

**Intel Teach Elements:  
Project-Based Approaches**

# Action Plan

**Instructions:** Ctrl-click (or click using Microsoft Word 2007\* or above, or Command-click on the Mac\*) any of the activity names in the Table of Contents to go directly to that particular section. Type your personalized Action Plan details in the sections indicated.

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## Module 1: Projects Overview

### Lesson 1: Project Basics

#### Activity 1: Your Knowledge of Project-Based Learning

**Estimated Time:** 10 minutes

1. Complete the first two columns of your own Know-Wonder-Learn-How chart.

- What do you already **know** about project-based learning?
- What do you **wonder** about project-based learning?

What I <b>Know</b>	What I <b>Wonder</b>	What I <b>Learned</b>	<b>How</b> I Learned

For more information on Project-Based learning go to <http://educate.intel.com/en/ProjectDesign> and view sections on:

- Project Design
- Thinking Skills
- Instructional Strategies

You may want to bookmark this site, or add it to your Internet favorites for future reference as you work through your Action Plan.

#### Activity 3: Project-Based vs. Conventional Instruction

**Estimated Time:** 15 minutes

Setting goals in this course will help you apply what you learn in your classroom. Goals you set now will be revisited later in the module and course.

Even if you do not teach with projects, your teaching may incorporate some project-based approaches. Think about project-based approaches you may currently use and also how you incorporate technology in your classroom

Based on your understanding of project-based learning so far, what goals would you like to set for yourself during this course/month/school year (choose one)? Write your goals. Below are some examples:

- Try some project-based learning strategies
- Make my classroom more student-centered
- Incorporate group work
- Do at least one project this year

- Do more than one project this year
- Improve a particular project
- Integrate technology in classroom learning

My project-based learning goals:

What challenges do you face or expect to face when doing project-based learning?  
Use the following chart to record your challenges and possible solutions for  
overcoming the challenges. You will revisit this chart.

Challenges	Solutions

## Module 1: Projects Overview

### Lesson 2: Project-Based Learning Benefits

#### Activity 1: Benefits Based on Research (Optional)

**Estimated Time:** 15 minutes

Identify particular students in your class and consider how you think they might benefit from project work, or how project work might pose a challenge for them.



#### Activity 4: Self-Assessment (Optional)

**Estimated Time:** 10 minutes

Revisit and add to your [goals](#) and [challenges](#) established in *Module 1, Lesson 1, Activity 3*. Record them there.

- Have you established more project-based learning goals?
- Do you expect to face more challenges?
- Have you come up with solutions to some of your challenges?

## Module 1: Projects Overview

### Lesson 3: Project Characteristics

#### Activity 2: Roles (Optional)

**Estimated Time:** 15 minutes

Project-based learning involves a change of classroom roles for the teacher, students, and community members. Consider how roles could change in your classroom for you, students, parents, and community members. Record your ideas below:

#### Activity 5: Project Improvement

**Estimated Time:** 20 minutes

A project characteristics checklist is useful for planning and implementing a project. Review the checklist located in this activity. Then, look at a particular project, unit, or lesson that you teach. Use the checklist to assess which characteristics are included in the project, unit, or lesson. How could you improve the project, unit, or lesson to include more characteristics?

## Module 1: Projects Overview

### Lesson 4: Module Review

#### Activity 1: Module Summary

**Estimated Time:** 15 minutes

Revisit the Action Plan work you started at the beginning of the module.

1. Look at your [K-W-L-H chart](#) in *Module 1, Lesson 1, Activity 1*. Review your chart. What can you add to the Learned and the How columns? What did you learn about project-based learning and how did you learn it? Add to the Know and Wonder columns, if desired.
2. Revisit the [goals](#) you established at the beginning of the module in *Module 1, Lesson 1, Activity 3* for project-based learning. How have you worked towards these goals? Have you made progress? Change or add to your goals, if desired.
3. Review the [challenges](#) you faced or expected to face at the beginning of the module in *Module 1, Lesson 1, Activity 3*. Can you add any suggestions for overcoming the challenges in the Solutions column? Do you have additional challenges to add?

