TECHNOLOGY
A GROUNDWORK GUIDE
Written by Wayne Grady

ABOUT THE BOOK

This book is about our relationship with technology. The book examines the following topics:

- the role of technology throughout history
- technology's effects on our relationship with nature
- the current and future impact of technology
- the effects of specific technological innovations
- definitions of "progress"

CURRICULUM CONNECTIONS

● Humanities and Social Sciences   ● Science and Technology   ● Social Studies (Civics, Geography, History, World Studies)   ● Information and Communications Technology ● English Language Arts   ● Business Studies (Economics)   ● Arts (Visual Arts, Theater Arts)

IDEAS FOR GETTING STARTED

- Introduce the book and your goals for studying it, and briefly outline the issues the book explores. Tell students that issues-based study raises varied opinions, and that, as a class, you will set some ground rules for maintaining a respectful and safe classroom atmosphere for discussing personal views and beliefs. Ask the class to collaborate to create a list of expectations, such as "We'll respect one another's privacy"; "We'll listen to one another"; and "We won't insult one another." Post the list and revisit it periodically to allow students to make observations and air problems.

- Use *Technology*: Getting Started (included in this Teachers' Guide) to initiate self-reflection and discussion of students' thoughts about technology. Have groups of students share and discuss their responses. After their study of the book, students can reflect on their initial responses.

- Conduct a "human timeline" activity to get students thinking about the history of technological developments. Before handing out *Technology*, select a number of the events from the timeline on pages 117–125 (one event per student) and write each event, without the date, on a slip of paper. Give each student one paper and have students work together to place themselves in a line in the correct chronological order.

- Have students review a typical morning, in terms of the technology they use, from their time of waking to the end of their first class (or whatever time period they choose). They can develop their own method of recording/listing the events and the technology. Afterward, have students share their results in groups and discuss their observations about their use of technology. Here are some sample discussion questions: What technological devices could they live without? What would they miss most if it was taken away? What effects does their use of a particular technology have on the environment? What effects does technology have on their social interactions? What do they know about the invention of a particular technology? And how does their use of technology affect their happiness or well being?

TEACHING/LEARNING APPROACHES

- Read the book as a class, with group or class discussions at the end of each chapter and a culminating activity at the end. You could use a combination of teacher read aloud, guided reading and independent reading.

- Have students read the book independently and create their own study project.

- Assign groups of students one chapter each and have them read it and present it to the rest of the class.

- Have students read the book in groups and then either collaborate on a culminating activity or complete one independently.

● Ask students to keep an Issues Journal (in writing or on audio or video) in which they comment on what they have read and/or discussed. Encourage frequent updates throughout the study of *Technology*. Let students know from the outset whether the journal is for personal use only or if it's meant to be part of their assessment.

IDEAS FOR DISCUSSION

● What theme or idea in the book resonated with you the most and why?

● What does the author say about technological thinking? Would you say you are a technological thinker?

● The author writes about the notion of speed and what it represents (see pp. 14–16). What importance do you place on speed in your life? Give some examples.

● How does technology affect your relationship with nature?

● In Chapter 1 (pp. 18–22), the author explores gadgetry and "the tendency of a potentially beneficial avenue of technological research to veer off into the trivial." How does he support his point of view? Do you agree or disagree with him?

● The author writes about "megamachines" on pages 26–27. Are there megamachines in your life? How do you feel about them? Are there any that you fear? What about admire?

● How does the author describe the difference between work-related technologies and control-related technologies?

● What is your response to the author's assertion: "We have been conditioned to accept technology, and with technology and war so closely allied, we have been conditioned to accept war"? What else does the author say about connections between technology and war?

● One of the themes in the book is the concept of progress. Think of the world today. What do you want to happen in the future that you would consider progress for humanity? Do you equate progress with technology?

● In the closing chapter, the author writes about physicist Freeman Dyson's early predictions about technological advances. What three predictions would you make about the focus of future technology?

● How has this book affected your thinking about technology?

