

The Age of Invention: An Industrial Revolution Assessment Box for BC Social Studies 9

Teacher Notes and Additional Activities

The arrival of new BC Social Studies curriculum is a great opportunity to re-examine teaching and assessment practices. At the Pacific Slope, we have been working towards a new model of assessment that emphasizes working with evidence, with sources, and is less about recall. Starting with the end in mind, we use source-based, open-ended questions to explore content, motifs, and guiding ideas in our courses. Some of these questions are about the **KNOW** -- what is going on here? what information does this source provide, and what questions does it generate? Some of these questions are about the **DO** -- apply critical thinking skills, mainly the "curricular competencies" featured in the new curriculum.. Some of the questions are about the **UNDERSTANDING** -- relating learning about the source, and the topics, information, and interpretations behind it, to larger themes from the course including the Big Ideas or Essential Questions.

Students can get to know the Industrial Revolution in many ways

As a phenomenon:

- A historical event that changed the fate of Britain and the world, with a multi-faceted ripple effect on history even to the present day
- A time of great social upheaval and change, affecting life in the countryside and cities, for all classes in society and especially those who worked in factories and those who had to move as a result of industrialization
- A economic revolution that saw one invention lead to another, an expansion of the “mercantilist” model, changes to the class system, and the transformation of Britain into the workshop of the world

A problem to be solved:

- Why Britain? — identify and explain the geographic, economic, and cultural conditions that led to industrialization in Britain?
- A problem of geography: How did the Industrial Revolution change the landscape of Britain? What patterns of environmental exploitation started then and continue to this day? What has been the long-term effect of industrial pollution?
- A problem of society — this is the “so what?” approach. how did each of the main turns and events of industrial revolution impact the people who lived in Britain; how did continued industrialization (even to the present day) affect working and social conditions

As a collection of case studies or topics that each have common themes and interconnections:

- Age of Invention
- Cottage vs Factory System
- Enclosure, Clearances, and Rural-Urban Migration
- Changes in Agriculture
- Changes in Textile Industry
- Changes in Transportation
- Changes in Power and Steam
- Changes in Iron and Manufacturing
- Changes in Social Conditions
- Changes to Working Conditions and Labour Laws
- Changes to the Environment
- Changes to Wealth and Global Power
- Global Migration and Changes in Populations
- etc.

An opportunity for critical thinking:

- establish significance — e.g. How did the Industrial Revolution turn Britain into the workshop of the world?
- use evidence — e.g. What do newspapers during the IR tell us about attitudes about factories and attempts to reform working conditions?
- identify continuity and change — e.g. How did the impact on the environment during the Industrial Revolution compare with modern forms of industrial exploitation?
- analyze cause and consequence — e.g. What was the impact of steam power on the growth of factories?
- consider perspectives — e.g. How different was life for the poorest classes in Britain before and after industrialization?
- understand ethical dimensions — e.g. Why has the developed world achieved so much in terms of labour rights but is still tolerant of terrible working conditions in developing nations?

Strategies for learning

Web Activity:

1. Place an essential question in the middle of the paper, e.g. Why Britain? What were the causes of industrialization in Britain? What was the short and long term impact of the Industrial Revolution? Why do many historians argue that the Industrial Revolution in Britain was one of the most important events in human history?
2. Create the first ring of the web around themes, e.g. geography, culture, economy, society, power, innovation
3. Create the second ring around evidence, e.g. abundant coal, mercantilist system, available capital, availability of cheap labour, existing class system, climate of inventiveness, etc.
4. Create the third ring around details, e.g. explain the previous idea, offer examples, link the item to specific inventions, short-term and long-term impacts, etc.

Poster Inquiry Approach:

1. At the beginning of the unit, develop 4-7 driving questions (a list of open-ended questions that explore the main aspects of Industrial Revolution) and place each one at the top of a chart paper on the classroom wall. One approach is to use the six critical thinking concepts as the basis of each chart.
2. As the unit progresses, student place stickies with evidence to support each question on the appropriate chart paper. They could include sub-questions, links to the other stickies, and other ways of “making thinking visible”
3. A reproduction (e.g. image) or the chart papers themselves can be used as a prompt/resource for assessment.
4. Alternately, this could be done as a group review activity on 11”x17” paper, or as a whole-class review activity with each station acting a station, or as a formative or summative assessment item unto itself.

Using the items in the Assessment Box

1. Timeline challenge. Students are given collections of images and have a set amount of time to put them in the order of events, e.g. seed drill, coke-smelted iron, Newcomen steam engine, flying shuttle, spinning jenny, Watt steam engine, cotton gin, telegraph, Bessemer Method, etc. Looking up when something is invented isn't necessarily the point, it is about figuring out how some things were necessary before other things could take place. Students should have to explain how one thing led to another, using their timeline as a prop. If this is done as a group activity, each group of 4-5 students should receive 6-10 images
2. Connections. Students take images (perhaps after doing the timeline challenge) and put them into groups of 3-4 based on connections. For example, Crompton's mule, Arkwright's machines, Watt's steam engine, and Cartwright's power loom. They then explain (in writing or as a short presentation or speech) how the items are connected.
3. Metonym/Magazine. In poetry and literature, a metonym is a word or expression that is used a substitute for something else with which it is associated. For example, Ottawa is a metonym for the federal

government of Canada. In this activity, one part of the Industrial Revolution is chosen to represent the whole of the Age of Invention and Industry. Students are each given an image and are asked to prepare a 2-minute “pitch” as to why their image should represent the Industrial Revolution. Perhaps it was the most important, perhaps it created wealth, or pollution, or problems, or led to other inventions, or was the pinnacle of achievement in a certain area, or can be connected to all the other events and themes of the Industrial Age. One way to set this up is to say that one object or idea is going to be on the cover of a magazine about the Industrial Revolution and the students have to make a case as to why “their’s” should be on the cover. If their pitch is done as a one-page written piece (along with image/s), the class could actually assemble the magazine and vote on which one makes the cover. Articles could also be written about long term impacts such as pollution, global trade, of labour laws.