## Module 2: Project Design

### Lesson 1: Project Planning

#### Activity 2: Project Ideas from Standards

**Estimated Time:** 20 minutes

In this module, focus on a single project as you complete each Your Turn activity since the planning steps build on each other.

The first step in the project design process is to review your standards.

1. Search your curriculum standards.
2. Identify some project ideas that might align with specific standards, like Abe and Maria have done.
3. Note your ideas and their associated standards below.

**Note:** See sample [Elementary](#), [Middle School](#), and [High School](#) samples in the Appendix.

Standards	Project Ideas

#### Activity 3: Project Ideas from the Community

**Estimated Time:** 15 minutes

Develop a project idea that both strongly targets your standards and connects to the real world.

1. Brainstorm a project scenario like Maria and Abe did.
2. Write the project description below.

**Note:** See sample [Elementary](#), [Middle School](#), and [High School](#) samples in the Appendix.

For additional examples of technology-rich, project-based unit plans, go to:  
<http://educate.intel.com/en/ProjectDesign/UnitPlanIndex/GradeIndex>

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## Module 2: Project Design

### Lesson 2: Learning Goals

#### Activity 1: 21st Century Skills

**Estimated Time:** 10 minutes

You will learn strategies for teaching 21st century skills in Modules 3 and 5. To prepare for those activities,

1. Review the list and description of 21st century skills located in this activity.
2. Identify the top four 21st century skills that you want to target in your classroom. If you are creating a single project during this course, identify the top four 21st century skills for that specific project.
3. Note your ideas below.

#### Activity 2: Learning Objectives

**Estimated Time:** 10 minutes

1. Review the 21st century skills and the Standards and Objectives Rubric referenced in this activity. Identify the standards you are targeting for your project:

2. Brainstorm observable, specific, standards-based, and 21st-century-skills-focused learning objectives for your project. Note your ideas below.

## Module 2: Project Design

### Lesson 3: Questions that Frame Learning

#### Activity 2: Curriculum-Framing Questions in Action

**Estimated Time:** 25 minutes

1. View additional samples of Curriculum-framing questions located in this activity. Consider any questions or ideas you could use in your classroom. Use the Curriculum-framing questions worksheet located in this activity to help you create Curriculum-framing questions for your own project. Write your draft Curriculum-framing questions below.

Essential Question	
Unit Question(s)	
Content Questions	

2. Use the CFQ Rubric located in this activity to assess your questions. Revise your Curriculum-framing questions above, if needed.

**Note:** For additional information on Curriculum Framing Questions go to:  
<http://educate.intel.com/en/ProjectDesign/Design/CurriculumQuestions>

## Module 2: Project Design

### Lesson 5: Activity Design

#### Activity 1: Activity Planning

**Estimated Time:** 10 minutes (25 minutes if completing optional activity.)

1. Keeping your targeted 21st century skills in mind, brainstorm some types of student-centered activities you may want to incorporate into your classroom regardless of project. Consider ways you could integrate technology. Note your ideas below.

2. **Optional:** If you are designing a project, keep your objectives in mind and brainstorm a draft sequence of activities below.

## Module 2: Project Design

### Lesson 6: Module Review

#### Activity 1: Module Summary

**Estimated Time:** 10 minutes

Reflect on your learning in this module.

## Module 3: Assessment

### Lesson 1: Assessment Strategies for Projects

#### Activity 2: Purposes of Assessment

**Estimated Time:** 15 minutes (30 minutes if completing the optional activity)

1. Save at least one assessment instrument for each of the following purposes to your Course Folder. Note which assessment instrument you select for each purpose and how you might use it in a project.

#### Assessment Purposes

- Gauging student needs

- Encouraging strategic learning

- Demonstrating understanding

2. **Optional:** Open at least one of the saved assessment instruments and modify or create an assessment to meet your classroom needs. Note how and when you might use the assessment instrument.

## Module 3: Assessment

### Lesson 2: Assessment of 21st Century Skills

#### Activity 3: Assessment of Thinking

**Estimated Time:** 15 minutes (30 minutes if completing the optional activity)

1. Explore the assessments shown in the table in this activity and save at least one assessment for a learning process and one assessment for a thinking skill to your Course Folder. Note how and when you would use each assessment.

