ALERT

ADOLESCENT LITERACY: ENGAGING RESEARCH AND TEACHING

Make Room for
SUPPORTING UNDERSTANDING OF GRAPHIC TEXTS

DID YOU KNOW?

Graphic texts move beyond the words on the page, and express ideas and information through a variety of visual elements. In graphic texts, size, colour, placement, proportion and the relationships between those elements (sometimes explicit, sometimes not) convey meaning in a text beyond the words themselves. For example, readers may need to pay attention to the relative size of a series of pie graphs because they indicate different amounts of a whole. They may need to use a legend that accompanies a graph to interpret information, or they may need to determine if pictures and illustrations are used to convey details or if they are used for visual appeal.

Print texts, which may be more familiar to adolescent readers, differ from graphic texts. Whereas print texts tend to be linear and structured through sentences and paragraphs with relatively consistent use of font styles and size, graphic texts may be nonlinear and structured through use of space and visual elements, and tend to be predominantly composed of visual elements with far less print.

Although graphic texts encompass a wide variety of forms, this ALERT will focus on graphic texts, such as infographics, which are intended to stand on their own and can be read as a complete text. Infographics, in particular, usually combine a number of elements, including diagrams, graphs and charts, with print in order to present a rich source of information in a more concise way. It may also present dense complex information so that it is more accessible and compact.

WHY IS IT IMPORTANT FOR ADOLESCENTS?

Adolescents encounter a wide variety of graphic texts in their academics as well as in texts they read outside of school. They see these types of texts in traditional media (e.g., textbooks) as well as in digital, non-traditional forms (e.g., social media) (Serafini, 2011).

Although graphic texts, such as infographics, may at first appear relatively accessible (e.g., because the visual content supports understanding of information and ideas), they can often be even more dense and less

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explicit than many print texts. This may be due to the variety of elements used to create the whole graphic text, for example, and the implicit relationships that may underlie within a single element (e.g., ideas are implied through size of visual, proportion and placement, as well as the relationships of ideas and information across the text as a whole). Simply put, effective readers and users of graphic texts need to understand the way visual and print language works to convey meaning. As with any text, understanding the demands of the text becomes vitally important.
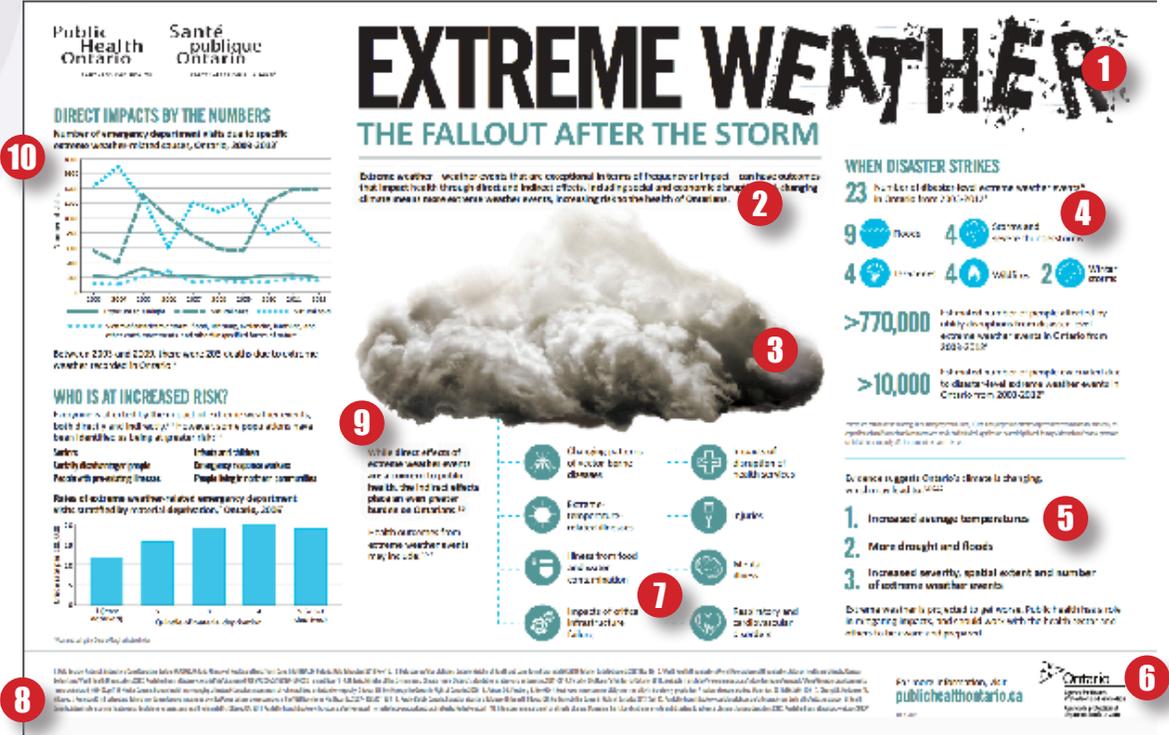
GETTING STARTED

- Use a variety of graphic texts for students to discuss and think about ideas and information in the texts. When looking for relevant examples of graphic texts, use a Internet search with keywords 'graphic text' or 'infograph' with a topic (e.g., Canadian population growth). Check the credibility, accuracy and appropriateness of the text.

- Recreate the information from a graphic text (e.g., transfer information from an infographic into paragraphs) to show similarities and differences in how the information is presented and meaning is conveyed. Discuss the efficiencies of graphic and non-graphic texts.

- Pose questions which ask students to think about what is explicitly given in the graphic text and what is implied in the graphic text. Also have students pose their own questions about what they understand and what they want to know related to the text.