4. Exhibition. Taking the “Metonym/Magazine” idea in another direction, this activity could also be done as a museum exhibition with one piece chosen for the marquee image (the huge banner that hangs outside the gallery, the poster that goes up on walls in public, and the pamphlet that gets sent out to advertise the event). The class could actually stage an exhibit, with each student standing by their images ready to explain it’s role (metonymic or otherwise) in the Industrial Revolution. If the class has access to a 3-D printer or construction materials, the objects could be actually be reproduced.
5. Test Use A. Give students a few objects from the Assessment Box -- same or different for each -- or reprint the objects onto a test document. The items should be themed, e.g. inventions, examples of transportation, etc. For each item, use a standard question that recreates some of the inquiry used in the unit. For example: How could this item be seen to represent the Industrial Revolution as a whole? What led to this invention being possible and having a practical use? What impact did this invention (or idea) have on _____ (lives of working people, growth of industry, movement of people and goods, social conditions, etc). Evaluate the student writing with a 4 or 5 point rubric. Done correctly, the teacher does not have to make or photocopy a test, just hand out items and write the test questions on the board. Students can respond on looseleaf, indicating which Assessment Box items they are using.
6. Test Use B. Give each student the same Assessment Box items as prompts (or display them in the class for all to see). Students are then given one

Simulations:

1. Debate between farm owners and farming families/workers around the issue of Enclosure
2. Assembly-line game -- two teams compete on assembly lines to manufacture Model Ts. They have to cut the parts from a (paper) template, arrange them together to make a car, glue the parts, colour them, and have them pass an inspector. The class can be arranged in two lines of desks for this purpose. A factory owner keeps things moving. Meanwhile, another small group (2-3) has access to a variety of paper, example pictures, and colouring or decorating tools. Their job is to create a real “work of art” luxury car, perhaps a Rolls Royce.

Counterpoint:

Take one of the Essential Questions (see above) and work through (as a class, in groups, or individual students) a counter-argument. For example, think about “Many historians argue that the Industrial Revolution in Britain was one of the most important events in human history.” What other events can vie for this title? What else might have been even more important and why? The topics can be seeded, or students can try to figure this out for themselves. It is not hard to google one’s way into a list of contenders, e.g. establishment of Christianity, The Black Death, etc. Maybe the answer changes depending on perspective, e.g. is global power more important than quality of life? What if the criteria was environmental impact? Accumulation of wealth? Human happiness and progress towards a peaceful equitable future? Human despair, loss of life, or movement towards a terrible apocalyptic future?

Impact on Culture and Identity

It soon becomes obvious to students that Industrial Revolution has had a big impact on the world. Sometimes this importance finds it’s way into literature, cinema, music, art, pop culture, and other forms of cultural

expression. This began during the Industrial Revolution itself and continues to the present day. In particular, there are numerous references to the social conditions of the Industrial Age (think Charles Dickens/*Hard Times* and *Oliver Twist* or Victor Hugo/*Les Miserables*). It is also possible to find references to key inventors/inventions, the “glory” and global power of Industrial Britain, and many examples of the immigrant experiences brought on by events such as the Irish Potato Famine, the Scottish Clearances, and the mechanization of jobs during the rise of the factories in the 19th century. As a teacher, try to find some of these cultural references to objects, people, events, and themes from the Industrial Revolution. Modern ones, especially, will be engaging for students. You could also have the students find the cultural references and have the students do an activity like the one below to get the most out of the reference sources. If you have time, laminate and add the sources to the Assessment Box so they can be used again.

Cultural Impact Activity

Start by taking an example of the Industrial Revolution in modern culture and offer interpretations as a teacher. What do the references mean? To who or what do they refer? Are there difficult elements that require prior knowledge to understand, or further information (kind of like an “inside joke”)? Why are the things being referred to significant, what impact did they have? Then, identify a few more examples and work through the connections together. After that, assign a few more examples (ones you found or they found) and have students make the connections themselves with some help from you. Lastly have the students choose their own cultural reference (or one from the Assessment Box) and explain/defend the connections to the Industrial Revolution on their own. This last step could be in a test situation (see Using the Assessment Box #5 above)

A great example of the Industrial Revolution in a subsequent cultural expression is the London 2010 Olympics Opening Ceremony. It is filled with references to the past, and connections related to how the past has shaped the present. The Specific Section referring to the Industrial Revolution is called “Pandemonium.” There are youtube clips that provide a highlight of Pandemonium (search for it), or watch the whole segment here: <https://www.youtube.com/watch?v=4As0e4de-rl>. On this video, the focus turns to Industrial Britain from 16:18 Isembard Kingdom Brunel steps out of the carriage to the tune of “Jerusalem” to 34:12 where the origin of the term pandemonium is explained. There are numerous online guides that can help do the job of explaining the various elements in “Pandemonium” to students, if nothing else read up a bit on this Olympic spectacle before jumping into it with students.

Progressive Inquiry Model for Working with Sources

Some of these activities benefit from the use of a “gradual release of responsibility” model:

1. Teacher does, students watch
2. Teacher does, students help
3. Student does, teacher helps
4. Student does, teacher watches