Learning process assessment:

How I would use the assessment:

Thinking skill assessment:

How I would use the assessment:

2. **Optional:** Modify or create at least one assessment on a learning process or a thinking skill to meet your classroom needs. Note how and when you would use the assessment.

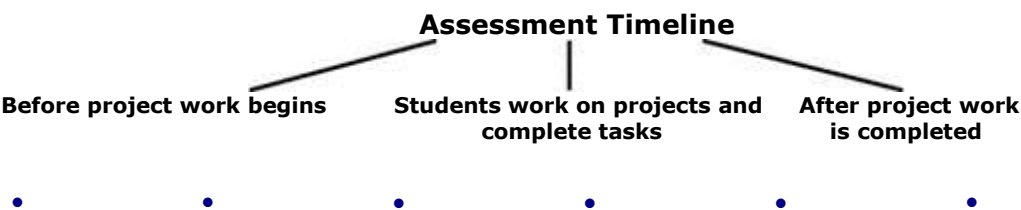
# Module 3: Assessment

## Lesson 3: Assessment Planning

### Activity 2: Assessment Plans

Estimated Time: 30 minutes

1. Create an assessment timeline for your project.



2. Fill in the table below to complete the assessment plan for your project.

Assessment	Purpose and Process of Assessment

## Module 3: Assessment

### Lesson 4: Grading Projects

#### Activity 1: Rubrics and Scoring Guides

**Estimated Time:** 15 minutes (30 minutes if completing the optional activity)

1. Explore the rubrics shown in the table in this activity and save at least one assessment for a product and another assessment for a performance. Note how and when you might use the assessments.

Product assessment:

How I would use the assessment:

Performance assessment:

How I would use the assessment:

2. **Optional:** Convert a rubric to a scoring guide and note how and when you would use it.

Scoring guide:

How I would use the assessment:



### **Activity 2: Group Grades (Optional)**

**Estimated Time:** 10 minutes

Outline a group grading strategy for your project:

### **Activity 3: Process Grades (Optional)**

**Estimated Time:** 10 minutes

Think about the various instruments and methods you might use to assess collaboration, self-direction, and thinking skills.

Note how you might include these 21st century skills in assigning grades to your students.

## Module 3: Assessment

### Lesson 5: Module Review

#### Activity 1: Module Summary

**Estimated Time:** 10 minutes

Reflect on your learning in this module.

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## Module 4: Project Planning

### Lesson 1: Project Organization

#### Activity 1: Project Challenges (Optional)

**Estimated Time:** 5 minutes

Review the [K-W-L-H chart](#) and add any questions that you have related to project planning and management.

#### Activity 2: Project Timelines

**Estimated Time:** 10 minutes

Now that you have reviewed sample project timelines, use any format you wish to outline a rough draft for a unit you plan to teach. Note the name below and save it in your Course Folder.

Project timeline file name:

## Module 4: Project Planning

### Lesson 2: Management Strategies

#### Activity 1: Management Scenarios (Optional)

**Estimated Time:** 15 minutes

After you read the two classroom management scenarios, think about how the teachers' situations relate to your classroom experience. Note ideas you can use in your classroom.

#### Activity 3: Strategies for Communicating about the Project

**Estimated Time:** 10 minutes

After reviewing the sample wrap-up scenarios, think about a wrap-up experience you want to try for your project. Record your ideas.

#### Activity 4: Strategies for Managing Timing and Transitions (Optional)

**Estimated Time:** 15 minutes

When planning for managing timing and transitions, consider:

- Project schedule
- Student attendance

Record ideas about any strategies you want to use in your classroom.

#### Activity 5: Strategies for Managing Collaboration

**Estimated Time:** 15 minutes

After following the student/teacher conference, think about the following questions:

- How do you think the teacher conference went?
- Did it give you ideas for your conferences with students?

Record your ideas about any strategies you want to use in your classroom.

