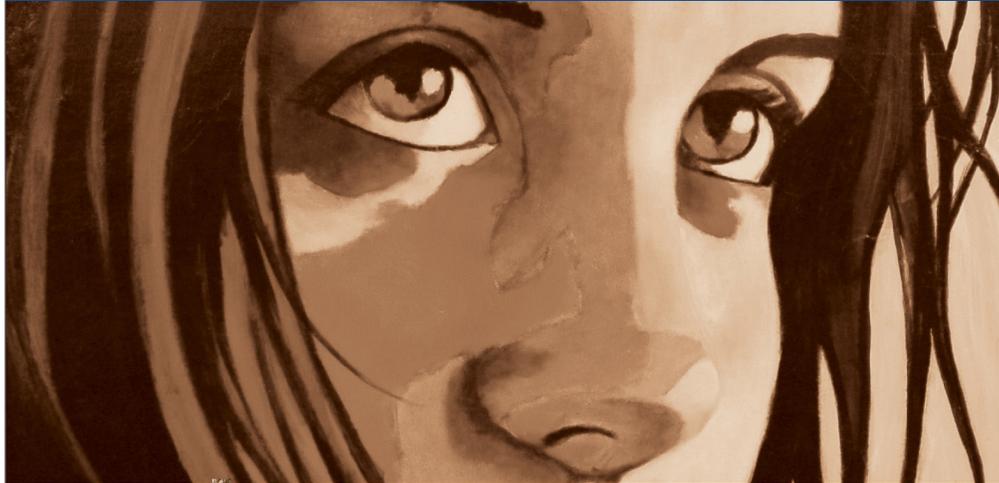


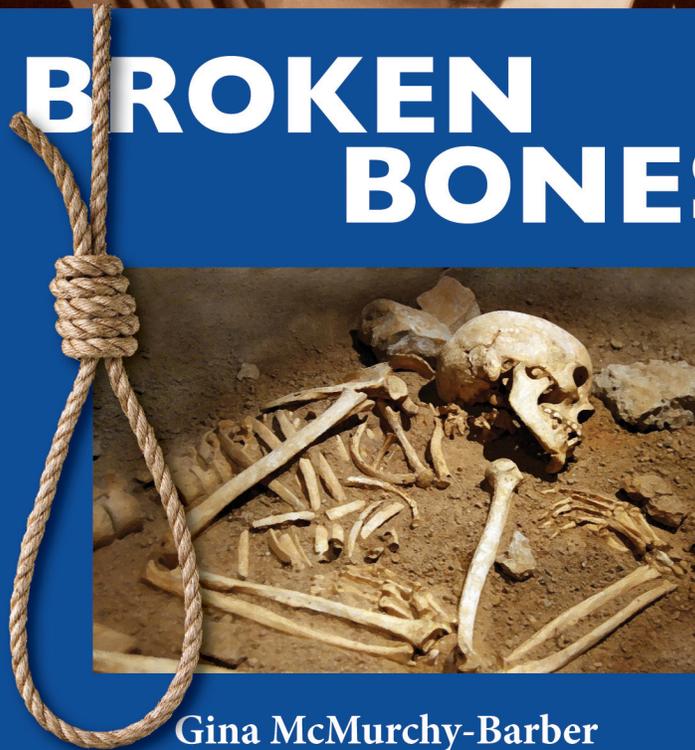
# TEACHER'S GUIDE

Grades 6-up, Guided Reading Level: X

*A Peggy Henderson Adventure*



## BROKEN BONES



Gina McMurchy-Barber

Teacher Resource Guide developed by  
Gina McMurchy-Barber,  
Recipient of the Governor General's Award for Excellence in Teaching Canadian History

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# I INTRODUCTION

This teacher resource guide for *Broken Bones: A Peggy Henderson Adventure* has activities that are cross-curricular. They include an introduction to the discipline of archaeology, anatomy, Canadian history, and Shakespearean literature. There is also a list of new words and comprehension questions as follow up work to each chapter. Finally, there are many fun follow up activities for students to choose from. Teachers may want to refer to the teacher resource guide for *Reading the Bones* for further activities related to archaeology.

## About the Book

*Broken Bones: A Peggy Henderson Adventure* is a historical fiction novel that touches on such topics as: explorers; the building of Canada's national railroad; pioneers who settled the West; mining; the legal system and capital punishment of the 19th century; early burial practices; and newspaper reporting.

