create art? What types of technology skills and training are needed for art careers in computer animation, graphic design, commercial art, or multimedia art? How has technology impacted a specific artist, studio, or piece?
Technology in the Construction Industry	What are three areas in the construction field that use technology, and what tech skills are used in those jobs? How has technology made the construction industry more efficient? How are automation, robotics, or digitization used in construction? What are the benefits and drawbacks of using new technologies in the construction industry?
What is Computer Programming?	What are at least three free, online programming courses or instructional sites, and how might you use their offerings? Which programming languages are the most beneficial to learn for jobs and why? How is computer programming used in non-tech industries and jobs?
Technology Jobs and the Military	What kinds of technology jobs or careers are available in the U.S. military? How does the U.S. Military use technology? What technology and computer skills do military personnel need to perform their duties? What opportunities for learning technology skills does the U.S. military (or a specific military branch) offer? How

	might the skills you learn in the U.S. military translate to a civilian job?
The Field of Cyber Security	What are three different jobs in cyber security, and what tasks and skills are involved with each? What skills are necessary to protect companies' data, systems, and employees from cyber attacks? How can you learn the skills necessary to be a cyber security expert? What is "white hat hacking," and how does it relate to future cyber security jobs?
Technology in Farming	How has technology changed farming and food production? What specific jobs in farming or agriculture use technology, and what training and skills are needed to succeed at those jobs? How are computers, software, or other technologies used to grow food or raise livestock?
Veterinary Jobs and Technology	How is technology used in the different parts of veterinary practices, such as diagnostics, surgery, or practice management? What positive impacts has technology had on veterinary care and on veterinary practices? How are software, apps, and mobile devices used in veterinary care?

Lesson 2: Explore the Topic and Create a Project

Overview

Students will research the topic using the exploration guide. Then, students will choose a Google app and build a project.

📊 Learning Objectives

By the end of this lessons, students should be able to:

- Explain how technology creates new jobs and changes the way people work
- Recognize **information** and **innovation** as key drivers of today's economy
- Describe various ways technology continuously changes the workplace.
- Identify different ways technology is used in jobs that may not be typically thought of as "tech" jobs.
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📋 Resources

- Exploration Guide Examples
  - Guide - Sports Analytics
  - Guide - Fashion Tech
    - Guide - Technology in Construction

- Project Examples
  - Project - Sports Analytics
  - Project - Fashion Tech
  - Project - Technology in Construction
  (make a copy to view full project)
- Appendix

☑ Outcomes

Students will:

- Complete their online research about their topic
- Select a Google application to use to build their research project
- Open a new project and shared it if working as a group
- Adda content from the Exploration Guide to the new project

☰ Procedure

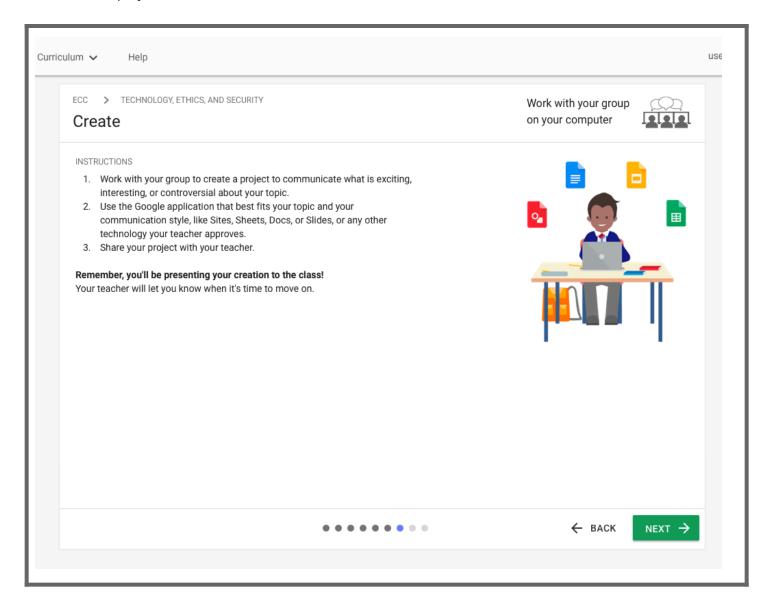1. Introduction (see Appendix for suggested prompts)
2. Check in with students. Meet 1:1 or in small groups as students complete their research. (see Appendix for suggested prompts)

3. Wrap-Up / Discussion (see Appendix for suggested prompts)

Example Student Outcome

The "Create" step instructs students to choose a Google application (Sites, Sheets, Slides, Docs) to use to build their research project.

Lesson 3: Communicate to Teach the Class
Overview
Students prepare to present their research, then use their project to teach the class what they have learned.

