

Lesson Plan: Inventing and the Industrial Revolution

Grades and Subjects

Grade 5 Social Studies Focus with ELA and Science themes

Topic

The Industrial Revolution and Inventing through Informational Text

Conceptual Understanding

- The Industrial Revolution, urbanization, and access to resources contributed to the United States becoming a world power in the early twentieth century.
- The practices of science and engineering support the development of science concepts, develop the habits of mind that are necessary for scientific thinking, and allow students to engage in science in ways that are similar to those used by scientists and engineers.
- A text can be used to understand multiple perspectives and how to solve a complex problem.

Primary Standards/Indicators

ELA

5-RI8.2 Apply knowledge of text features in multiple sources to gain meaning or solve a problem.

Social Studies

5-3.1 Explain how the Industrial Revolution was furthered by new inventions and technologies, including new methods of mass production and transportation and the invention of the light bulb, the telegraph, and the telephone.

Secondary Standards/Indicators

ELA

5-RI7.1 Compare and contrast how events, topics, concepts, and ideas are depicted in primary and secondary sources.

Social Studies

5-6.4 Explain how technological innovations have changed daily life in the United States, including the changes brought about by computers, satellites, and mass communication systems.

Note - This lesson also covers many Science and Engineering indicators

Academic Language

Vocabulary

- Industrial Revolution
- Cost
- Benefit
- Environment
- Resources
- Primary Source
- Secondary source



Objective/Language Function

- Explain problem and solution in text and be able to distinguish the difference with cause and effect.
- Synthesize information about the Industrial Revolution in order to develop a new invention.
- Infer the impact of how inventions have impacted daily life.

Assessment Plan

- Pre-Assessment-
 - Students will complete an anticipation guide that covers questions on the costs and benefits of technology, and the impact of inventions on people and the environment. These will be agree or disagree questions that will provide insight into current levels of understanding. This will not count as a grade.
- Post-Assessment-
 - Students will refer back to the anticipation guide. They will complete the “after” portion at this time to see how their answers have changed. Additionally, they will need to complete the exit ticket questions.
- Criteria for Mastery-
 - Student is able to successfully read to determine the solution to a problem.
 - Student is able to distinguish the costs and benefits of a new invention.
 - Student can explain several inventions that were created during the Industrial Revolution and how technology impacts life for the average American.

Materials

- Anticipation guide
- Padlet
- *The Industrial Revolution for Kids: People and Technology the Changed the World*, by Cheryl Mullenbach
- Topic cards (print enough for each student to get one topic)
- Cardboard
- Tape
- Glue - Can use hot glue guns
- Construction paper, popsicles sticks, balloons, string, gauze, etc.

Teacher Preparation

This lesson will serve as a review of the Industrial Revolution but will also push students to think of real life scenarios where solution oriented thinking is required. The lesson can be used to help reinforce the importance of using an informational text in order to better understand complex ideas and themes. Students will be required to focus on a theme and read about it in the context of the Industrial Revolution then apply it to modern day.

Due to time constraints this lesson could be divided several days, with one lesson focusing on ELA and the next several devoted to planning and construction of the building. It is particularly helpful to have materials set and ready to go in order to make this lesson run smoothly.



Meat of Lesson

● **Hook**

1. Think of a time you helped make or build something. What did you build? Why did you build it?
 - a. Students record answers on Padlet.
 - b. Next, students turn and talk to share answers. The instructor may call on a few students to share their examples.
 - c. The instructor should highlight the **why** for each example. Usually humans build or make things to solve a problem. What problem did they solve when they made or built something?
2. Today we will read parts of *The Industrial Revolution for Kids*. This text will serve as an introduction to the lesson and includes primary and secondary sources, along with pictures, charts and graphs.
 - a. Read the introduction text to students.
 - b. Discuss book. (See discussion guide for questions)
3. Students will then be divided into groups of approximately 4 students. Each group will be given a topic from the following list:
 - a. Communication
 - b. Transportation
 - c. Everyday Life
 - d. Kids
 - e. Work
 - f. Entertainment

Students will need to use the text to read about their topic and answer the questions on their handout.