Story summary: A vandalized burial in an abandoned pioneer cemetery brings twelve-year-old Peggy Henderson and Dr. Edwina McKay, an elderly archaeologist fondly known as Eddy, to Golden, B.C. to excavate. The town dates back to the 1880s, the time when the national railroad was being built. Most of Golden's first citizens were rowdy miners and rail workers who rarely died of old age. Over the century since the cemetery closed the wooden burial markers have disintegrated, so the dead man's identity is unknown. One day while excavating Eddy notices that the vertebrae at the base of the skull are crushed, a condition known to be caused when someone is hanged to death. Information gathered from old newspapers preserved in the local museum and Peggy's tendency to make quick judgments, lead her to the conclusion the young man in the burial got what he deserved.

When Eddy invites the teen responsible for the vandalized burial to assist with the excavation Peggy is furious. It doesn't help that he likes to talk in quotes from Shakespeare's plays and dresses in gothic fashion. Just when Peggy is convinced this boy, like the man from the burial, is rotten to the core she learns an important lesson about judging others — sometimes good people do bad things.

*Broken Bones* is the sequel to *Reading the Bones*.

## About the Author

Gina McMurchy-Barber was the recipient of the Governor General's Award for Excellence in Teaching Canadian History. Prior to teaching, she majored in archaeology at Simon Fraser University, studied orangutans in Borneo with Dr. Birute Galdikas, and led backpack tours to Asia and South America. Her first novel, *Reading the Bones*, was released March 2008. By June, it was shortlisted and nominated for the 2009 Langley Book of the Year Award and then the 2009 Silver Birch Award. Her second novel, *Free as a Bird*, came out in 2010 and was soon nominated for six awards, including the Governor General's Literary Award, the Canadian Librarians Award and the BC Book Prizes. Both books are included in the Canadian Children's Book Centre's *Best Books for Kids and Teens*. *Broken Bones* is the author's third children's novel and was released August, 2011. For more information go to [www.ginabooks.com](http://www.ginabooks.com)

# Introduction to Archaeology

**Archaeology** is the study of mankind's past and depends on artifacts, structures and human remains to understand it. **Artifacts** are objects that have been created or altered by humans of the past and include such things as tools, pottery, jewelry, and furniture. Also important to this study are such features as: structures, pit houses, caves; rock art such as petroglyphs and pictographs; food, including corncoobs, seeds, butchered and cooked animal remains; soil samples; and human remains. The place where an archaeologist finds artifacts is called the **site**.

The **archaeologist** uses artifacts and features to reveal information about the culture, behaviour, quality of life and more. But artifacts or features alone are not the only way for archaeologists to understand humans of the past. Additional important information comes from studying the location and pattern in which the artifacts are found in the ground, and the layers of soil built up over the years. For this reason an artifact found in-situ (found in its original location in the ground) is much more valuable than one that has been taken out of context. Over thousands of years layers of soil, sand, dust, ash and rubbish are deposited one on top of the other. Deposits often form separate and visually distinct layers which are called **stratigraphy**. Stratigraphy helps archaeologists to understand past geologic events and can possibly provide a timeframe for human occupation. Within the stratigraphic layers are combinations of natural and cultural material (e.g.: a shell **midden** — a pile of discarded shellfish and bones is a type of prehistoric garbage dump) that can be referred to as the **matrix**. During the course of an **excavation** or **dig** these stratigraphic layers and matrices are carefully examined and removed — like peeling off layers of an onion. Detailed notes, diagrams and photos help to preserve the information that is inevitably destroyed in the process of excavation — for once a site has been excavated it can never be returned to its natural state.

When the excavation is complete the archaeologist pools the information gained from the site's in-situ artifacts, features, matrix and stratigraphy, along with comparative research, to formulate a hypothesis regarding the people who once worked at or occupied the location. A **hypothesis** is a possible and likely explanation an archaeologist comes up with to explain past human events, behaviour, and culture. There are many different branches of archaeology — including classical, medieval, historic, and underwater archaeology. Additionally, an archaeologist may be an expert in one specific aspect — such as a pottery expert for the classical Greek period or a lithics expert (stone tools/objects) for the middle Paleolithic. An **osteologist** is interested in human bones and a **zooarchaeologist** specializes in the study of animal bones as they pertain to humans.

