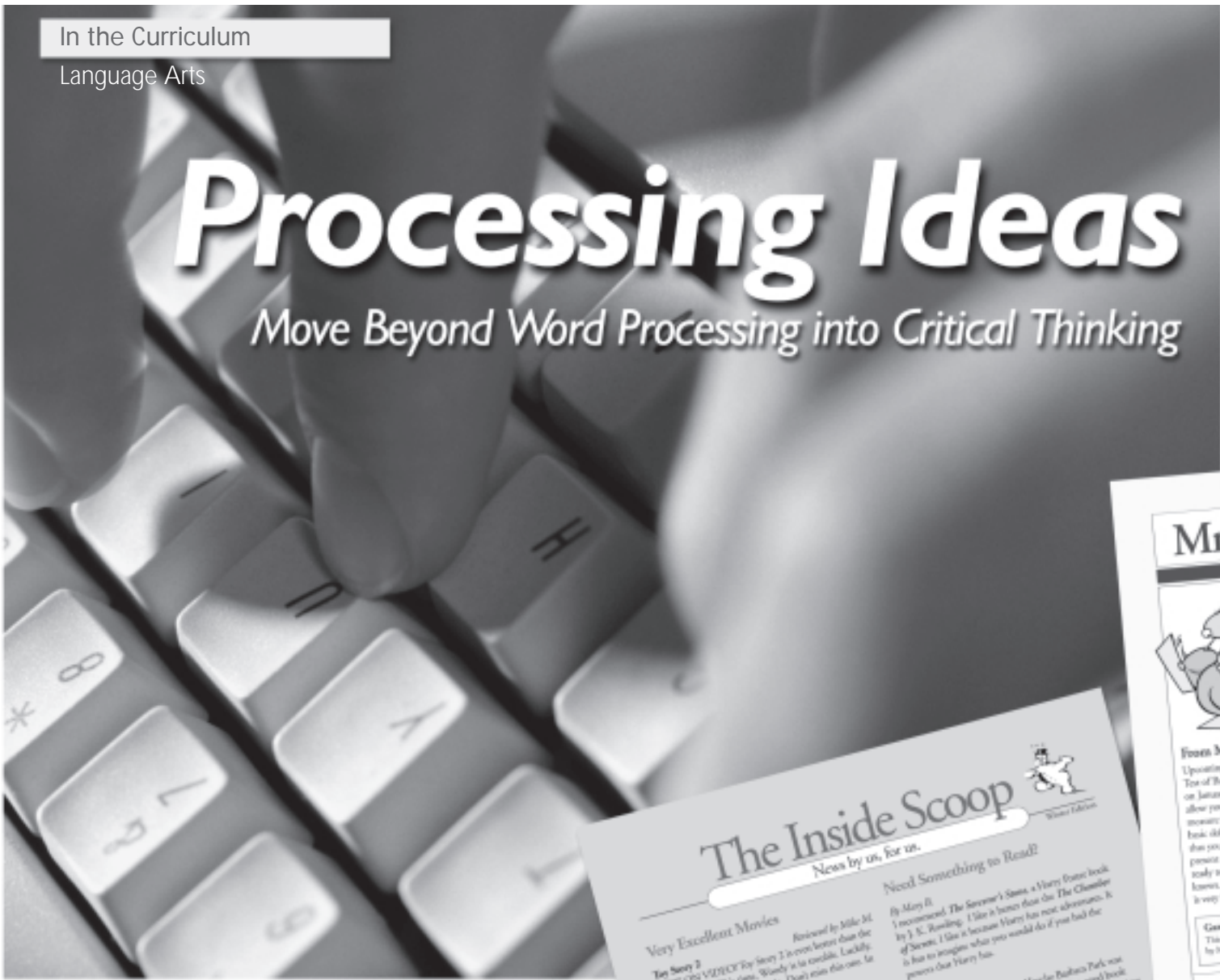


# Processing Ideas

Move Beyond Word Processing into Critical Thinking



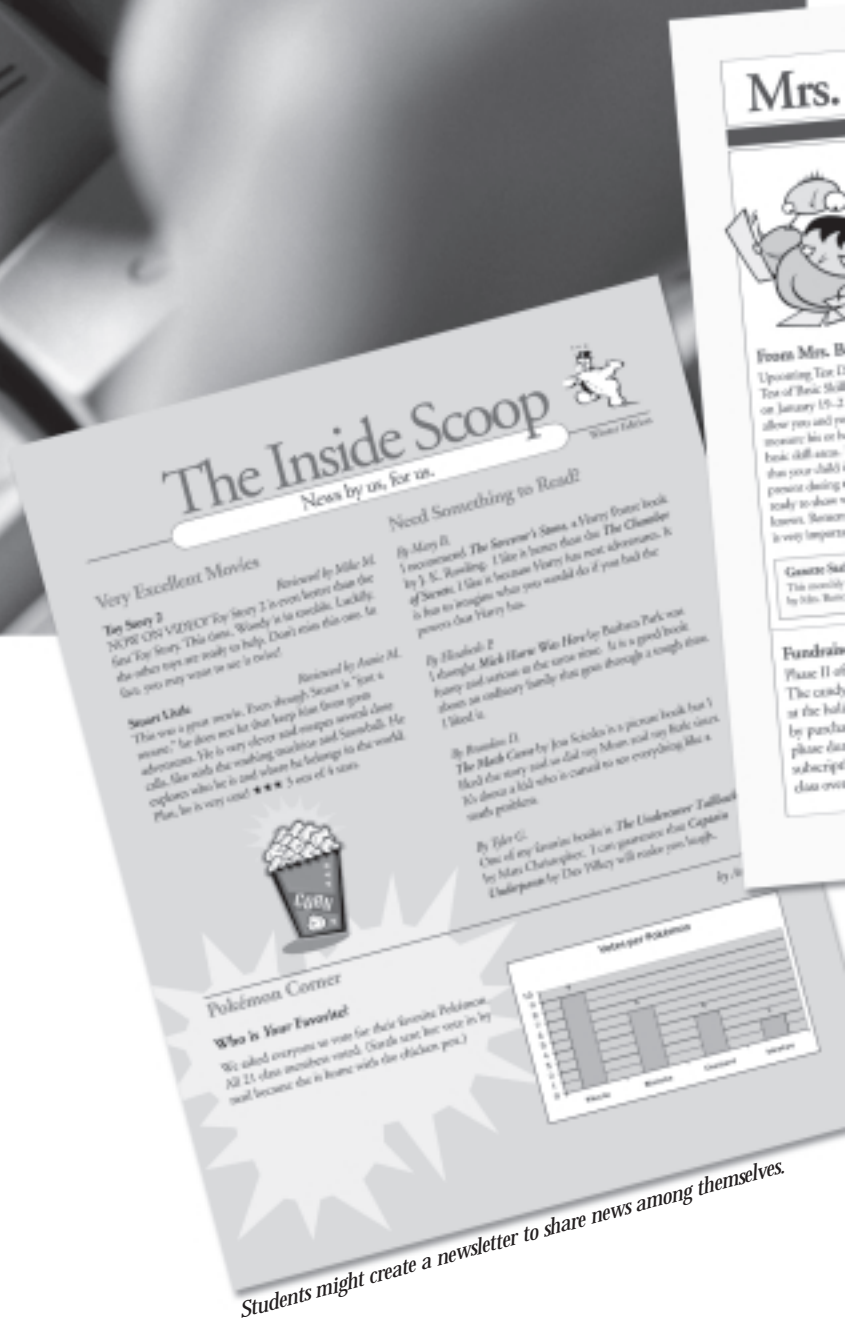
By Sara Dexter  
and Susan Watts-Taffe

**Subject:** Language arts, graphic design, multidisciplinary

**Grade Level:** 5–9 (Ages 10–14)

**Technology:** AppleWorks (Apple), Word and Works (Microsoft)

**Standards:** NETS•S 3–6. (Read more about the NETS Project at [www.iste.org](http://www.iste.org)—select Standards Projects.) NCTE/IRA 3–8. (Read the language arts standards at [www.ncte.org](http://www.ncte.org).) *New Standards: Language Arts* 1–5. (Find out more at [www.ncee.org/OurPrograms/nsPage.html](http://www.ncee.org/OurPrograms/nsPage.html).)



Students might create a newsletter to share news among themselves.

Technology can help students access and process information to generate knowledge and communicate it to others. However, most classroom technology use focuses on access and communication without paying adequate attention to the critical processing component. This article provides a detailed look at how teachers can support students in using basic word processing technology to influence the way students reflect and respond to a wide variety of print and nonprint texts to build an understanding of these texts.



*Students might create a newsletter geared toward their parents to share class news, important dates, and so on.*

*Students can print slides from a presentation and create a posterboard display.*

Increasingly teachers are finding technology useful for helping students access data, process information, and communicate knowledge. Technology facilitates access to a greater amount of data than traditional research methods; speeds search and retrieval; provides templates or scaffolds on which to organize, select, and formulate ideas; and encourages and simplifies revision of communications for greater precision and effectiveness.

