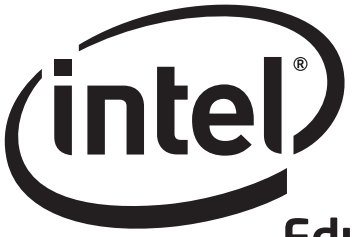


Intel® Teach Program
Thinking with Technology Course

Version 2.5

For Master Teachers

Welcome to the Intel® Teach Program Thinking with Technology Course.

Thanks to teachers like you, over 5 million educators worldwide have made technology learning more compelling and more relevant.

Dedicated teachers nurture the innovative potential in young people—preparing them to step into a world where an understanding of technology can help shape their success. Like you, Intel is passionate about education, because we know it is the foundation for innovation and opportunity. So, on behalf of Intel, I want to thank you for your participation in this course.

Since 1999, the Intel Teach Program has helped educators in more than 40 countries. Our programs are built by educators, for educators, and they combine best practices with the power of technology. Young people today are entering a global economy where they'll be challenged to analyze information, collaborate, and communicate their ideas using an ever-changing array of technology. As part of our network of teachers, you can help prepare your students to succeed in this competitive environment.

Innovation involves taking calculated risks but yields big rewards. Your participation in the Intel Teach Program brings that same spirit to the classroom, where we know your students will be the true winners.

Best regards,

Paul Otellini
Chief Executive Officer
Intel Corporation

Welcome

We welcome you to the Intel® Teach Thinking with Technology Course! We appreciate your commitment to the future of your students and to your profession as an educator. Students today, more than ever, need the ability to understand and deal with complex issues and problems. This course is designed to help you develop your students' critical thinking and collaborative skills. Thank you for investing your time and energy into this course and for your commitment to preparing your students to be successful in tomorrow's world.

Course Goal

The Thinking with Technology Course builds on effective technology integration skills where teachers use free online tools to support the development and assessment of students' higher-order thinking skills.

Goal: Participants leave the course with a standards-based unit plan, support materials, and implementation strategies to improve and assess students' higher-order thinking with the use of free online tools.

Course Overview

The Thinking with Technology Course looks at how teachers can use the Internet in new and constructive ways with students. The course helps teachers learn how to integrate into their curriculum unique online thinking tools that enable students to visually represent their understanding of complex and interconnected issues.

This course uses three, free thinking tools available on the Intel® Education Web site:

- *Visual Ranking Tool* (www.intel.com/education/visualranking)
- *Seeing Reason Tool* (www.intel.com/education/seeingreason)
- *Showing Evidence Tool* (www.intel.com/education/showingevidence)

The *Visual Ranking Tool* enables students to identify and refine ranking criteria for a list and then debate differences, reach consensus, and organize ideas. The *Seeing Reason Tool*, an interactive tool to create cause-and-effect maps, helps students investigate relationships in complex systems. The *Showing Evidence Tool*, a scaffold for constructing well-reasoned arguments, requires students to support cases with quality evidence.

This course helps teachers learn new technology tools, but, more importantly, promotes sound pedagogical practices.

These tools are designed to be thinking tools rather than productivity tools. Mastering the use of the tools technically is fairly straightforward, but working to ensure that they are used to enhance higher-order thinking skills and support student learning takes time and practice. Therefore, this course explains how to use the new tools as well as supports good teaching practices.

In addition to the thinking tools, two online resources support productivity:

- *Assessing Projects* application (www.intel.com/education/assessingprojects)
- Intel® Education *Help Guide* (www.intel.com/education/tools - select Help Guide)

The online *Assessing Projects* application and the Intel® Education *Help Guide* support the use of the thinking tools and student learning in general. The Assessing Projects portion of the Intel Education Web site provides strategies and resources to support student-centered assessment, including an application that allows teachers to create assessments from scratch or adapt assessments available in a library of editable assessments that focus on thinking skills. The *Help Guide*, a resource for both teachers and students, provides step-by-step instructions for the thinking tools, *Assessing Projects* application, and hundreds of technical skills for commonly used software applications.

