

# 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.



# Profile for Technology Literate Students

GRADES 9 – 12

## 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 12 students will:

1. *Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs. (2)*
2. *Make informed choices among technology systems, resources, and services. (1, 2)*
3. *Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole. (2)*
4. *Demonstrate and advocate legal and ethical behaviors among peers, family, and community regarding the use of technology and information. (2)*
5. *Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence). (3, 4)*
6. *Evaluate technology-based options, including distance and distributed education, for lifelong learning. (5)*
7. *Routinely and efficiently use on-line information resources to meet needs for collaboration, research, publications, communications, and productivity. (4, 5, 6)*
8. *Select and apply technology tools for research, information analysis, problem-solving, and decision-making in content learning. (4, 5)*
9. *Investigate and apply expert systems, intelligent agents, and simulations in real-world situations. (3, 5, 6)*
10. *Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. (4, 5, 6)*

# Curriculum Examples and Scenarios

## GRADES 9–12

### Scenario 1: *Presidential Elections*

Grade Levels: High School

Technology Profile  
Performance Indicators:  
5, 7, 8

Subject Areas:  
Social Studies, Language  
Arts, Mathematics

Source:  
Based on a lesson created by  
a Southern California  
teacher and presented in a  
class at California State  
University, Los Angeles.

The U.S. system of presidential elections can be a mystery for many citizens. Teaching middle school or high school students about the Electoral College can be quite a challenge. Mr. Sanchez, an high school social studies teacher in Southern California, developed an activity for his students that involves election data from the closest presidential election in history—the 1960 election between John F. Kennedy and Richard M. Nixon. This activity helps students understand the Electoral College and some of the strategies used by presidential candidates. Complete, state-by-state election results can be found at the following web site: <http://www.geocities.com/CapitolHill/6228/elections.htm>

Mr. Sanchez divides his students into groups and gives each a spreadsheet containing data from the 1960 presidential election. The spreadsheet contains the popular and Electoral College results from every state and territory. Formulas at the bottom of the columns calculate the total number of popular votes and Electoral votes for each candidate.

The groups are asked to conduct a series of investigations by manipulating the spreadsheet data. Students have printouts of the original data and the original data file on disk so that they can restore the spreadsheet after each manipulation. The questions they investigate are: “Can you change the data so that Mr. Nixon wins the election rather than Mr. Kennedy?” “Can you change the outcome of the election by changing the election results in only one state?” “Two states?” “Three states?” “Can you change the popular vote so that one candidate wins the popular election but loses the Electoral College results?” “Can you change the popular vote so that the same candidate loses the popular vote but wins the election (via the Electoral College results)?” “What is the least number of states you can change to have one candidate win the popular vote but lose the election?” These “what if?” activities help students gain an understanding of the Electoral College.

Finally, the groups prepare a multimedia report on the 1960 election using HyperStudio. They can include pictures of the candidates, charts and graphs from the election (e.g., <http://www.multied.com/elections/>) and a discussion of their spreadsheet manipulations.