Though each stage of knowledge production has its own distinct characteristics, the stages are also interconnected; learners move among the three as they work. For example, for students to effectively communicate their knowledge, they must convey content clearly to a specific audience. Yet such a message requires more than access to raw

data; the data must be processed into useful information. Clearly, if any phase in this process is neglected, the others will be weakened as well.

Despite this interdependency, classroom technology use all too often focuses only on the accessing and communicating phases of students' work. Many classroom teachers have already discovered the benefits of CD-ROMs and the Internet for accessing information, and computer applications are widely used to communicate information through multimedia reports, slide shows, and text documents. For the *processing* of information, however, technology's potential for aiding student learning and achievement is undertapped. This article focuses on the relationship among:

**Orion**  
 by Terry Wattson

**Orion's Shape**

- Find Orion by his belt,
- then look for his shoulders and knees,
- finally, look for his sword.

**Orion's Features**

- Contains a Nebula
- Binary stars include alpha and delta
- Acts as a pointer to other constellations
- Prominent winter constellation

**The Greek Myth of Orion**

- Orion was supposedly a mighty hunter. One day, he nearly killed a god who was disguised as an animal. To punish him he was put into the sky, to hunt forever. His hunting dog is nearby, as Canis Major.

1. the instructional planning for the style and format of the communications students use to demonstrate their knowledge,
2. the specific modes of information analysis and synthesis required by such communications, and
3. the role technology can play in students' processing of their ideas.

Thus, it emphasizes the key role teachers play as instructional designers who create assignments that maximize learning and technology use.

### **Idea Processing and Effective Communication**

In the past 10 years, educators in most subject areas have developed national standards that call for student performance to reflect authentic, real-world tasks and require students to think and communicate at new, higher levels. To demonstrate their mastery of these content-area standards, students must often produce original products or performances that reflect their acquisition and processing of the information in question.

Correspondingly, language arts national standards have come to stipulate that students be able to write across the curriculum in a variety of formats, such as persuasive essays, short stories, or research reports. As stated by the National Council of Teachers of English (NCTE, 1996), students should be able to:

employ a wide range of strategies as they write and [to] use different writing process elements appropriately to communicate with different audiences for a variety of purposes (standard 5).

Although specific content-area standards provide a variety of topics and areas of inquiry that students should be able to write about, the NCTE points out that students also require numerous opportunities to compose communications:

for different audiences and purposes [so as to] enable students to understand the varying demands of different kinds of writing tasks and to recognize how to adapt tone, style, and content to the particular task at hand (standard 7).