The course and tools can be used in PC (using Microsoft Windows* operating system) or Macintosh* environments. (See Appendix A.01 for system requirements.)

Course Objectives

In this course, you will:

- Learn instructional strategies for addressing and assessing thinking skills using technology to increase opportunities for effective student collaboration, student-teacher interactions, and the inquiry process
- Create an instructional plan, sample projects, and assessment(s) that integrate the use of online thinking tools, align to standards, and support a project approach to learning and authentic inquiry
- Understand the online teaching tools and their workspaces, and how to manage a classroom project using an online environment
- Leave prepared to effectively implement a ready-to-use project using the *Visual Ranking, Seeing Reason* and/or *Showing Evidence* tools, which will help your students to manage, explore, and communicate their understanding of complex and interconnected issues

In the *Visual Ranking* portion of the course, you will learn strategies and create a technology-enhanced project to help students:

- Establish criteria to evaluate and prioritize information
- View issues from multiple perspectives and make decisions by seeking consensus and negotiating new options
- Collaborate with peers and community members

In the *Seeing Reason* portion of the course, you will learn strategies and create a technology-enhanced project to help students:

- Understand complex problems or systems that involve cause-and-effect relationships
- Discuss, represent, and defend interpretations of problems or systems that involve cause and effect
- Use mathematical reasoning and understanding across the curriculum through the use of logic, critical thinking, and the visual representation of direct and inverse relationships

In the *Showing Evidence* portion of the course, you will learn strategies and create a technology-enhanced project to help students:

- Develop effective argumentation skills
- Develop strategies for encouraging discussion as students make claims, support claims with evidence, debate differences, and reach conclusions
- Analyze and evaluate criteria for decisions

Modular Design

The course is designed in a flexible, modular format so that it can be presented in a variety of schedules and in seven formats, integrating the teaching tools:

- *Visual Ranking* only (7 modules, 24 hours)
- *Seeing Reason* only (7 modules, 26 hours)
- *Showing Evidence* only (7 modules, 26 hours)
- *Visual Ranking* and *Seeing Reason* (9 modules, 32 hours)
- *Visual Ranking* and *Showing Evidence* (9 modules, 32 hours)
- *Seeing Reason* and *Showing Evidence* (9 modules, 34 hours)
- *Visual Ranking, Seeing Reason,* and *Showing Evidence* (11 modules, 40 hours)