Long ago archaeology was little more than treasure hunting. Most of the valuable information was lost when artifacts were removed with no regard to the surrounding information. But today archaeology is a specialized science and in addition to the traditional excavation tools (e.g. trowel, dustpan, caliper), the most advanced technology is used, such as satellites, deep-sea robots, subsurface radar scanners, and electronic mapping instruments.

## II PRE-READING ACTIVITIES

1. **The building of Canada's national railroad.** Suitable children's resources: *The Building of the Canadian Pacific Railroad* by Deborah Hodge; The Story of the Canadian Pacific Railway — a pdf file found at [www.cpr.ca/en/about-cp/our-past-present-and.../cp-childrens-history.pdf](http://www.cpr.ca/en/about-cp/our-past-present-and.../cp-childrens-history.pdf)
2. **History of Capital Punishment in Canada.** Suitable children's resource: *Capital Punishment in Canada* found at [www.justice.gc.ca/eng/news-nouv/fs-fi/2003/doc\\_30896.html](http://www.justice.gc.ca/eng/news-nouv/fs-fi/2003/doc_30896.html)
3. **Archaeology.** Suitable children's resources: *Reading the Bones Teacher Resource Guide*; *Archaeology for Kids: Uncovering the Mysteries of the Past* by Richard Panchyk; Dig: The Archaeology Magazine for Kids at [www.digonsite.com](http://www.digonsite.com)
4. **William Shakespeare.** Suitable children's resources: *Tales from Shakespeare* by Charles and Mary Lamb; *The Children's Shakespeare* by Edith Nesbitt; [www.playingwithplays.com](http://www.playingwithplays.com)

### III NOVEL STUDY QUESTIONS

1. Why did Aunt Margaret object to Peggy participating in the excavation? (Ch. 1)
2. What were the conditions required to execute someone in Canada in the last century? (Ch. 1)
3. What is Eddy's approach to dealing with the teens in this chapter? Do you agree or disagree with her? Why? (Ch. 1)
4. What did the early Kootenay First Nations use for making diapers? (Ch. 1)
5. Who were the first European explorers to cross Canada by land and visit the Golden area? (Ch. 1)
6. Why was the town originally called Kicking Horse Plains? (Ch. 2)
7. Who was Donald A. Smith? (Ch. 2)
8. What was Peggy's opinion of Tristan? Do you agree or disagree with her? Why? (Ch. 3)
9. What did Tristan mean when he said, "All the world's a stage and all the men and women merely players"? How did this apply to him? (Ch. 3)
10. Why was the Pioneer Cemetery on a hillside? (Ch. 3)
11. Why did Will have to leave home? (Ch. 3)
12. How does Constable Hopkins compare to Constable Sam Steele? (Ch. 4)
13. What did Hopkins want Peggy to do? Do you think that was fair? Why or why not? (Ch. 4)
14. What did Peggy learn about the early residents of Golden from the archaeology report? (Ch. 4)
15. Why did Thomas Moody hate Will so much? (Ch. 4)
16. Both Eddy and Aunt Norma warned Peggy about being judgmental. In what way was she judgmental? Is she accurate? (Ch. 5)
17. What did Peggy learn about capital punishment? (Ch. 5)
18. What was Uncle Henry like? (Ch. 5)
19. Why did Will refuse to take time off work after his ribs were broken? (Hint: check the newspaper article.) (Ch. 5)
20. What was Uncle Henry's relation to Tristan? (Ch. 6)
21. What were some of the things Eddy taught Tristan about excavating? (Ch. 6)
22. Why did the orientation of the coffin interest Eddy? (Ch. 6)
23. What are some of the old beliefs connected to burials, their orientation and the sun? (Ch. 6)
24. What did Peggy conclude about the individual in the burial based on the burial's orientation? (Ch. 6)