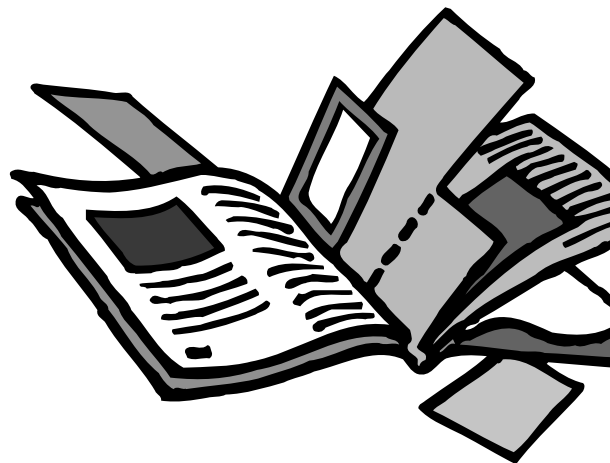
This standard thus reminds us that the form of the written product assigned shapes the thought processing required to produce it.

### **Idea Processing and Communication Format**

The relationship between format and thought can be demonstrated by examining two writing assignments that use a word processor: newsletters and posters. As they show, a writing format can be enhanced by using a word processor. The assignments employ features of word processors that extend beyond producing simple text, functions such as the incorporation of graphics and the formatting and styling of text. Using these functions requires students to carefully examine their content and its expression, thereby encouraging them to extend and refine their thinking. Examples of word processing programs that include these capabilities are common in classrooms, such as AppleWorks (formerly ClarisWorks), Microsoft Works, and Microsoft Word. (Desktop publishing software can also be used for such activities, but we chose

to focus on software that most teachers already have and know how to use.)

**Assignment One: Newsletter.** Newsletters have several distinct features. They usually are short, are easy to browse for quick extraction of information, and incorporate graphic design elements. They also serve as a means of building



and maintaining a community. Usually written with a specific audience in mind, they tend to reflect and perhaps even advocate a supposedly shared point of view while also presenting content in ways that allow people with varying levels of expertise or interest to find it useful. Teachers can analyze example newsletters with their students to help them understand the challenges of writing for a specified audience and to fit limited space.

First, to make a newsletter easy to browse, writers must “translate” their information into words familiar to their audience. They must select language that is precise and details that are essential to their purposes. Because newsletter articles are brief, writers must summarize information by identifying and selecting the main ideas. Possible topics for inclusion must be narrowed so that page requirements can be met. These needs also dictate that the authors must synthesize the “big picture” and rearrange information into new or more concise categories. For example, Ms. Barrett’s fifth-grade class creates one newsletter for parents and another for peers. In the newsletter

for parents they include items of interest for that particular audience such as upcoming test dates, brief summaries of the units of study under way, reports of the recent field trip, and progress reports on the fundraiser. To their peers they report movie reviews, recommended books, and the results of a recent opinion poll on everyone's favorite Pokémon™ character.

Newsletter designers must arrange text and graphic elements so that the most important ideas stand out and their relationships to one another are clear. Graphic design elements such as type style, columns, photos, tables, graphs, and bullets help the designer establish a tone appropriate for the content and audience and make the newsletter visually appealing.

Finally, because newsletters are so often intended to maintain community, newsletter writers must analyze the information to be included to determine how it corresponds to the key values, needs, and interests of the audience and then craft the message accordingly.

It is easy to see that when a teacher presents his or her students with an assignment to create a newsletter and reviews with them its salient features, they have to think about their knowledge in new ways to communicate effectively. Thus, using a software program that facilitates newsletter creation can support students' decision making about how best to meet such communication needs. Word processing software allows authors to try out their ideas and see actual renderings quickly. This not only facilitates the authors' revision process but also allows others to provide specific suggestions for improvement. It also emphasizes and provides practice in the inevitable editing required of final written products.

