

Biography of an Inventor or a Scientist

Mod.2.2

TIME

180 minutes

OVERVIEW

Students research an inventor or a scientist and write a short biography of this person.

LEARNING OUTCOMES

Through this learning experience (LE), students will achieve specific learning outcomes (SLOs) in various subject areas. Consider the intent of this LE and your choice of instructional and assessment strategies to determine which SLOs students may achieve, in addition to those identified.

English Language Arts

Consider the intent of this LE and your choice of instructional and assessment strategies to determine which SLOs students may achieve, in addition to those identified below:

- 2.3.1 *Forms and Genres* — Recognize key characteristics of various forms and genres of oral, literary, and media texts [such as novels, biographies, autobiographies, myths, poetry, drawings and prints...].
- 3.2.5 *Make Sense of Information* — Use organizational patterns of oral, visual, and written texts [including main ideas and supporting details, explanation, comparison and contrast, cause and effect, and sequence] to construct meaning; skim, scan, and read closely to gather information.
- 3.3.2 *Record Information* — Make notes on a topic, combining information from more than one source; reference sources appropriately.
- 4.2.1 *Appraise Own and Others' Work* — Share own stories and creations at appropriate times during revision and use criteria to provide feedback for others and to revise and assess own work and presentations.
- 4.2.2 *Revise Content* — Revise to eliminate unnecessary information.
- 4.2.4 *Enhance Artistry* — Choose language, sounds, and images [including transitional devices] to enhance meaning and emphasis.
- 4.2.5 *Enhance Presentation* — Prepare detailed and organized compositions, presentations, reports, and inquiry or research projects using templates or pre-established organizers.
- 4.4.1 *Share Ideas and Information* — Share information on a topic with class members in a planned and focused group session using a variety of strategies [such as interactive dialogues, demonstrations, dramatizations, audiovisual and artistic representations...].
- 4.4.2 *Effective Oral Communication* — Use appropriate volume, phrasing, intonation, non-verbal cues [such as body language, facial expression...], and presentation space to enhance communication.
- 4.4.3 *Attentive Listening and Viewing* — Demonstrate critical listening and viewing skills and strategies [such as recognizing main idea and details, identifying inference...] and show respect for presenter(s) through appropriate audience behaviours [such as giving non-verbal encouragement, responding to emotional aspects of the presentation...].

Science

Consider the intent of this LE and your choice of instructional and assessment strategies to determine which SLOs students may achieve, in addition to those identified below:

- SLOs related to Scientific Inquiry or the Design Process in Cluster 0: Overall Skills and Attitudes.
- 6-1-15 Identify and describe contributions of scientists and naturalists who have increased our understanding of the diversity of living things.
- 6-4-03 Identify Canadians who have contributed to space science or space technology, and describe their achievements.

Social Studies

Consider the intent of this LE and your choice of instructional and assessment strategies to determine which SLOs students may achieve, in addition to those identified below:

- 6-KI-021 Identify various individuals from Canada's past and present, and describe their achievements.

ICT LITERACY SKILLS AND COMPETENCIES

Consider the intent of this LE and your choice of instructional and assessment strategies to determine which skills and competencies students may achieve, in addition to those identified below:

- basic operating skills
- communicating electronically
- concept mapping
- inquiry using electronic sources
- publishing electronically
- word processing

SUGGESTED LEARNING RESOURCES

Software

- word processing
- concept mapping
- email
- web page authoring

Internet

- IMYM Links Database: <<http://www.edu.gov.mb.ca/ks4/tech/imym/resources/links.html>>
- Search the Internet using the search terms "biography scientist" and "biography inventors" or using the name of a specific inventor or scientist.

CD-ROM

- electronic encyclopedia

Print

- individual and collective biographies of inventors and scientists (see Biographies in Selected Bibliography)
- Appendix C: Index of Teaching and Learning Strategies and Tools
- Manitoba Education and Training. *Grades 5 to 8 English Language Arts: A Foundation for Implementation*. Winnipeg, MB: Manitoba Education and Training, 1998. (See Prepare and Share Expository or Informational Text, Grade 6, 378.)

BLMs

- BLM Mod.2.1#2: Five-Step Revising and Editing Checklist

- BLM Mod.2.2#1: Venn Diagram

TBLMs

- TBLM Mod.2.2#1: Suggested Lead Statements to Discuss Personality Traits
- TBLM Mod.2.2#2: Biographies and Autobiographies
- TBLM Mod.2.2#3: Observation Checklist for Speaking and Listening Skills

Materials

- cash register tape

SUGGESTIONS FOR INSTRUCTION

Preparation and Set-up

- Collect and display biographical material about male and female inventors and scientists, encompassing a wide range of subjects and cultural backgrounds, including Aboriginal perspectives. Ensure that students have time to access the materials before starting this LE. Ask students to write journal entries to respond to the material they peruse.
- Make a wall chart entitled Prepare and Share Expository or Informational Text (see Print resources suggested for this LE).