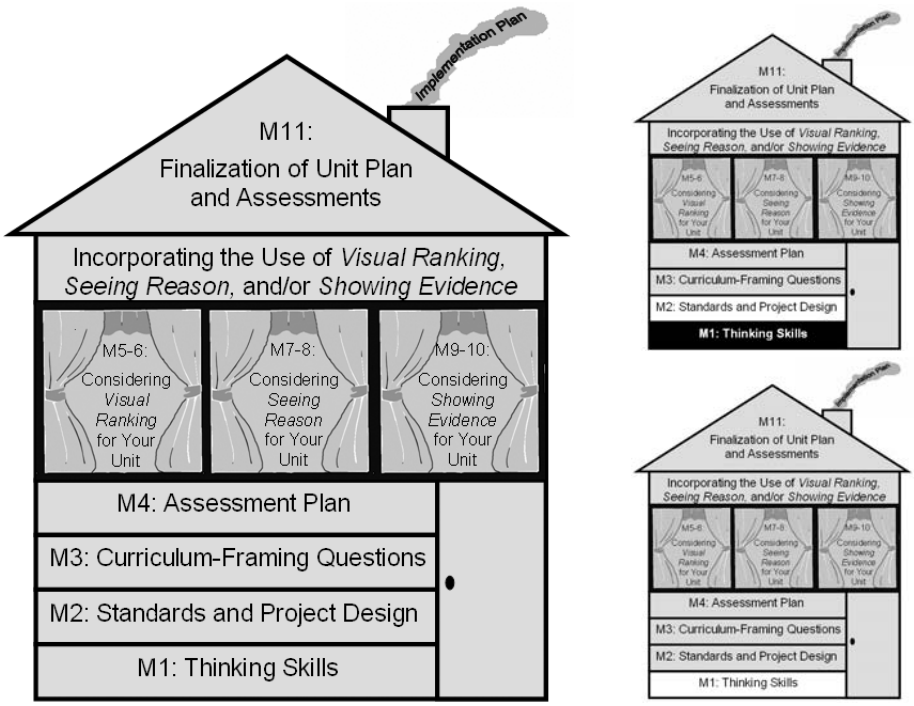
Building the Unit through the Modules

The table on the next page represents the possible modules available for this course through which you will build your unit. Your facilitator will indicate which modules will be completed in your course.

The house image is a visual organizer that appears on the back of each module divider to serve as a map to show you where you have been and where you are going.

This image is repeated throughout the modules to serve as a "you are here" map and to illustrate your progress as you build your unit. Look on the back side of the dividers to see how the image changes depending on which module you are working on. If you are not doing a full 40-hour course, note which "windows" you will not be exploring. (Refer to the table on the next page.)

On the dividers, a light blue section means that a module's content has not been started, white means the work is in progress, and dark blue means a module is completed (or that the module is not included in the course).



Course Content

Note which modules are included in your course by placing a checkmark next to the appropriate modules.

Included in Course	Completed	Module	Module Title/Completed Product
☑	☐	1	Targeting Thinking in the Classroom ▪ "Habits of Learning Taxonomy" for the classroom
☑	☐	2	Designing Standards-Based Projects ▪ Targeted standards and objectives for your unit ▪ Targeted project characteristics
☑	☐	3	Creating Curriculum-Framing Questions to Support Thinking Skills ▪ Set of Curriculum-Framing Questions for your unit ▪ Cause-and-effect map of thinking in the classroom
☑	☐	4	Planning Student-Centered Assessment (2 hours) ▪ Assessment Plan and timeline
☐	☐	5	Using the Visual Ranking Tool to Target Thinking Skills (2 hours) ▪ *Visual Ranking* project ideas
☐	☐	6	Considering the Visual Ranking Tool for Your Unit ▪ Project description and prompt set up online ▪ A practice ranked list for your unit
☐	☐	7	Using the Seeing Reason Tool to Target Thinking Skills ▪ Project description and research question set up online
☐	☐	8	Considering the Seeing Reason Tool for Your Unit ▪ A practice causal map for your unit
☐	☐	9	Using the Showing Evidence Tool to Target Thinking Skills ▪ Project description and prompt set up online
☐	☐	10	Considering the Showing Evidence Tool for Your Unit ▪ A practice *Showing Evidence* case for your unit
☑	☐	11	Completing Your Unit ▪ Unit Plan implementation and procedures ▪ Assessment Plan and assessment(s)

Login Information

This page is provided for you to write down the login information you will be using during this course. This may make referencing login information easier as you proceed through the course modules and use the thinking tools with your students.

Note: Alternatively, you may want to save your login information electronically. A "Login Information" form is available in the *Unit Development* folder on the Curriculum Resource CD.

Teacher Login Information

Teaching Tool Login Information for Course Use

Note: This information will be provided by your facilitator for Modules 1–4.

URL: www.intel.com/education/tools

Teacher ID: _____

Team ID: _____

Password: _____

Teaching Tool Login Information for Your Own Classroom

Login ID/Teacher ID: _____

Password: _____

Wiki Site (Optional)

Course Wiki URL: _____

Login ID: _____

Password: _____

Tagging/Bookmarking Site (Optional)

URL: _____

Login ID: _____

Password: _____

Student Sample Projects Login Information

Note: The Teacher ID is the same for all student sample projects (listed on the previous page under Teaching Tool Login Information for Your Own Classroom)

Student Sample Project Using the *Visual Ranking Tool*

Teacher ID: _____

Team 1 ID: _____

Password: _____

Teacher ID: _____

Password: _____

Student Sample Project Using the *Seeing Reason Tool*

Teacher ID: _____

Team ID: _____

Password: _____

Student Sample Project Using the *Showing Evidence Tool*

Teacher ID: _____

Team ID: _____

Password: _____

Reviewing Team ID: _____

Password: _____

Master Teacher Login Information (for facilitator use only)

Teaching Tool Login Information for Your Participant Teacher Course (Optional)

Note: If you want to keep your classroom and course projects separate, you will need a second account to set up and access the thinking tool projects for your course.