**Assignment Two: Poster.** Another style of communication that is easily achieved with robust word processing software is the poster. A poster is essentially a printed version of the format-

ting used in programs such as an AppleWorks slideshow presentation, in which, presenters usually place just a few words and perhaps a visual on one or a series of slides to accompany an oral presentation. A poster uses these same features but in the end is printed, rather than projected onto a screen. Several 8 ½" × 11" pages can be grouped together for presentation, in a manner reminiscent of a booth at a science fair. Teachers can decide if the poster presentations can stand alone or if they should be complemented by either the oral remarks of the author or a more formal and detailed written report.

In this assignment, the teacher helps students recognize that the unique features of a poster include the use of short phrases instead of complete sentences and of concise and catchy language to capture a reader's attention and convey major ideas. Posters also usually use bullet points, visuals, and large print so that they can be easily read from a distance. Noting these features allows teachers to talk with their students about how best to craft their communication accordingly.

Because the poster dictates short phrases and bold language, its creators must identify key ideas and eliminate nonessential information. Short phrases also require the most vivid and direct language to convey their message.

A poster also includes graphic-design elements, such as text formatting, borders, and other geometric shapes. These require the designers to analyze the aims and tone of their messages closely and then find compatible design elements to serve as symbolic equivalents. As with the newsletter, the authors must coordinate the visual message with the needs of the presenter and the audience.

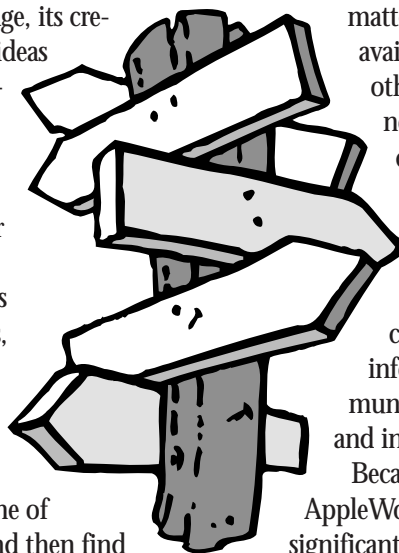
Students presented with an assignment to create a poster, reminded of its essential characteristics, and allowed to put the features of a word processor to work for them as they craft an appropriate message will have to carefully consider how best to communicate their knowledge within the given format. As with the newsletter assignment, the word processor can also facilitate the revision and editing process as students respond to teacher or peer feedback and shape the message to the audience.

### Instructional Planning

The newsletter and the poster (1) illustrate how the manner in which students process ideas is shaped by the format of the assignment they are given and (2) speak to the importance of instructional planning in the effective use of technology. During instructional planning, teachers need to formulate the focus of inquiry, the mode of analysis, the purpose and audience, and the format appropriate for a given communication that students are asked to produce. This means determining the extent to which students must both

analyze and communicate subject matter and effectively use available technology. In other words, using technology effectively in the classroom involves instructional planning that considers how technology might assist students in accessing data, processing information, and communicating their findings and insights.

Because software such as AppleWorks, Works, and Word significantly extends the variety of formats teachers can use to measure student learning—newspapers, posters, graphs, and concept maps, for example—it can also extend the amount and nature of thought demanded of



students. As with any assignment, however, students will require sufficient models, teacher demonstration, and guided practice if they are to be successful. Day-to-day assignments in language arts, social studies, math, and science should provide practice in accessing data, processing information, and communicating learning in a variety of ways and for a variety of purposes. To these ends, a cross-disciplinary approach cannot be overemphasized.