Activating Strategies

- Select and read excerpts from four or five biographies that exemplify characteristics of biographies (see TBLM Mod.2.2#2: Biographies and Autobiographies). Choose excerpts from print material, the Internet, and electronic encyclopedias. Students work alone or in pairs to note similarities and differences between the excerpts, using BLM Mod.2.2#1: Venn Diagram or concept-mapping software.

Examples:

- **Similarities:** chronological order, emphasis on life achievement, mention of role model, hardships encountered to achieve success, or description with evidence of personality traits
- **Differences:** not in chronological order, record of facts only, or facts or achievement missing
- Students brainstorm a list of personality traits. They discuss what makes one person more famous and memorable than another. (See TBLM Mod.2.2#1: Suggested Lead Statements to Discuss Personality Traits.) Show students how to access the thesaurus on the word processor to find more descriptive words for various personality traits.

Acquiring Strategies

- Review the characteristics of biographies (see TBLM Mod.2.2#2: Biographies and Autobiographies). Students reread the previously selected excerpts to identify or confirm common characteristics such as timeline, setting, characterization, accomplishments or challenges, and supportive people. Students note the identified characteristics on a class wall chart, with examples.
- Students choose an inventor or a scientist to research. This may be someone associated with the inventions article they researched and wrote in Mod.2.1: Extra! Extra! Read All about It! To find information about their chosen inventor or scientist, students access resources from print text, the Internet, electronic encyclopedias, and so on.
- Using concept-mapping software, students record biographical information. They sort their notes into categories that reflect the characteristics of biographies.

Applying Strategies

- Using word-processing software, students individually compose a biography of their chosen inventor or scientist. They edit their biographies together with a partner, using BLM Mod.2.1#2: Five-Step Revising and Editing Checklist.
- Student-written biographies can be posted on the school website, with a link to the email address of the student biographer. Invite students to ask each other questions about the inventors or scientists through email. Student biographers answer the questions they receive.
- Using the Prepare and Share Expository or Informational Text wall chart, students select and list five points to focus on for their presentation. They hand in their List for Presentation. After the presentation, they comment on whether they think they were successful at following their plan.
- Students assume the identity of the inventor or scientist about whom they wrote a biography. The class interviews each student inventor or scientist in turn. (The inventor or scientist can be a guest speaker at an OLE.7: Speak Ye!, Hear Ye! session.) Students write two things they learned about each person on an Exit Slip.

Variations/Extensions

- Students make a mini-timeline representative of the life achievements of their chosen inventor or scientist, using cash register tape. (Consider using a scale such as 1 cm = 1 year.) Students include four or five selected events or accomplishments in their mini-timeline. They write a sentence and create an illustration for each selected event or accomplishment. Post the mini-timelines on the classroom wall, one above another, to create a giant timeline. Students examine the giant timeline as well as the Timeline of Discoveries created in Mod.1.3a: Back to the Future: A Timeline of Discoveries. They observe similarities or patterns in the lives of scientists, their inventions, and the social or political climate of the time in which they lived.
- Student biographers answer email while assuming the identity of the inventor or scientist.

SUGGESTIONS FOR ASSESSMENT

- Verify how effective students were in using BLM Mod.2.1#2: Five-Step Revising and Editing Checklist to edit their biographies. Confer with students to review the editing concepts.
- Check students' Venn Diagrams or concept-mapping webs for accuracy of information.
- Confer with students using their planned List for Presentation and their self-assessment of their performance.
- Use TBLM Mod.2.2#3: Observation Checklist for Speaking and Listening Skills to assess students' participation. This TBLM can be used throughout the unit to observe each student's progression of skills.