- Guide students to raise questions of any biases in the graphic texts, and explore how these biases are evident in the visual presenation of the information.

- Identify vocabulary related to the elements of a graphical text (e.g., graphs, legends, citations).

TRY IT OUT: NAVIGATING A GRAPHIC TEXT

The demands of any text, those aspects that a reader needs to navigate in order to make sense of a text, may come from both the information and ideas as well as the way a text is stuctured. These demands may also apply to a graphic text.

The infographic "Extreme Weather" may be useful for the purposes of exploring questions, such as *What are some sources of information and data on extreme weather occurrences in the past 10 years and their relation to climate change?* (Ontario Curriculum, Geography, Grade 7) or *What is the effect of more extreme weather on public safety?* (Ontario Curriculum, Geography, Grade 9, Applied). This text has a number of demands that readers will need to navigate. For example,

1. The designer of this text used a font in the headline that looks like the letters are being destroyed by the extreme weather. There is a connection between the font style and the meaning in the headline. The subheading provides a narrower focus about the topic.

2. Included in the definition of extreme weather is a description of possible outcomes related to the topic: "extreme weather...can have outcomes that impact health through direct and indirect effects, including social and economic disruptions."

3. A focal point of this text is a cloud which matches the topic, and the reader's eye may be drawn to it; however, it does not provide additional information nor does it directly support the meaning of other information in this text.

4. There are two sets of icons in the graphic, and the colours of the icons represent two categories of information. The blue icons denote extreme weather events in Ontario from 2003 - 2012, including floods and tornados. The green icons (7) denote the health
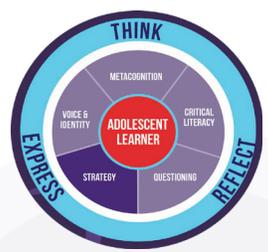
EXTREME WEATHER
THE FALLOUT AFTER THE STORM

Public Health Ontario / Santé publique Ontario

DIRECT IMPACTS BY THE NUMBERS

WHO IS AT INCREASED RISK?

WHEN DISASTER STRIKES

CREATING GRAPHIC ELEMENTS FROM STUDENTS' OWN DATA

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outcomes from extreme weather events, which may include changing patterns of diseases and injuries.

5. There are specific claims about how climate may be changing. Do these claims look accurate and valid?

6. The source is indicated as the Public Health Ontario. Knowing the source can lead to questions: Is this a credible source? Do I trust this information?

7. This section lists specific answers to the question: How will more extreme weather impact public safety?

8. All of the superscripted numbers refer to sources of the information which are listed at the bottom of the infographic. What do these sources indicate about the credibility and validity of the information in the text?

9. This statement indicates how indirect effects will place a burden on Ontarians. This connects to the statements on the right side of the page.

10. The line graph combines multiples categories of data over time. There are two types of graphs here: a line graph and a bar graph. Why did the author use two different types of representations? A line graph usually shows continuous data and allows for the simultaneous representation of multiple related data sets. A bar graph typically shows discrete (counted) data.

CREATING GRAPHIC ELEMENTS FROM STUDENTS' OWN DATA

One way to help students understand the meaning of graphics, such as graphs and charts, is to create these from data that comes from the students directly. Pose questions to collect their responses, for example, *What types of technology do you use? How many hours do you spend on a device?* and use the data to create charts and graphs.

Work with the students to generate representations of data from the responses. This can be done through low tech (e.g., do a hand count of students based on a survey questions

THINK

METACOGNITION

VOICE & IDENTITY — ADOLESCENT LEARNER — CRITICAL LITERACY

STRATEGY — QUESTIONING

EXPRESS — **REFLECT**

The Adolescent Literacy Guide outlines components which support students' abilites to think, express and refect. Strategy is one of the components to which this ALERT connects.

and create bar graphs using small square sticky notes representing each response), or through more tech (e.g., use an online survey tool, such as Google Forms), and create a variety of charts and graphs with the data to which the students can directly relate.

Use the graphs and charts for opportunities to read and pose questions about the data and what it means. Then pose some metacognitive questions, such as *How does creating charts and graphs from our own data help us to read and understand reading these graphic texts? What questions might we ask about other graphs and charts based on this experience of creating our own?*

USING TALK TO CLARIFY CONFUSION IN AN INFOGRAPHIC

Like any text, readers can develop an understanding from infographics by exploring what they know and what they are confused about in terms of the facts of a text. The Confused/Understand Chart provides a way to document what readers understand and don't understand. It also provides a structure for discussion that allows learners to work from what they understand to new understandings through collaboration, talk and questioning. In addition, it is a way to assess students' understanding, and to respond to those challenges if they are necessary for students to construct meaning (Vinton, 2017).

The instructional strategy involves chunking the text, and having students focus on that particular chunk (e.g., by displaying a section) at a time. Note on a t-chart (e.g., using chart paper) what students share through discussion about what they understand and what they find confusing, for example:

What We're Confused About	What We Understand
for the chunk that includes the main title and subheading "Extreme Weather: The Fallout After the Storm" and the definition of extreme weather that follows	
- What would an indirect health effect of extreme weather on people's health be? - What types of extreme weather is this text referring to? - What does 'fallout' mean?	- there are direct effects of extreme weather on people's health - one effect might be that people are injured during a tornado

IN BRIEF

Graphic texts often present large quantities of data and information in a visually appealing way. However, this may not mean these texts are more accessible than print texts. Adolescents who navigate graphic texts are able to derive meaning, both explicit and implicit, by understanding how the various visual elements within a graphic text work and the meaning they might convey.

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