There are two cautions to keep in mind when planning to use a word processor as an idea processor. First, students need certain software operation skills to be adequately proficient with the design elements required in these assignments. Second, there is a tendency of some students to

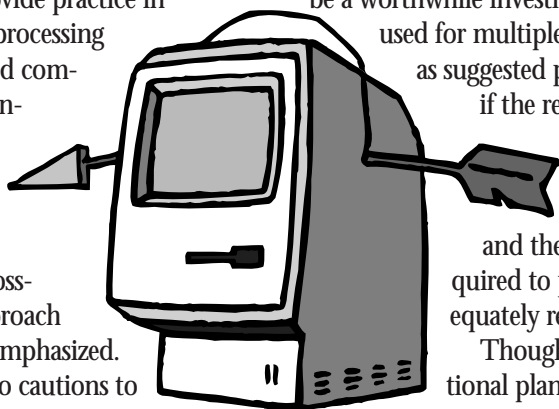
get wrapped up in the beauty and originality of their product at the expense of its content, which can distract from the desired intellectual tasks of the assignments. Yet teaching the students how to master specific software features can be a worthwhile investment if they are used for multiple assignments, as suggested previously, and if the relationship between the format of a communication and the thinking required to produce it is adequately recognized.

Thoughtful instructional planning will also help keep the focus on the purpose and content of a communication rather than on the “gee whiz” features of the software. Stressing the analytical features of an exemplary model with students and the conceptual criteria by which their work will be

graded—perhaps a rubric that students would use to assess their own work and that of their peers—will clearly declare what will be valued in their end products. (See “Self-Assessment Checklist” below.) Finally, having an authentic assignment—real work being produced for a real audience—will also help students focus on what they have to say as well as on how they present it. For example, if students receive assignment guidelines that emphasize factual accuracy and know that their neighbors and other community members will be reading their work, they should know to focus their attention on the content and its clear expression.

**Conclusion**

The newsletter and poster examples we elaborate on here are only two examples of using a word processor as an idea processor. As teachers begin to design instruction that integrates technology in ways that support all the dimensions



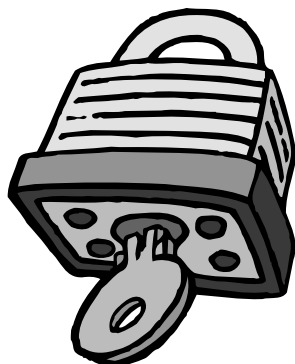
Self-Assessment Checklist		Name _____
Check off if present	Characteristic of written piece	Provide a specific example of this characteristic from the assignment
	Appropriate for audience, including language use, tone, topic choice	
	Level of detail is appropriate for format and audience	
	Graphic design enhances communication, does not distract the reader	
	Feedback on draft gathered and responded to	

of students' work with ideas, the technological resources at hand will more greatly enhance student thinking and achievement. It is then that we will have realized the true worth of classroom technology.

### Editor's Commentary

A wonderful resource for analysis of the critical-thinking, idea-processing aspect of word processing is *Working with a Word Processor* by William Zinsser (1986, Harper and Row). In addition, the authors' comments about the applications of critical thinking to newsletters and posters also apply to newspapers created in word processing software that reflect, report on, and retell language arts stories, novels, and poems. Furthermore, language arts educators and other integrated language arts teachers and literacy specialists may also want to consider how word processing technology reflects and resonates the principles of learning that are the philosophic underpinning of the New Standards put out by the University of Pittsburgh in 1997 ([www.ncee.org/OurPrograms/nsPage.html](http://www.ncee.org/OurPrograms/nsPage.html)). These performance standards include such word-processing-enabled activities as models of student work, celebration with family and community, learning as apprenticeship, performances for authentic audiences, products that meet quality standards, extended projects, active use of knowledge, interpretation of texts, and testing understanding of knowledge by applying and discussing comments.

—Rose Reissman



### Resources

For product overview and academic pricing for AppleWorks (formerly ClarisWorks), visit [www.apple.com/appleworks](http://www.apple.com/appleworks).

For product information for Microsoft Works and Microsoft Word, visit [www.microsoft.com](http://www.microsoft.com).

### Reference

National Council of Teachers of English. (1996). *Standards for the English language arts*. Urbana, IL: Author.



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