Profiles for Technology Literate Students

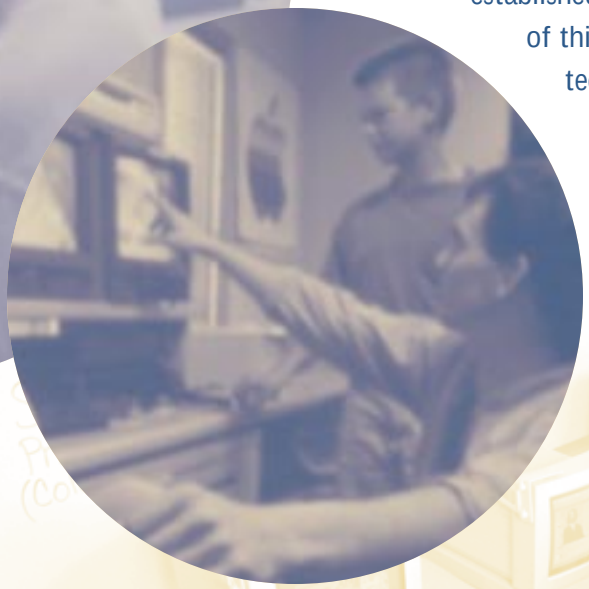
A major component of the NETS Project is the development of a general set of profiles describing technology literate students at key developmental points in their pre-college education. These profiles reflect the underlying assumption that all students should have the opportunity to develop technology skills that support learning, personal productivity, decision-making, and daily life. These profiles and associated standards provide a framework for preparing students to be lifelong learners who make informed decisions about the role of technology in their lives.

The Profiles for Technology Literate Students provide performance indicators describing the technology competence students should exhibit upon completion of the following grade ranges:

- *Grades PreK–2*
- *Grades 3–5*
- *Grades 6–8*
- *Grades 9–12*

These profiles are indicators of achievement at certain stages in PreK–12 education. They assume that technology skills are developed by coordinated activities that support learning throughout a student's education. These skills are to be introduced, reinforced, and finally mastered, and thus, integrated into an individual's personal learning and social framework. They represent essential, realistic, and attainable goals for lifelong learning and a productive citizenry.

The standards and performance indicators are based on input and feedback from educational technology experts as well as parents, teachers, and curriculum experts. In addition they reflect information collected from the professional literature and local, state, and national documents.