IDEAS FOR ACTIVITIES

- In Chapter 2, the author quotes Leo Tolstoy: "One of the conditions of happiness is that the link between Man and Nature shall not be broken." Students reflect on their response to this idea through artwork (photography, video, music, painting, sculpture, mixed media) or through writing (a poem, short story, essay, journal or blog).

  Subjects: Arts (Visual Arts), Humanities and Social Sciences, English Language Arts, Health/Career and Life Management

- Students use the idea of technology as an entity (see pp. 9–10) and work in groups to develop a dramatic scene, monologue, or short play that features technology as a character. In their work, they should explore a particular theme that interests them. Some suggestions include the idea of humans relinquishing control to technology; technology as a savior; or technology as an alienator of humans from nature. Students can present their work through a dramatic reading or a full performance of the scene or play, either live or recorded.

  Subjects: Arts (Theater Arts), English Language Arts, Humanities and Social Sciences, Health/Career and Life Management

- Students imagine a place in the world that has no modern technology. The people in this place use only a small number of simple, handmade tools. Students work in groups to discuss what, if any, types of technology they would introduce to this place and what types of technology they would not introduce and why. They should discuss what the possible effects of introducing the technology would be.

  Subjects: Social Studies (Civics, History, World Studies), English Language Arts, Humanities and Social Sciences

- Point out to students that the author cites the work of Lewis Mumford and Ursula Franklin several times. Students select one of these writers and read a sample of his or her work and also conduct some biographical research. They report on their reading in an essay or oral report.

  Subjects: English Language Arts, Social Studies (Civics, History, World Studies), Science, Humanities and Social Sciences

- Students reflect on the question, "Do you feel more like a victim or a master of technology?" They can express their response through art, drama or writing.

  Subjects: English Language Arts, Arts (Visual Arts, Theater Arts), Humanities and Social Sciences, Information and Communications Technology, Health/Career and Life Management

● Have students work with a librarian to develop a list of novels, poems, songs, films and works of art that have humans' relationship to technology as a main theme. (In *Technology*, Wayne Grady refers to Alfred Tennyson, Robert Southey, William Wordsworth, Samuel Butler's *Erewhon*, Aldous Huxley's *Brave New World* and George Orwell's *Nineteen Eighty-Four*.) Students choose one work to study and relate it to their reading of *Technology*. They could write an essay on a theme that the piece develops; present a report about the work, perhaps through a monologue in the role of a character from it or as the creator of the work; give an annotated reading of the work or selected passages from it; or write a review of the work. Afterward, students could work together to create an annotated list of recommended works on the subject.

Subjects: English Language Arts, Social Studies (Civics, History, World Studies), Arts (Theater Arts), Humanities and Social Sciences, Information and Communications Technology, Science

● Point out to students how the author traces the development and profound effects of some specific technologies, such as the printing press or the cotton gin. Students choose a technological event from the timeline beginning on page 117 and research it further. They could present their findings in an oral or written report, essay, poster, slideshow presentation, brief skit or monologue or an audiotaped or videotaped educational "historical moment" for radio or television. Encourage students to include the historical effects of the technology and their opinions on its impact.

Subjects: History, Humanities and Social Sciences, Information and Communications Technology, English Language Arts, Economics

● Students choose one or more other books by the author, Wayne Grady, to compare themes or points of view. They report their findings in a book talk, essay, or oral or written book review.

Subjects: English Language Arts, Science, Humanities and Social Sciences

● Students arrange for a guest speaker for the class on the topic of nanotechnology. Students organize, plan questions for and host the event.

Subjects: Science, Information and Communications Technology, Humanities and Social Sciences, English Language Arts

● Students work in groups to create and role play a dialogue between workers from the past and workers in the same field today; for example, an assembly line worker at Henry Ford's first automotive plant and an assembly line worker at a modern automotive manufacturer. They should refer to information and themes in *Technology* and do further research about the technology, if necessary. They could present their dialogue in a live or recorded performance.