4. **Introduction to lesson:** Just like we saw at the beginning of our lesson, inventors built something to solve a problem. Today you will be the inventor. You must build a structure that solves a problem in the community. Just like the inventors of the Industrial Revolution had to create something new to improve daily life, you will also need to solve a problem.

● **Brainstorm**

1. First, students should brainstorm a new invention using their planning paper. Working with their group, they should write the topic they have been assigned. Next, they must list problems that were solved about this topic during the Industrial Revolution and new problems caused during the Industrial Revolution. Finally, they must decide whether the costs of the Industrial Revolution were with the benefits.
 - a. Groups should work together during this part and have a discussion in order to make their decision.
2. Next, they should sketch their solution design on paper. Once this is complete they may gather materials.

● **Prototype**



1. Students will work in groups. Each student will receive cardboard, scissors and tape. They will use these materials to build their design.
 2. After they've done this, they may add decorations to their structure. They may cut, paste, draw, etc.
 - i. Students that struggle with this should be encouraged to talk with others who are having success designing their structure. At this point the teacher should try to step back and allow students to problem solve.
 3. Once students have put all of the pieces together, they should review their work. Does the object work? Does the object solve a problem? How can it be improved?
 - i. Instructor should be asking these questions of groups. If anyone finishes early, ask them how they can further improve their building.
- **Share**
 1. Each student should be ready to talk about the problem and solution for their invention. Students then show off their inventions. Ask them to talk about what problem they chose to solve and how their invention solves that problem. (Can be done as a whole class or in table groups)
 2. Instructor asks for feedback- What went well? What made this challenging?
 - **Synthesize**
 1. Bring students back together for a final discussion. During this conversation, students will discuss the process of making. *See discussion guide for questions.*
**Note- Three questions are also included on the back of the anticipation guide. It is recommended that students write their answers for these three.*
 2. Finally, have students complete the anticipation guide.

Supports for Student Learning

Accommodations

- **ELs**- Provide labels and written directions for each of the steps. The instructor can also use props to further help students understand major concepts and instructions. Due to the visual and hands-on nature of this lesson, there is little written work but it may be necessary to provide word sort or story in another language depending on student's present level.
- **Grade Level adaptations**- Stencils can be provided to scaffold for those that need more support. Definitions can be introduced and practiced ahead of time. Those that need help explaining their building can develop a script.
- **Advanced students**- Those students who are able to grasp these concepts quickly will be asked to incorporate Little Bits into their building. This can serve as a review on the electricity unit and add a level of complexity.
- **Additional supports**- As needed.

Discussion Guides

- Hook- While or after reading, can ask students these questions:
 - What was the Industrial Revolution?
 - What were some of the big changes that happened during this time period?



- Why is it helpful to read letters and newspapers or look at pictures from the time period?
- What were some of the benefits of the Industrial Revolution?
- What were some of the costs (negatives) of the Industrial Revolution?
- Synthesis- Ask students:
 - What went well and what was difficult about making the building/structure? *(Allow them to share their answers and see if any talk about how they adapted their invention.)*
 - Were you like an inventor today? Why or why not? *(Stress the idea of problem and solution)*
 - How do our inventions relate to the topic your group was assigned? *(Answers will vary)*
 - What limitations might real life inventions have? *(This can be about during the Industrial Revolution or modern day. Discussion of cost, limits of technology etc)*
 - How does this lesson connect to science? *(Answers will vary but want them to realize that they've gone through the design process.)*

More to Explore (Resources)

<https://educators.brainpop.com/bp-topic/industrial-revolution/>

<https://americanhistory.mrdonn.org/industrial.html>

<https://www.kidsdiscover.com/free-lesson-plans/tq-industrial-revolution/>

https://www.tes.com/lessons/td4r7Efu8JE_Hw/5th-grade-industrial-revolution

<https://study.com/academy/popular/industrial-revolution-lesson-plan.html>

<http://renovatedlearning.com/2016/10/24/cardboard-challenge-2016/>

