# Intel® Teach Thinking with Technology Course

The **Intel® Teach Thinking with Technology Course** builds on effective technology integration skills. Teachers use free online tools to support the development and assessment of their students' higher-order thinking skills.

## Goals

Through *Thinking with Technology*, teachers learn instructional strategies for addressing and assessing thinking skills, using technology to support deeper understanding of core content. The goal is for teachers to 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.

"*Thinking with Technology* has brought teachers together. There is renewed excitement in teaching. They are in the halls and classrooms helping each other with assignments, sharing ideas, and searching for additional activities that use technology. I am seeing more creativity and partnering..." - Dr. Gwen Roy, Intel® Teach Master Teacher, King & Queen Public Schools, Virginia

## Research findings

Evaluation from U.S. participants includes:

- A large majority of MTs and PTs reported that they felt they were well prepared or very well prepared to "engage students in critical thinking about complex issues".
- Most MTs and PTs reported that their trainer was "very successful" at helping them understand the online thinking tools and their workspaces.
- Most participants believed their students had adequate computer or Internet skills to navigate and manage the tools, and only 3% reported that their students did not find the tools easy to use. (86.9).

View independent evaluation reports >

## Course Format

**For:** K-12 teachers of all subjects

### Intel® Teach Thinking with Technology Course

24 - 40 hours face-to-face with 20 hours of homework.

### Intel® Education Thinking Tools

This modular course provides hands-on experiences with unique online thinking tools that engage students and help them to communicate their understanding of complex concepts. Each tool features an online workspace where students create and save visual representations of their thinking. Teachers play a critical role, facilitating learning activities and posing questions that take student thinking deeper.

See the *thinking tools* at **www.intel.com/teachers**

Visit www.intel.com/education/teach/us to learn more about the Intel Teach Program.

# Intel® Teach Thinking with Technology Course Curriculum Overview

The Intel® Teach *Thinking with Technology Course* is 24 to 40 hours of hands-on, face-to-face professional development. Focused on building effective technology integration skills, Thinking with Technology uses free online tools to sharpen students' higher-order thinking.

Master Teachers (MTs) receive 32 to 40 hours of instruction covering the three online thinking tools and two online resources that support productivity (*Assessing Projects* and Intel® Education *Help Guide*). Each MT determines which course option to deliver to their Participant Teachers (PTs), from 24 to 40 hours (7 to 11 modules).

Download the Syllabus ›
Courses must follow the established Delivery Guidelines ›

## Modules

To see an overview of the module activities, click on the module number below.

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|---|
| **Module 1 ›** Targeting Thinking in the Classroom (4 hours) |
| **Module 2 ›** Designing Standards-Based Projects (4 hours) |
| **Module 3 ›** Creating Curriculum-Framing Questions to Support Thinking Skills (4 hours) |
| **Module 4 ›** Planning Student-Centered Assessment (2 hours) |
| **Module 5 ›** Using the Visual Ranking Tool to Target Thinking Skills (2 hours) |
| **Module 6 ›** Considering the Visual Ranking Tool For Your Unit (4 hours) |
| **Module 7 ›** Using the Seeing Reason Tool to Target Thinking Skills (4 hours) |
| **Module 8 ›** Considering the Seeing Reason Tool for Your Unit (4 hours) |
| **Module 9 ›** Using the Showing Evidence Tool to Target Thinking Skills (4 hours) |
| **Module 10 ›** Considering the Showing Evidence Tool for Your Unit (4 hours) |
| **Module 11 ›** Completing Your Unit (4 hours) |

## Agenda Options

MT agenda includes three tools

PT agenda is flexible (one, two, or three tools)

### Thinking with Technology Course for Master Teachers

**Three Tools:**
Visual Ranking, Seeing Reason, and Showing Evidence
(Modules 1-11; 32 or 40 hours)

### Thinking with Technology Course for Participant Teachers

**One Tool**
- *Visual Ranking* only
(Modules 1-6 and 11; 24 hours)
- *Seeing Reason* only
(Modules 1-4, 7-8, and 11; 26 hours)
- *Showing Evidence* only
(Modules 1-4, 9-10, and 11; 26 hours)

**Two Tools**
- *Visual Ranking* and *Seeing Reason*
(Modules 1-8 and 11;32 hours)
- Visual Ranking and Showing Evidence
(Modules 1-6, 9-10, and 11; 32 hours)
- Seeing Reason and Showing Evidence
(Modules 1-4, 7-10, and 11; 34 hours)

**Three Tools**
*Visual Ranking, Seeing Reason,* and *Showing Evidence*
(Modules 1-11; 40 hours)

# Intel® Teach Thinking with Technology - Course Modules

**Module 1 | Targeting Thinking in the Classroom (4 hours)**
Technology best supports and enhances learning when it is used to engage students in higher-order thinking. Teachers review different models of thinking in order to apply key ideas in their classrooms, and they look at how different thinking skills are employed in various classroom scenarios. They also reflect on what affects the way we think-from different perspectives.