#### Activity 6: Strategies for Managing Resources

**Estimated Time:** 15 minutes

When planning for managing resources, consider:

- Technology management
- Student file management
- Materials management
- External resources

Record ideas about any strategies you want to use in your classroom.

## Module 4: Project Planning

### Lesson 3: Project Tasks and Activities

#### Activity 1: Implementation Plans

**Estimated Time:** 15 minutes (30 minutes if completing optional activity)

1. After reviewing the sample implementation plans in different formats, consider a format that would work for you. Use the implementation plan template to help guide you in developing your own implementation plan.
2. Plan specific strategies for at least one of the management categories and record below:
  - Communicating about the project
  - Timing and transitions
  - Fostering collaboration
  - Managing resources

3. **Optional:** Draft an implementation plan, using any format that works for a project you plan to teach. Note the name below and save it in your Course Folder.

Implementation plan file name:

## Module 4: Project Planning

### Lesson 4: Module Review

#### Activity 1: Module Reflection

**Estimated Time:** 10 minutes

Reflect on your learning in this module. Note any of the project management ideas that you would like to put more time and attention into to improve your project-based approaches in your classroom.

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## Module 5: Guiding Learning

### Lesson 1: Questioning in Classrooms

#### Activity 1: Questions for Different Purposes

**Estimated Time:** 15 minutes

In this activity, you learned about six purposes for using questions in the classroom. Review the purposes and think about how you typically use questions in your classroom. Choose purposes that interest you and write additional questions for your students.

Motivate and engage students' curiosity and interests

- How would you cook a meal without electricity or fire?
- What would you give up if you had to cut down on electricity use at your house?

Determine student knowledge and understanding

- What are the characteristics of a good insulator?
- What are three types of heat transfer?
- Since we have learned that . . . , now what do you think . . . ?
- What do you mean by that?

Prompt observation and description of phenomena

- What do you notice about...?
- Can you see a difference (or similarity) between...?

Encourage reflection and metacognition

- What strategies did you use to solve this problem?
- What did you learn?
- What would you have done differently?

Promote critical thinking and problem-solving

- What kind of information would you need to solve that problem? Where would you find it?
- What is the evidence for your opinion?



- Can you look at the problem from a different perspective?
- Which option would save more energy and why?
- Using your data, which features are best for your design and why?

Encourage creativity, imagining, and hypothesizing

- Are there some other ways you might . . . ?
- What if everyone . . . ?
- Can you look at the problem from a different perspective?

## Module 5: Guiding Learning

### Lesson 2: Collaboration and Self-Direction

#### Activity 1: Teaching Collaboration and Self-Direction

**Estimated Time:** 20 minutes

1. Open Collaboration and Self-Direction Skills from your Course Folder.
2. Identify one or two subskills of collaboration or self-direction that your students need to work on for your project. Describe when you would introduce these subskills with a mini-lesson.

#### **Create a Mini-Lesson**

Create a mini-lesson on a collaboration or self-direction subskill for your project. Use the four steps and questions below to create a mini-lesson:

- a. Model the subskill
- b. Discuss when and how to use and modify the subskill
- c. Practice the subskill
- d. Apply the subskill

1. How will you model the subskill?

2. What content related to the project will you use?

3. How will you demonstrate how to use the subskill with that content?

4. What discussion questions will prompt thinking about how to use and modify the subskill?

## Module 5: Guiding Learning

### Lesson 3: Information Literacy

#### Activity 2: Teaching Information Literacy (Optional)

**Estimated Time:** 20 minutes

1. Review your standards for those standards that address information literacy subskills. You may want to refer to Information Literacy Subskills saved in your Course Folder or downloaded from the Resource tab. Note any connections between the units you teach and relevant subskills.

2. Identify the subskills that your students have and those that they need to work on during your project. Note when and how you might teach the skills they need.

#### Information Literacy Subskills My Students Have:

Subskills My Students Need for This Project	Stage of Project

- How will students practice the subskill and get feedback?

- How will you ask students to use the subskill while they work on their projects?