Login ID/Teacher ID: _____

Password: _____

Extranet Login Information

URL: www.intel.com/education/teach/in-service.htm

Username: _____

Password: _____

Class ID (needed for participants to evaluate course): _____

Intel Teach Thinking with Technology Course v2.5 Overview Site

URL: http://teachonline.intel.com/courseupdates

Login ID: _____

Password: _____

Participant Teacher Projects Login Information (for facilitator use only)

Note: The Teacher ID is the same for all projects (listed on the previous page under Teaching Tool Login Information for Your Participant Teacher Course). You will create a set of Team IDs; note in the area below how you will assign the Team IDs (example: team01–team10). Use the same password as the Team ID (example: team01 would have the password of team01).

Course project setup page for the following projects:
www.intel.com/education/setupthinking

"Thinking" Project Using the *Seeing Reason Tool*

Teacher ID: _____

Team IDs: _____

Password: _____

"Ranking Questions" Project Using the *Visual Ranking Tool*

Note: Assign the same teams that you set up for Deeper Thinking to this project.

Teacher ID: _____

Team IDs: _____

Password: _____

"Ranking Flowers" Project Using the *Visual Ranking Tool*

Note: Teachers rank their lists as if they were a mother, florist, or student, so create Team IDs that name the perspectives. Create enough teams for two teachers per team. Note in the area below how you will assign the Team IDs (example: mother1, mother2, florist1, florist2, student1, student2, and so on). Create as many teams as needed. Use the same password as the Team ID.

Teacher ID: _____

Team IDs: _____

Password: _____

"Assessment Methods" Project Using the *Showing Evidence Tool*

Note: Assign the same teams that you set up for the "Thinking" project to this project.

Teacher ID: _____

Team IDs: _____

Password: _____

Table of Contents

Module 1: Targeting Thinking in the Classroom

Module 2: Designing Standards-Based Projects

Module 3: Creating Curriculum-Framing Questions to Support Thinking Skills

Module 4: Planning Student-Centered Assessment

Module 5: Using the Visual Ranking Tool to Target Thinking Skills

Module 6: Considering the Visual Ranking Tool for Your Unit

Module 7: Using the Seeing Reason Tool to Target Thinking Skills

Module 8: Considering the Seeing Reason Tool for Your Unit

Module 9: Using the Showing Evidence Tool to Target Thinking Skills

Module 10: Considering the Showing Evidence Tool for Your Unit

Module 11: Completing Your Unit

Appendix

Master Teacher Appendix

Icon Definitions

In this curriculum manual, icons help to guide you throughout the activities:

- Save your work
- View resources on the Course CD-ROM
- View resources on the Web
- Note helpful hint, idea, or warning
- Discuss or share with your colleagues
- View the Intel® Education *Help Guide* for technical instructions

Curriculum Resource CD

The Curriculum Resource CD is an integral part of the curriculum and is used throughout the unit creation process. Files can be accessed through the CD Index or directly through its folder structure. Directions for use are available electronically on the Curriculum Resource CD.

ISTE Alignment

The International Society for Technology in Education (ISTE) completed its initial review of the Thinking with Technology Course on October 20, 2005, and has determined that it clearly supports implementation of the ISTE National Educational Technology Standards (NETS) for Teachers in specific, carefully reviewed and documented ways and substantially prepares participants in the following manner:

NETS•T Alignment

- Meets: I.A., II.A., II.B., II.D., II.E., III.A., III.C.
- Supports significant growth for: II.C., III.B., III.D., IV.A., IV.C., V.B., V.C., V.D.