- Activity 1 - Introducing Yourself
- Activity 2 - Introducing the Thinking Tools
- Activity 3 - Applying Models of Thinking
- Activity 5 - Creating Your Own "Habits of Learning Taxonomy"
- Activity 6 - Reviewing the Unit Plan Template
- Activity 7 - Supporting Thinking
- Extension Activity - Thinking in the Classroom

**Module 2 | Designing Standards-Based Projects (4 hours)**
Teachers explore how projects that support authentic learning require planning. They identify the standards and objectives that target higher-order thinking skills supported by the thinking tools. They set up a Teacher Workspace for the Intel® Education online teaching tools.

- Activity 1 - Identifying Standards and Learning Objectives
- Activity 2 - Exploring Project Design
- Activity 3 - Considering a Project Idea for Your Unit
- Activity 4 - Sharing Project Ideas for Your Unit
- Activity 5 - Supporting Thinking
- Extension Activity - Harnessing the Power of Project-Based Learning

**Module 3 | Creating Curriculum-Framing Questions to Support Thinking Skills (4 hours)**
Curriculum-Framing Questions help students focus on meaningful work during projects. They provide an authentic and real-world context for connecting learning activities and incorporating higher-order thinking around big ideas. Teachers discuss the general types of questions used in instruction, practice with and create Curriculum-Framing Questions for their own classrooms, and reflect on how these questions can stimulate thinking.

- Activity 1 - Ranking Questions
- Activity 2 - Asking Questions in the Classroom
- Activity 3 - Developing Curriculum-Framing Questions
- Activity 4 - Supporting Higher-Order Thinking Skills with Curriculum-Framing Questions
- Activity 5 - Writing Your Own Curriculum-Framing Questions
- Activity 6 - Sharing Your Curriculum-Framing Questions
- Activity 7 - Supporting Thinking
- Extension Activity - Focusing on Essential Questions

**Module 4 | Planning Student-Centered Assessment (2 hours)**
Assessment plays an important role before, during, and after a project. Teachers examine a variety of assessment methods and scenarios, and use the Assessing Projects application to help them analyze which assessment methods may be appropriate for their classroom. Teachers use the results to create a draft Assessment Plan for their unit.

- Activity 1 - Exploring an Assessment Plan
- Activity 2 - Using the Showing Evidence Tool to Analyze Assessment Plan Ideas
- Activity 3 - Drafting an Outline for Your Unit's Assessment Plan
- Extension Activity - Browsing Assessments

**Module 5 | Using the Visual Ranking Tool to Target Thinking Skills (2 hours)**
Teachers explore the strengths of the Visual Ranking Tool, discuss and view project ideas, and begin thinking about how Visual Ranking can be integrated into their classroom projects and unit plans.

- Activity 1 - Looking at Visual Ranking in Action
- Activity 2 - Viewing Project Ideas
- Activity 3 - Thinking About Your Unit
- Extension Activity - Understanding Best Practices with Visual Ranking

**Module 6 | Considering the Visual Ranking Tool for Your Unit (4 hours)**
Teachers explore uses of the Visual Ranking Tool and brainstorm ways to integrate Visual Ranking in their own classroom projects. They try out ideas by creating a practice list to rank and then obtain feedback from others.

- Activity 1 - Clarifying Project Ideas for Using Visual Ranking
- Activity 2 - Planning Your Project
- Activity 3 - Setting Up a Visual Ranking Project
- Activity 4 - Trying Out Your Visual Ranking Idea
- Activity 5 - Revisiting Your Unit Plan
- Activity 6 - Sharing Your Results
- Extension Activity - Finalizing Your Visual Ranking Project

# Intel® Teach Thinking with Technology - Course Modules

**Module 7 | Using the Seeing Reason Tool to Target Thinking Skills (4 hours)**
Teachers learn more about causal mapping and the communication, thinking, and collaboration that are associated with that process; discuss the benefits of the Seeing Reason Tool; discuss and view project ideas; and brainstorm ways to integrate Seeing Reason into their own classroom projects.

- Activity 1 - Looking at Seeing Reason in Action
- Activity 2 - Digging Deeper into Cause and Effect
- Activity 3 - Viewing Project Ideas
- Activity 4 - Clarifying Project Ideas for Using Seeing Reason
- Activity 5 - Sharing Your Results
- Activity 6 - Planning Your Project
- Extension Activity - Understanding Best Practices with Seeing Reason

**Module 8 | Considering the Seeing Reason Tool for Your Unit (4 hours)**
Teachers try out their project ideas by creating a practice Seeing Reason causal map, discuss and practice effective questioning techniques, provide and receive feedback on project ideas, and use tips on implementation and assessment to revise their project ideas.