Subjects: English Language Arts, Social Studies (Civics, History, World Studies), Arts (Theater Arts), Humanities and Social Sciences, Economics, Information and Communications Technology

- Students imagine they could organize a global conference on technology. They work in groups to come up with a planning outline for the conference, including their goals for the conference, four or five themes they would focus on, five people they would invite as speakers, including a keynote speaker, an appropriate date and location, theme song and a logo for the event. Groups should present their conference "package" and explain their reasoning for their decisions.

Subjects: Humanities and Social Sciences, Information and Communications Technology, Science, English Language Arts, Arts, Social Studies (Civics, History, World Studies)

CONNECTIONS WITH OTHER GROUNDWORK GUIDES

- See *Climate Change* for themes of industrialization's effects on the environment.

- See *Oil* and *Empire* for themes of energy sources and their related political, social and economic issues, and of industrialization's effects on the environment.

- See *Slavery Today* for issues of exploitation, racism and human rights.

- See *Empire* for issues of imperialism.

- See *The Betrayal of Africa* for themes of industrialization's effects on developing countries.

- Have students select other books in the series for independent study.

TECHNOLOGY: GETTING STARTED

Use the back of the page if you need more room.

1. **What is your response to the viewpoint that teenagers are too reliant on technology?**

   _____

   _____

   _____

2. **Which of the following can you describe in the most detail? Try to recall exact details and then try putting them in order starting with the experience that had the strongest impact on you.**

   a) your first day of high school

   b) your first much-desired piece of technology (for example, a cell phone, computer, digital audio player or home stereo)

   c) the first time you played a video game

   d) a birthday party

   e) a time you performed in public (for example, a school concert, competition, play or recital)

3. **Do you worry about someone whom you think spends too much time online, on social networking or watching TV? What makes you concerned for this person? (Don't name the person.)**

   _____

   _____

   _____

4. **What's the difference between a machine and technology?**

   _____

   _____

   _____

WRITING SELF-ASSESSMENT CHECKLIST

Name: _____   **Date:** _____

Content and Organization

☐   My writing demonstrates a solid understanding of the theme/concept.

☐   My main ideas are clearly stated.

☐   I have provided support for my main ideas or point of view.

☐   I have used effective transitions to link my ideas (e.g., introduction, body, conclusion).
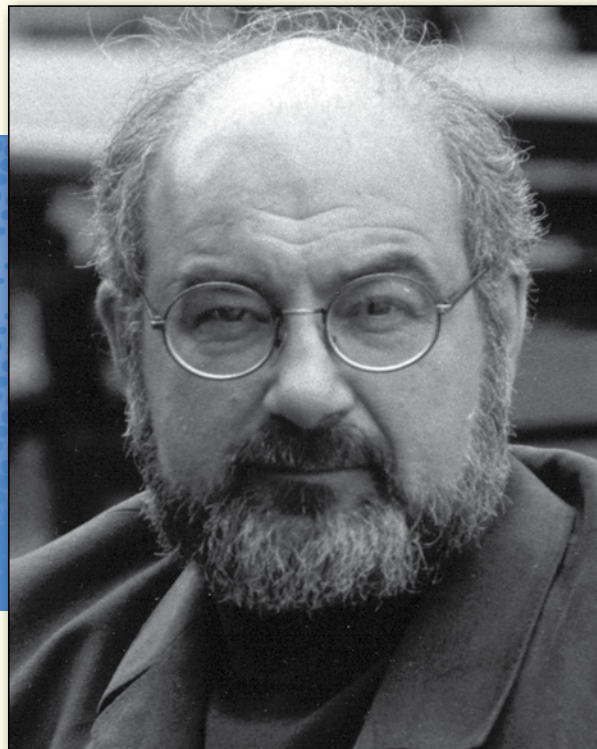
Style

☐   My word choice is precise, interesting and purposeful.

☐   My sentences are varied in length and structure.

☐   I have used some stylistic devices effectively (e.g., repetition, parallelism, metaphor, irony).