25. On page 98 Tristan quoted Shakespeare in his reference to Peggy's personality. What did he mean by that? (Ch. 6)
26. What was Peggy afraid that Tristan would do to the burial? (Ch. 6)
27. What did Thomas Moody accuse Will of doing? (Ch. 6)
28. There is a brief note in *The Truth* about the first Sikh temple. What was John Houston's opinion about this? What was his advice to Sikhs? Would this kind of reporting be tolerated today? (Ch. 6)
29. Why was Peggy so angry with Tristan? What did he do and what were the consequences? (Ch. 7)
30. Describe the remains in the coffin? Are there any artifacts? (Ch. 7)
31. What clues did the bones provide that the individual in the burial did hard manual labour? (Ch. 7)
32. What other things did Eddy and the others learn from the bones? (Ch. 7)
33. Who was Bennett Robson? Who did he and Will meet along the road to the town of Donald? (Ch. 7)
34. Bennett and Will disagreed on what they should do about Moody. What did they each want to do? (Ch. 7)
35. What amazing discovery did Eddy make that might help them identify the individual in the burial? (Ch. 8)
36. How did this discovery support Peggy's first opinion of this individual? (Ch. 8)
37. What did Peggy learn from Uncle Henry when she went to the museum? (Ch. 8)
38. Did this information alter her perception of Tristan? Why? (Ch. 8)
39. What happened to Bennett Hobson? What was Will's response? (Ch. 8)
40. Constable Hopkins informs Peggy about some new information regarding Tristan. How did this new information make her feel about Hopkins and the boy? (Ch. 8)
41. Peggy said something embarrassing to Constable Hopkins. What was it? (Ch. 8)
42. Where did Peggy ask Aunt Norma to take her and why? (Ch. 9)
43. List the two historical figures that Peggy learns about and what was their role in Golden's history? (Ch. 9)
44. What did Eddy learn with the help of the subsurface radar scanner? (Ch. 9)
45. What evidence was there against Will that could have led a jury to convict him for Moody's murder? (Ch. 9)
46. When the storm was over what did Eddy and Peggy discover at the burial site? Who did Eddy think is responsible? (Ch. 9)
47. What did Peggy find when she went to the museum this time? (Ch. 10)
48. What did Uncle Henry hope to prove? Did the letter help? (Ch. 10)
49. Was Eddy angry with Uncle Henry and Tristan for what they did? Why or why not? (Ch. 10)
50. What did Peggy learn in her last visit to the museum? (Ch. 11)
51. Describe Will's funeral. Who was there? Who was buried next to him? Why? (Ch. 11)

## IV POST-READING DISCUSSION QUESTIONS

- Discuss what Shakespeare meant by the following quotes. How do they relate to Tristan and Will?
  - "To thine own self be true."
  - "There is nothing either good nor bad, but thinking makes it so." What do they mean?
- What did Peggy learn from this entire experience?
- List and compare the strengths and weaknesses of the three young characters: Peggy, Tristan and Will.
- What insights have you gained about Canadian history and the early pioneer's life?

## V POST-READING ACTIVITIES

- Pick one of the characters in the story and write a paragraph describing him/her in your own words. Support your opinions with examples from the novel. Draw a picture of what you think he/she looked like.
- Draw a picture of the burial site as first scene by Peggy, Eddy and Tristan on page 113.
- Make a cartoon strip of Peggy's conversation with Constable Hopkins about her Aunt Norma.
- Role-play the courtroom scene of Will's trial as you imagine it. Include all the witnesses who you think would have to testify for the crown and the defense.
- The editor of *The Truth* was John Houston. After reading all the newspaper inserts from *The Truth* describe what kind of a reporter you think he was. Write a newspaper article on what you imagine Will's court case was like. Write a newspaper article about any event in the story or to summarize a chapter.
- Write a letter of support to Will while he is in jail.
- Research information about Judge Begbie, Sam Steel, the North West Mounted Police, Donald A. Smith and Sheriff Stephen Redgrave and write a short report.
- Draw a timeline of Will's life and the events that led to his execution.
- Find books that tell the story of The Last Spike.
- There are many Shakespeare quotes used in the book. Take one of the quotes and find out more about the play it comes from. Take some of the quotes and rewrite them in modern English.
- Use the words from the glossary and make a word game, such as a spelling bee, circle word or crossword.