- Activity 1 - Trying Out Your Seeing Reason Idea
- Activity 2 - Sharing Causal Maps and Practicing Effective Questioning
- Activity 3 - Revising Your Project
- Activity 4 - Revisiting Your Unit Plan
- Activity 5 - Sharing Your Results
- Extension Activity - Finalizing Your Seeing Reason Project

**Module 9 | Using the Showing Evidence Tool to Target Thinking Skills (4 hours)**
Teachers learn about argumentation and the communication, thinking, and collaboration that are associated with that process; discuss the benefits of the Showing Evidence Tool; discuss and view project ideas; and brainstorm ways to integrate Showing Evidence into their own classroom projects.

- Activity 1 - Looking at Showing Evidence in Action
- Activity 2 - Digging Deeper into Argumentation
- Activity 3 - Viewing Project Ideas
- Activity 4 - Clarifying Project Ideas for Using Showing Evidence
- Activity 5 - Sharing Your Results
- Activity 6 - Planning Your Project
- Extension Activity - Understanding Best Practices with Showing Evidence

**Module 10 | Considering the Showing Evidence Tool for Your Unit (4 hours)**
Teachers try out their project ideas by creating a practice Showing Evidence case, discuss and practice effective questioning techniques, provide and receive feedback on project ideas, and use tips on implementation and assessment to revise their project plans.

- Activity 1 - Creating a Practice Case
- Activity 2 - Reviewing Student Work
- Activity 3 - Sharing Your Practice Case
- Activity 4 - Revising Your Project
- Activity 5 - Revisiting Your Unit Plan
- Activity 6 - Sharing Your Results
- Extension Activity - Finalizing Your Showing Evidence Project

**Module 11 | Completing Your Unit (4 hours)**
Teachers will complete their plan to effectively use one or more of the online thinking tools, review various types and formats of assessments, finalize their unit's assessment plan, create one or more assessments for their unit using the Assessing Projects application, and showcase their unit to colleagues.

- Activity 1 - Supporting Your Assessment Plan
- Activity 2 - Creating an Assessment
- Activity 3 - Finalizing Your Assessment Plan
- Activity 4 - Reflecting on Your Unit
- Activity 5 - Completing Your Unit Plan
- Activity 6 - Showcasing Your Unit
- Activity 7 - Reflecting on the Course
- Extension Activity - Enhancing Assessment in Your Unit

# Intel® Teach Thinking with Technology Course Delivery Guidelines

The Intel® Teach Thinking with Technology Course was developed in a modular format to allow for a flexible delivery schedule. In order to maintain high quality, the following delivery guidelines and scheduling options have been established:

**Course scheduling**
Master Teachers (MTs) should allow a week after completing their MT training before delivering the course to Participant Teachers (PTs). MTs schedule courses for PTs and order materials online; ordering materials one month in advance of the start date is optimal.

**Delivery guidelines: Thinking with Technology for Master Teachers**
The course for MTs is either 32 or 40 hours, selected by the Intel Teach Affiliate. MTs receive instruction on all 11 modules. After successful completion of Thinking with Technology, MTs are certified to deliver the course to PTs in a modular format.

**Delivery guidelines: for Thinking with Technology for Participant Teachers**
**MTs should:**

- Complete delivery of their course for PTs no later than 12 months after they complete their course for Master Teachers.
- Deliver the complete course within four months of the starting date.
- Conduct a course with a minimum of 10 Participant Teachers.
- Choose a course agenda to fit their Participant Teachers' needs. Course content can be configured to feature one, any two, or all three thinking tools.
- Complete the modules in order.
- Choose and follow an appropriate schedule, as described below.

**Scheduling options for PT courses**
Agendas and presentations are available for the Master Teacher to support a variety of scheduling options.
*Preferred scheduling options include:*

- ½ to 1 module per day (2-4 hours). Examples:
  - 1 module a day (Mon.-Fri.) for 2 weeks;
  - 1 module a week (2 hours on Tuesday, 2 hours on Thursday) for 10 weeks
- Time between sessions to allow "thinking," reflection, and processing time.

Example:

- 8-hour session on Saturdays for five weeks

**Minimum schedule for a three-tool course (40 hours):**

- 7 consecutive days can be done, but is not recommended
- 2 modules per day is OK only if days off are scheduled in between sessions (no 5-consecutive day training)

**www.intel.com/teachers | www.intel.com/education/teach/us**