



Communicating Science and Technology Lesson 6		Grade 8, Science and Technology
Critical Learning		Guiding Questions
<ul style="list-style-type: none">• Reasons why communication is important in science and technology• Ways of communicating science information and ideas for a variety of purposes to a variety of audiences• Characteristics of a variety of forms of communication		<ul style="list-style-type: none">• What kinds of information do scientists and technologists communicate?• How is science and technology information communicated?• Why is communication important to science and technology?
Curriculum Expectations		
Developing Investigation and Communication Skills 2. Investigate factors that affect local water quality 2.6 use appropriate science and technology vocabulary, including water table, aquifer, potable, and freshwater, in oral and written communication 2.7 use a variety of forms (e.g. oral, written, graphic, multimedia) to communicate with different audiences for a variety of purposes		Learning Goals Students will be able to: <ul style="list-style-type: none">• identify purposes for science communication• identify possible audiences for science communication• describe the characteristics of a variety of forms for communicating science• explain why communication is important in science
Instructional Components and Context		
Readiness <ul style="list-style-type: none">• Reading a variety of text forms• Comparing texts	Terminology <ul style="list-style-type: none">• Reliable	Materials <ul style="list-style-type: none">• Comparison Matrix• RAFTS

Minds On (Elicit and Engage)

Investigation and Research Teams → Assessing Reliability Understanding the Process

Provide teams with samples of various texts on science and technology topics, (e.g., science or technology magazine article, daily news report, science and technology textbook, written, graphic, or oral public service announcement, slide presentation, lab report, scholarly research article, editorial, government brochure, biography, comic strip, political cartoon, film, documentary, picture book, web site, blog, mind map).

Ask: "For what audience is each written? For what purpose? For what kinds of science and/or technology information? By whom?"

Debrief, summarizing information in a **comparison matrix**.

Tell students that they are seeking reliable information on a specific science topic related to water.

Students rate each source on a Likert scale from reliable (trustworthy) to unreliable (not trustworthy).

Debrief, soliciting reasons for their rating and developing criteria to judge the reliability of sources of information, (e.g., genre, author/sponsor, currency, corroboration with other sources).

Pause and Ponder

QuickTip

See **Think Literacy Subject-Specific Examples: Library Research, Grades 7-12** for organizers and approaches to resource evaluation, pp. 20-23. Criteria include: authority, accuracy, currency, completeness, objectivity and format of the information source.

Action! (Explore and Explain)

Investigation and Research Teams → Examining Forms of Communication

Using **RAFTS** and **Think-Aloud strategies**, model how to analyze a communication form.

Set up stations, each focusing on a particular form of communication which students will be able to practise and from which they will be able to select for the performance task. Stations can include forms studied in other subjects, (e.g., language or history, linking knowledge across subjects). Ensure that each centre is provided with 3-4 examples of each graphic or prose form and a blank RAFTS organizer. Groups rotate through stations.

Debrief by co-constructing **anchor charts** of key features for each form.

QuickTip

Remind students of collaborative learning norms. Provide specific feedback when practising these during group work.

A for L Provide feedback on their identification of key features for each of the communication forms. Note which forms will require examples and explicit teaching.

Consolidation (Elaborate, Evaluate, Extend)

Individual → Communicating Research Findings

Students select one form of communication and use a RAFTS organizer to plan one of their pieces for the Gallery Walk focusing on their topic. They work from their plan to draft, obtain feedback, and revise this piece of communication. Students keep the process for this piece in their Water Portfolio.

A for L Provide feedback on their understanding of the communication form and content.

Minds On

Comparison Matrix

A comparison matrix is a table, or intersected list, used to summarize and compare information from multiple sources. For example, aspects of the topic may be listed down the side and sources (Source #1, Source #2, and so on) identified across the top. It is critical to note that the similarities and differences between sources result from actively making comparisons between, or processing, information in the matrix cells. The matrix can also be analyzed through other lenses, such as:

- explicit and implicit information
- fact and opinion
- supported and unsupported information.

Sample Comparison Matrix

	Comic Strip	New Report	Blog	Textbook
Author				
Audience				
Topic				
Purpose				

Action!

Think-Aloud

Think-Aloud is an instructional scaffold that models thinking processes, making the invisible visible. In a Think-Aloud, the teacher verbalizes how effective readers process the text, e.g., by monitoring comprehension and using strategies to construct meaning. While teachers can think aloud at any point in an instructional sequence, Think-Alouds are frequent during the modeling phase of the gradual release model and during Read-Alouds.

See **Think Literacy Subject-Specific Examples : Language/English, Grades 7-9**, *Engaging in Reading: Reading Between the Lines/Inference*, page 3.

A Think-Aloud is a form of explicit instruction that requires teachers to be aware of their own thinking processes and that helps student think about their thinking. Developing metacognitive awareness is an important aspect of learning.

See **Metacognition Guide**.



RAFT

RAFT (Role, Audience, Format, Topic) or **RAFTS** (Role, Audience, Format, Topic, Strong Verb) is a graphic organizer used for planning. Students use this tool to explore the role they will take on as creators, the audience they will address, the varied formats for their product, and the topic.

A RAFT establishes a context for writing by focusing on the dynamic connections between author, audience, topic, form, and purpose that are at the heart of communication. As with other graphic organizers, RAFT provides a framework to consider the various components (i.e., Role, Audience, Format, and Topic) as well as the relationships between them. RAFT can be used as a planning tool for media, written, and oral communication.

See **Student Success DI Package 2007, DI Cue Cards: Structures – RAFTs**

See **Think Literacy Subject-Specific Examples, Language/English, Grades 7-9, Generating Ideas: Setting the Context**, pp. 32-37.

RAFTS

Role Who wrote, produced, or sponsored the text?	
Audience For whom is the text created?	
Form What kind of text is it and what are its features?	
Topic What is the text about?	
Strong Verb What is the purpose of the text, e.g., to persuade? Explain?	

Anchor Charts

An anchor chart is a strategy for capturing students' voices and thinking. Anchor charts are co-constructed. By making students' thinking visible and public, they "anchor," or stabilize and scaffold classroom learning. Anchor charts should be developmentally appropriate and clearly focused, accessible, and organized.