Language Conventions

☐   I have checked for errors in grammar.

☐   I have checked for errors in spelling.

☐   I have checked for errors in punctuation.

WAYNE GRADY

ABOUT THE AUTHOR

WAYNE GRADY is an award-winning author of books on science and natural history. He is the former science editor of *Equinox* magazine, and the winner of three Science in Society Awards. He has written eleven books of nonfiction, including *The Bone Museum*, *Bringing Back the Dodo* and *Tree: A Life Story*, co-authored with David Suzuki. His book *The Great Lakes* won the American National Outdoor Book Award in 2008. His most recent book, *Breakfast at the Exit Cafe*, co-authored with his wife, novelist Merilyn Simonds, was published in 2010. Grady teaches creative nonfiction at the University of British Columbia and lives near Kingston, Ontario.

GROUNDWORK GUIDES

"[The Groundwork Guides] are excellent books, mandatory for school libraries and the increasing body of young people prepared to take ownership of the situations and problems previous generations have left them."

GLOBE AND MAIL

"These concise, straightforward titles are important additions to all collections."

SCHOOL LIBRARY JOURNAL

⚑ BOOKLIST TOP TEN YOUTH SERIES NONFICTION

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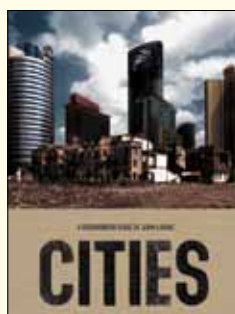### BEING MUSLIM (©2006, 2008)
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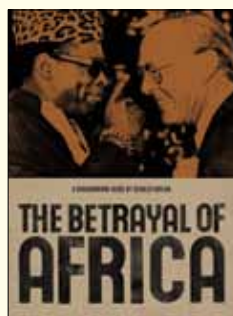
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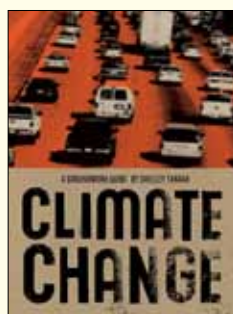Written by Gerald Caplan

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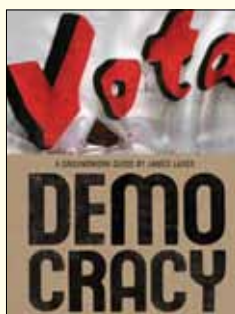ISBN: 978-0-88899-825-5

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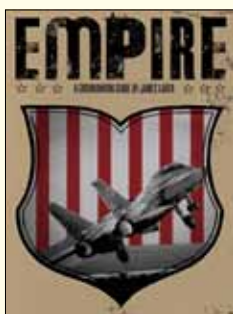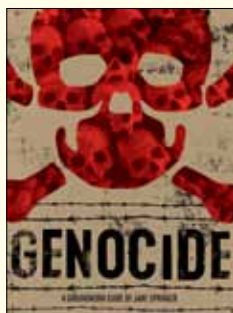
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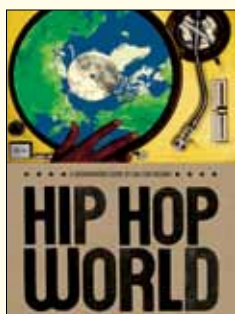Written by Mariana Valverde

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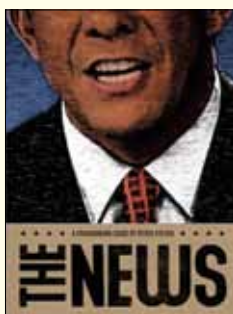### GENOCIDE (©2006)
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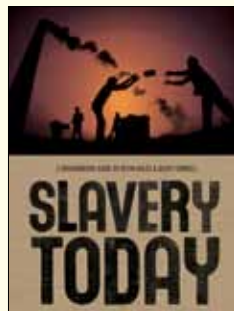Written by Wayne Grady

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