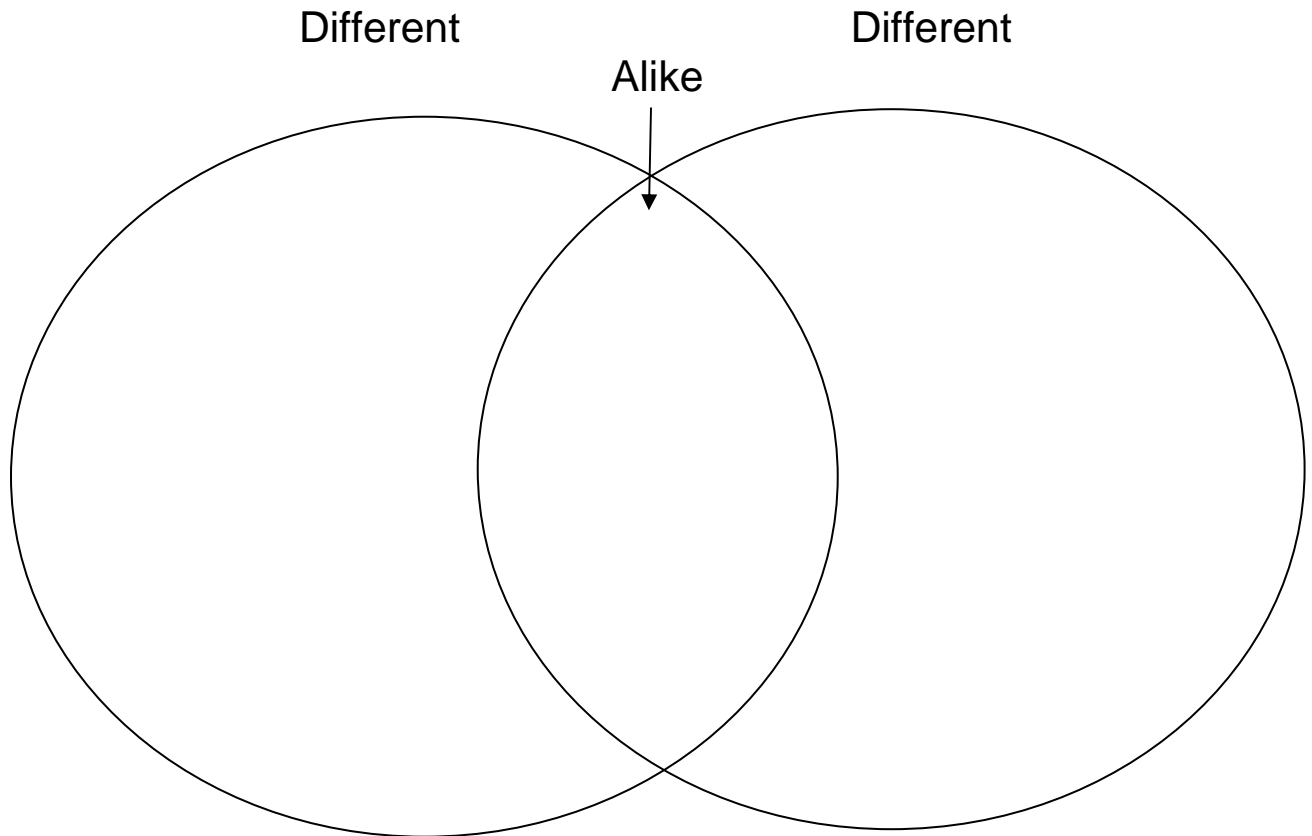
CONNECTION TO INVENTION CONVENTION

- While reading biographies, students become aware of challenges an inventor must face and overcome to develop an invention. Students practise communication skills with their oral presentation, as they assume the character of their inventor or scientist.

BLM Mod.2.2#1: Venn Diagram

Name _____ Date _____

_____ and _____



TBLM Mod.2.2#1: Suggested Lead Statements to Discuss Personality Traits

Sample Lead Statement	Personality Trait
<ul style="list-style-type: none"> If I don't run away in the face of danger, I am... 	brave, courageous
<ul style="list-style-type: none"> If I keep trying an experiment even though it fails often, I am... 	persistent
<ul style="list-style-type: none"> If I keep exploring even though everyone tells me there's nothing there, I am... 	determined
<ul style="list-style-type: none"> If I keep thinking of new ways to do something, I am... 	creative, inventive
<ul style="list-style-type: none"> 	
<ul style="list-style-type: none"> 	
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TBLM Mod.2.2#2: Biographies and Autobiographies

Description and Characteristics

- **Biographies** are stories of people's lives written by someone else.
- **Autobiographies** are personal life stories written about oneself.
- Both biographies and autobiographies commonly have a theme and are written in chronological sequence. They include
 - timeline
 - setting
 - characterization
 - accomplishments or challenges
 - supportive people

Introduction

- Identify the theme.
- Provide an authentic setting.
- Set a timeline.

Body

- Focus on the person's character (e.g., the person is honest, curious, innovative, resilient, courageous) as the most important element.
- Show the individual as a dynamic person, changing over time.
- Describe the person, including reference to personality.
- Mention supportive people who were an influence.
- List the person's accomplishments or challenges.

Theme

- Focus on the person's accomplishments and challenges. (These are the main components of a biography.)
- Ensure that all information provided supports the theme.

TBLM Mod.2.2#3: Observation Checklist for Speaking and Listening Skills

Student Name	Date			
Student As Speaker				
1. Uses voice appropriately.				
2. Uses sentences in oral communication.				
3. Maintains topic.				
4. Speaks fluently and talks for an appropriate length of time.				
5. Responds to the audience on request.				
Student As Audience				
1. Listens attentively.				
2. Asks questions or offers comments.				
3. Takes turns during discussion.				

Speaking and Listening Skills: Observation Checklist: Adapted from *Grades 5 to 8 English Language Arts: A Foundation for Implementation* (Manitoba Education and Training BLM-95).