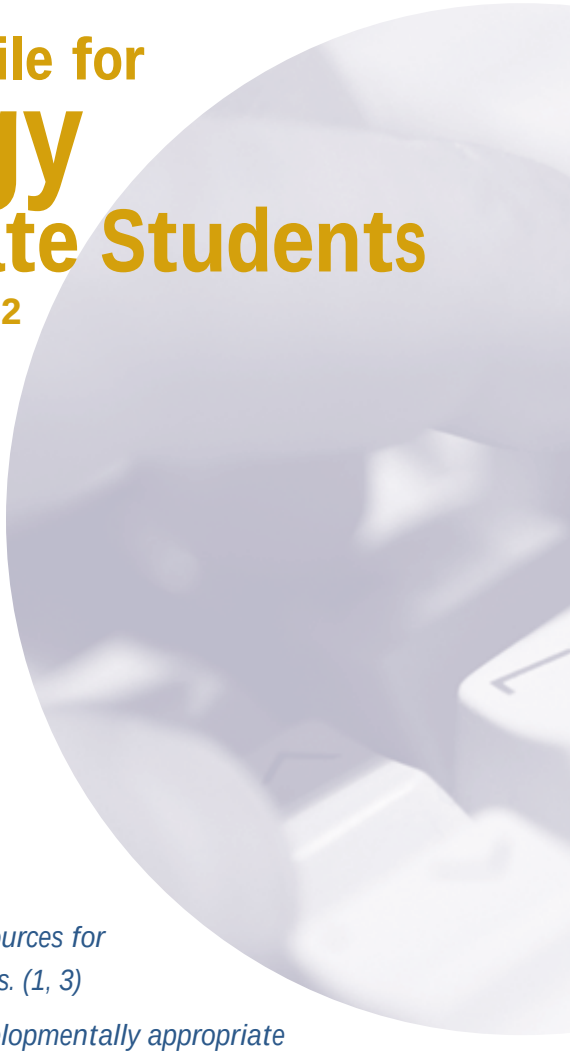


Technology Integration — Examples and — Scenarios

Linked to each profile is an example or scenario which exemplifies the use of technology by teachers and students to facilitate learning. The scenarios describe classroom practice that reflects not only the NETS standards and profiles, but also, content standards from curriculum organizations such as the National Council for Teachers of Mathematics, International Reading Association, and National Council for Social Studies. The scenarios provide a curricular context for the use of technology to create varied learning environments being established across America. It is not the purpose of this document to promote the use of technology in isolation, but rather as an integral component or tool for learning and communications within the context of academic subject areas.

Profile for Technology Literate Students

GRADES PREK–2



Performance Indicators:

All students should have opportunities to demonstrate the following performances.

Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked. The categories are:

1. Basic operations and concepts
2. Social, ethical, and human issues
3. Technology productivity tools
4. Technology communications tools
5. Technology research tools
6. Technology problem-solving and decision-making tools

Prior to completion of Grade 2 students will:

1. *Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audio tapes, telephones, and other technologies. (1)*
2. *Use a variety of media and technology resources for directed and independent learning activities. (1, 3)*
3. *Communicate about technology using developmentally appropriate and accurate terminology. (1)*
4. *Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning. (1)*
5. *Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom. (2)*
6. *Demonstrate positive social and ethical behaviors when using technology. (2)*
7. *Practice responsible use of technology systems and software. (2)*
8. *Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)*
9. *Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)*
10. *Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4)*

Curriculum Examples and Scenarios

GRADES PREK–2

Scenario 1:
Animals and Their Sounds

Grade Levels: K–2

Technology Profile Performance Indicators: 1, 2, 3, 4, 8, 9

Subject Areas: Reading, Science

Source: Sharon Fontenot, Prien Lake Elementary and the Louisiana Challenge Grant Leadership Program, Louisiana Tech University

While every child may not be able to see animals in the wild, every child can see, hear, and learn about wild animals through multimedia technology. In Sharon Fontenot's class at Prien Lake Elementary School, students learn to identify polar bears, lions, and other animals from the wild and to recognize their sounds using images, video clips, and sounds on the Wide World of Animals CD-ROM. The teacher models the creative use of technology by making a tape recording based on information from the CD-ROM that incorporates her own voice and fits the group's needs.

Students practice reading and listening skills by answering questions that encourage them to think about both the science and social living issues related to these animals. Where do these animals live? What do they eat? Why do some have thick fur? How do they interact with each other?

Students then create their own stories about what they have learned using Kid Pix ®, a software program that lets them make their own pictures of the animals, assemble them into slide shows, and print out their own books to share with classmates and their families. The teacher can videotape the students' activities as part of their assessment and to share with students and parents.

Scenario 2:
I Lost My Tooth!

Grade Levels: K–2

Technology Profile Performance Indicators: 1, 2, 4, 5, 8, 9, 10

Subject Areas: Health, Language Arts, Social Studies

Source: Boehm, Diann. (April, 1997). I Lost My Tooth! *Learning and Leading with Technology.* 24 (7), 17-19.

A first grade teacher can use this activity to introduce her class to Internet technology for the first time. Teachers use e-mail once a month to relate how many teeth their students lost along with one special fact about their region or culture. Students share tooth-fairy traditions and other stories from their region.

Using the information from students from around the world, teachers develop activities including creative writing, graphing, art, and social studies. Students use an interactive bulletin board where they post dates when teeth were lost, create a letter as a class about the project to post on the Internet, collect information from other children about tooth fairy stories, develop creative writing stories about their "tooth" experiences and share them with other children via the Internet, initiate electronic conversations about where the other children live, use maps to locate the countries/cities where other children live, and address topics with other children such as weather, politics, clothing, and local heroes of their regions. The students use electronic slide show/drawing software to illustrate the fairy stories, and software to graph the tooth data. Then they write a letter explaining what the graph means and send it to keypals around the world.