## VI EXTENSION ACTIVITIES

- Research the skeletal system. Then get someone to trace your body on a large piece of paper. Fill it in by drawing all the bones and label them.
- Research the building of the CPR across Canada. Then make a dough relief map of the country showing the route of the railroad.
- Create a model of stratigraphic layers with embedded artifacts using a clear container (like an aquarium) and different coloured soils, rocks, ash etc. (More details in the *Reading the Bones* Teacher Guide)
- To get a better understanding of artifacts in-situ you will need a clear glass bowl and gelatin. Make the first layer of gelatin (or Jell-o). When it is nearly firm, gently insert one or two small artifacts. Let this set. Add the second layer of gelatin or Jell-o and when it is nearly set add another artifact or two. Do the same for the final layer. When the jell-o is well set it can be shown to your classmates as an example of how artifacts are suspended in time inside the soil. This model will give them a better idea of the concept in-situ.
- Research the beliefs and burial practices of various cultures around the world.
- Do the archaeology shoebox activity, as described in the *Reading the Bones* Teacher Guide, and then invite your classmates to analyze it.
- Invite a local archaeologist to visit the class or find out whether there is a site the class can visit. Universities are a good place to find information.

## VII GLOSSARY

**Archaeology:** is the study of mankind's past and depends on artifacts, structures and human remains to understand it.

**Archaeologist:** is the scientist that studies past human cultures with the help of artifacts, features and remains.

**Artifacts:** objects that have been created or altered by humans of the past and include tools, pottery, jewelry, cultivated or cooked food remains, once living remains, such as the bones of humans or butchered animals, and dwellings, house pits or buildings.

**Cache:** a cool and dry container, storage box or space used for storing perishable items such as food.

**Capital punishment:** refers to the legal execution of a convicted murderer by the government.

**Excavation or dig:** the scientific and systematic removal of stratigraphy, matrix, remains and artifacts in order to understand past human events, culture or behaviour.

**Gaol:** is the old English spelling of the word jail. It is a place where criminals are held before their trial.

**Historical archaeology:** the study of past cultures where written records can assist in the interpretation of excavated remains and artifacts.

**Hypothesis:** a scientifically derived scenario that the archaeologist uses to explain past human events, behaviour, and culture.

**In-situ:** refers to the artifacts left by humans in the past that are in the ground, buried by years of soil, and other matrices.

**Matrix:** the composition of the soil, such as ash from volcanic eruption, decomposed animal and plant remains, clay, and dirt.

**Navvies:** an outdated and derogatory term used in the 1800s that referred to Irish immigrant labourers.

**Noose:** a loop with a running slipknot that tightens as the rope is pulled and typically used to hang people or animals.

**Osteology:** the study of human bones.

**Premeditated:** an action that is planned deliberately and in advance — as in premeditated murder.

**Scoop:** an exclusive news story containing information acquired by luck and not known by the competitor.

**Site:** the place where the artifacts are excavated.

**Stratigraphy:** layers of soil, sand, dust, ash and rubbish deposited over time that form separate and usually distinct layers. Stratigraphy can help archaeologists to understand past geologic events and possibly provide a timeframe for human occupation.

**Subsurface radar scanner:** a device that uses electro-magnetic vibrations or pulses to detect objects below the surface.

**Vandal:** one who deliberately destroys or defaces private or public property.

# VIII RESOURCES

## Archaeology Related Resources

About.com: Archaeology Kris H. Hirst Blog (Lots of useful information on all aspects of archaeology.)

*Archaeology for Kids: Uncovering the Mysteries of the Past* Chicago Review Press, 2001.

Dig: The Archaeology Magazine for Kids. [www.digonsite.com](http://www.digonsite.com)

*Reading the Bones* by Gina McMurchy-Barber

## Teacher Related Resources

Beers, Kylene. *When Kids Can't Read, What Teachers Can Do: a guide for teachers 6 - 12*. Portsmouth: Heinemann, 2003.

Brownlie, Faye. *Grand conversations, thoughtful responses: a unique approach to literature circles*. Winnipeg: Portage and Main Press, 2005.

Kuhlthau, C., L. K. Maniotes, and A. K. Caspari. *Guided inquiry: learning in the 21st century*. Westport: Libraries Unlimited, Inc., 2007.

McCloud, Scott. *Making Comics*. New York: HarperCollins Publishers, 2006.

Toronto District School Board. *Just the Facts*. Toronto District School Board, 2003.

Toronto District School Board. *Media Studies*, Toronto District School Board, 2006.

Toronto District School Board. *Imagine the Learning*. Toronto District School Board, 2007.