📊 Learning Objectives

By the end of these lessons, students should be able to:
- Explain technology's role in current events to reveal how it both informs and transforms our world
- Identify and assess the risks, limits, and opportunities surrounding technology's role in current events
- Explain the role of "citizen journalists" and their effect on current events
- Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits

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📋 Resources

- [Appendix](#)

☑ Outcomes

Students will:
- Reviewed the Communication Step and prepared to present their project
- Presented their research project as a subject matter expert
- Taken an assessment survey

☰ Procedure

1. Introduction (see [Appendix](#) for suggested prompts) - inform students how much time they have to present their projects
2. Check in with students. Meet 1:1 or in small groups as students prep for their presentations
   - If working with a group, students decide which part of the project they will deliver
3. Students present
4. Wrap-Up / Discussion (see [Appendix](#) for suggested prompts)

Example Student Outcome

Curriculum ∨   Help

user

ECC > TECHNOLOGY, ETHICS, AND SECURITY

Communicate

INSTRUCTIONS

Present your creation to the class.

Feel proud that you are teaching your peers something new and important. If you feel a little nervous about presenting, don't worry! Here are some tips to help you prepare:

1. Review your project as a team and pick the slides, pages, or topics you will talk about.
2. Practice presenting your part to your team members and time yourself.
3. Keep an eye on the time so everyone gets a chance to talk.
4. Leave time for questions from your audience.
5. Smile, have confidence, and don't forget to breathe!

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Appendix

Using the Instructor Dashboard

The Instructor Dashboard includes tools to:
- Check student progress
- View and manage topic assignments
- View student groups and students working independently
- Edit topics
- Approve custom topics submitted for review by students
- Auto-assign topics for students to choose

Once you click into a class, check student progress:

1. Use the **Student Progress tab** in the dashboard to see your students' progress:

2. Confirm all students have selected a topic and submitted an Exploration Question about their topic. A check appears for students who have submitted their question:

Lesson: Technology, Ethics, and Security ▾

STUDENT PROGRESS

☐ Name ❓	Lesson 1 Videos			
	1.1	1.2	1.3	1.4
☐ lyannafrey621074 (No progress in last 24 hours)				
☐ testhsstudent1 (No progress in last 24 hours)	✓		📎	✓

Lesson 1 Suggestions
Choose a Topic to Research

Describe how students will select, research, and present a topic:

Say   In this unit, you'll research a topic related to technology in the workplace. Then, you'll create a project to present your research to the class. You'll work on this unit over the next three days. Today, you'll watch videos to introduce the topics, select a topic, and create a document to organize your research. In the next class, you'll continue researching your topic, and create a website, document, or presentation to organize your research. Then on the last day, you'll present what you've made to teach others about your topic.

Provide context about technology's role in current events:

Say   The workplace and economy are constantly evolving due to advances in modern technology. Even if you don't envision having a career in computer science, information technology, or other traditional "tech" fields, chances are your future job will use technology tools in addition to skills such as brainstorming, collaboration, and creativity.

Because technology is always growing and expanding, it will also create new jobs you might never have thought would exist. Today is your chance to explore the ways technology is affecting the workplace, as well as your potential future career. Over the next few days, you may choose to research advances in the fields of sports, health care, agriculture, or the arts. Or you might enjoy discovering emerging tech jobs in construction, the military, and computer programming. On the last day, you'll present your findings and advice by teaching the class about new jobs and changes to the workplace.

Say   Go to g.co/applieddigitalskills and select "Get Started" to log into your profile. Use the Curriculum drop down menu in the upper left corner to find Explore a Topic: Technology at Work. When you see "Lesson Introduction to Explore Create Communicate," you are ready to begin watching the first video.

Watch the two videos, then identify if you are working in a group. Next, choose a topic, and then begin your research. By the end of today's class, you should have selected a topic, created a document to organize your research, and have started your research.

Lesson 2 Suggestions

Explore the Topic and Create a Project

Intro / Review	At the start of class, inform students how much time they have to research and when they should move on to creating their project. Students will research their topic from their own computers, and will add content about their topic to the exploration guide. Remind students that they will create their project using materials they find now and add to the guide.
Engage	- What is your exploration question? - What have you added to the exploration guide? - Why did you select this Google application for your project? - What is most important for people to know about your topic?

Lesson 3 Suggestions

Communicate to Teach the Class

Intro / Review	At the start of class, inform students how much time they have to present their projects. If working in groups, all students should speak about a part of the project. When students present, you can display their project to the class, so they can use it to teach their peers what they learned. Please note, if you have a large class, consider having students present their projects to each other instead of to the entire class.
Engage	- What part of the project are you presenting? - Do you get nervous when speaking in front of others? - What tips did you learn from the website to help you stay calm and focused? - Will you take questions from your audience?
Questions after Presenta-tions	- What did you like the most about presenting your project to your peers? - How did you use public speaking skills while presenting? - What is one example from your presentation where your research helped you to explain something about your topic? - What did you like about the project you made? - What was something new you learned during your project?
Wrap-Up	Summarize the lesson and celebrate that students created an exciting project using the skills they learned.
Say	In this unit, you learned from your own research and from your peers about some of the ways technology is creating new jobs and changing the way we work. Each of you thought about the topic, researched it, then built a project using a Google application to communicate with your peers about the topic
Ask	- How does your topic relate to the real world? - What are some new careers that have emerged as a result of advances in technology?

- What is a new idea you had because of a classmate's presentation? Did you learn new information that helps you better understand how technology is reshaping how we do our jobs?
- What tips did you learn from your classmates that you plan to use?