

Picture This: Scientists on Stamps

Which Canadian nuclear scientist is most deserving of a new Canadian postage stamp?



overview

LESSON CONTEXT

Every year, Canada Post releases dozens of new stamps. These stamps showcase distinctive Canadian people, places, things and events.

LEARNING GOALS

- Identify contributions made by Canadian scientists in the field of nuclear science and technology.
- Acquire science knowledge using a variety of resources and methods.
- Summarize and communicate information in a variety of ways.
- Work collaboratively with team members.

LEARNING ACTIVITIES

In this lesson, students will read about four Canadian scientists in the **Famous Canadians Info Sheet BLM** who have made important contributions to the field of nuclear science and then will nominate one of these Canadians for a new stamp

BIG IDEAS

Canadian scientists have made important contributions to Canadian society in the fields of nuclear science and technology.

assessment & evaluation

PRIOR KNOWLEDGE AND SKILLS

- Familiarity with Canadian postage stamps
- Experience working in cooperative small groups
- Experience with persuasive writing

SUCCESS CRITERIA

- Students use valid and persuasive evidence when selecting the scientist
- Students participate actively in class and small group discussions

ASSESSMENT STRATEGIES

- Observation of student participation during small group work and class discussions
- Review of **Scientist Nomination Form BLM**



time

60-75

MINUTES PLUS TIME
OUTSIDE OF CLASS



subjects

CHEMISTRY
PHYSICS
SCIENCE
HISTORY

CANADIAN STUDIES



skills

CRITICAL THINKING
COLLABORATION
COMMUNICATION

resources & materials required

  **BLM – Famous Canadians Info Sheet** – one per group

  **BLM – Scientist Nomination Form** – one per group

 Curriculum alignment

- Envelope with a current Canadian postage stamp
- Stickers – one per student
- Electronic device with internet access
- Computer and LCD projector or interactive whiteboard

minds-on

 15 MINUTES

- Show the students the envelope and have them guess what the lesson is about. Give prompts as necessary until students identify that the lesson is about stamps.
- Explain that every year Canada Post releases a number of different postage stamps. Find out if any of the students are stamp collectors or know of anyone who is a stamp collector.
- Using the internet and the LCD project or interactive whiteboard, go to the [Postage Stamp Guide website](#).
- Periodically, Canadians in the field of science and technology have been pictured on stamps. On the Postage Stamp Guide website, click “Find Stamps” and search for “[Marconi and Flemming](#).” The man above is Sir Sanford Fleming and the man below is Guglielmo Marconi. You can click each one for more information such as the year the stamps were issued. Then scroll down for a close-up of a hidden date on each stamp. When side-by-side [the stamps](#) create an image of a world map.
- In the field of nuclear science, only one scientist has been honoured by being chosen for a stamp. This is Sir Ernest Rutherford. You can see his stamp by searching for “[Rutherford](#)” on the website.
- Discuss with the students which of Rutherford’s accomplishments merited him getting a postage stamp. This could include his theory of atomic structure, his invention of the Rutherford-Geiger detector, his changing of nitrogen into oxygen as he splits the atom, his prediction of the existence of neutrons, his identification of the phenomena of half-life, or his Nobel Prize in Chemistry in 1908, etc.
- There are many other Canadian scientists who have accomplishments worthy of stamps. Four potential candidates in nuclear physics can be found on the **Famous Canadians Info Sheet BLM**. These include Dr. B. Brockhouse, Dr. H. Johns, Dr. G. Laurence and Dr. W.B. Lewis (Rutherford already has a stamp, so he is not a candidate).
- Assign one of these scientists to each of the four groups and explain that they are to consider their scientist for a postage stamp. Each group will read about their scientist online or from the **Famous Canadians Info Sheet BLM** and then cooperatively answer the questions on the **Scientist Nomination Form BLM**. Each group will only complete one nomination form. If necessary, the forms could be completed outside of class time.



DID YOU KNOW?

October is stamp collecting month around the world.



DID YOU KNOW?

Stamp collecting is not the same as philately, which is the study of stamps.

IMPLEMENTATION OPTION

- Instead of one of these four scientists, students could research and complete a nomination form for another Canadian scientist who works in the field of nuclear science or technology.

consolidation

🕒 20 MINUTES

- After the groups have completed their nomination forms, post the four forms. Provide each student with a sticker.
- The students will use the stickers to identify which scientist they think is the most worthy of a stamp (each student may only vote for one scientist – and they must vote for someone). Have the students read each of the posted nomination forms and place their stickers on the scientist who they think are most deserving.
- After all of the students have had a chance to vote for a scientist, tally the votes. Questions for discussion can include:
 - » *Why did you choose the scientist that you did?*
 - » *What criteria did you use to decide?*
 - » *Do you think the most deserving person received the most votes?*
 - » *What criteria do you think Canada Post uses to decide what goes on stamps?*
 - » *Who should judge what goes on Canadian stamps?*

extensions

- Groups could each nominate a spokesperson who would speak on behalf of their candidate before voting.
- Students could design the stamp for the winning scientist using the stamps at the Library and Archives Canada – Postage Stamp Collection for inspiration.
- The nomination forms could be posted in a hallway and students from other classes could vote as well.

additional resources

CANADIAN NUCLEAR ASSOCIATION WEB PAGES

- [Map & timeline](#)

RELATED TEACHNUCLEAR LESSON PLANS

- [The Atomic Age in Canada](#)

background information

- [The Canadian Postage Archives – Library and Archives Canada](#)
On this site you can search all Canadian stamps issued as far back as 1851 until 2010.
- [Canada, 2000 – Postal Heritage and Philately, Library and Archives Canada](#)
Stamps for disease-fighters Sir Frederick Banting and Armand Frappier were issued in the year 2000.
- [Canada Post 2019 Stamp Program – The Royal Philatelic Society of Canada](#)
Find out about the Canada Post stamp program. It shows which stamps are released each year.
- [Collecting Stamps – Canada Post](#)
View images of the stamps released each year.
- [Canadian Stamp News](#)
News from the world of stamp collecting in Canada.

“In science there is only physics; all the rest is stamp collecting.”

Attributed to
Sir Ernest Rutherford