## Module 5: Guiding Learning

### Lesson 4: Student Reflection

#### Activity 2: Reflection Planning

**Estimated Time:** 15 minutes (30 minutes if completing optional activities)

1. Save Reflection Ideas to your Course Folder. Browse through ideas for encouraging effective student reflection and goal setting. Record any reflection ideas you might use and note how and when you would incorporate them into your teaching.

2. Review and modify your [Assessment Timeline](#) from *Module 3, Lesson 3, Activity 2*, if necessary, to include reflection activities.
3. **Optional:** Design a reflection and goal-setting activity for the end of your project.

## Module 5: Guiding Learning

### Lesson 5: Module Review

#### Activity 1: Module Summary

**Estimated Time:** 10 minutes

Reflect on your learning from this Module.

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## Course Wrap-Up Summary

**Estimated Time:** 15 minutes

Revisit the Action Plan work you started at the beginning of the module.

1. Go to your [K-W-L-H chart](#) in *Module 1, Lesson 1, Activity 1*. Review your chart and add to the Learned and How columns.
2. Revisit the [goals](#) you established at the beginning of the course in *Module 1, Lesson 1, Activity 3* for project-based learning. How have you worked towards these goals? Have you achieved your goals? What new goals do you have for project-based approaches in your classroom?
3. Review the [challenges](#) you faced or expected to face at the beginning of the course in *Module 1, Lesson 1, Activity 3*. Add any ideas for overcoming these challenges in the Solutions column.

## Appendix

### Sample Project Ideas

#### Elementary

##### Module 2: Project Design

##### Lesson 1: Project Planning from the Beginning

##### Activity 2: Project Ideas from Standards

In this module, focus on a single project as you complete each Your Turn activity since the planning steps build on each other.

The first step in the project design process is to review your standards.

1. Search your curriculum standards.
2. Identify some project ideas that might align with specific standards, like Abe and Maria have done.
3. Note your ideas and their associated standards below.

Standards	Project Ideas
4th Grade Science 112.6.b.(6) Science concepts. The student knows that change can create recognizable patterns. The student is expected to: (A) identify patterns of change such as in weather, metamorphosis, and objects in the sky.	Students take on the role of weather reporters to present weather information, patterns, and warnings.
4th Grade Science 112.6.b.(8) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to: (A) identify characteristics that allow members within a species to survive and reproduce; (B) compare adaptive characteristics of various species; and (C) identify the kinds of species that lived in the past and compare them to existing species.	Students take on the role of biologists and create a blog to discuss and compare frog species with other classes and experts.
4th Grade Math 111.16.b.(4.2) Number, operation, and quantitative reasoning. The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to: (A) use concrete objects and pictorial models to generate equivalent fractions; (B) model fraction quantities greater than one using concrete objects and pictorial models; (C) compare and order fractions using concrete objects and pictorial models; and (D) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models.	Students create a cookbook with their own pictures that describes and depicts fractions used in cooking and serving, and use multiplication of fractions to change quantities served for each recipe.

**Module 2: Project Design**  
**Lesson 1: Project Planning from the Beginning**  
**Activity 3: Project Ideas from the Community**

Develop a project idea that both strongly targets your standards and connects to the real world.

1. Brainstorm a project scenario like Maria and Abe did.
2. Write the project description below.

Students take on the role of weather reporters to present weather information to lower grades. Students discuss and use images to indicate weather patterns, identify warning signs of weather change, wear appropriate clothes as a model, and identify how to be safe in a particular type of weather. Students give presentations to younger students and/or digitally videotape their presentations and include those videos on a blog where they also post about local weather patterns. The blog could also be used to partner with other schools around the country or world to discuss, track, and compare weather patterns.



## Middle School

### Module 2: Project Design

#### Lesson 1: Project Planning from the Beginning

#### Activity 2: Project Ideas from Standards

In this module, focus on a single project as you complete each Your Turn activity since the planning steps build on each other.

The first step in the project design process is to review your standards.

1. Search your curriculum standards.
2. Identify some project ideas that might align with specific standards, like Abe and Maria have done.
3. Note your ideas and their associated standards below.

Standards	Project Ideas
<b>Grade 7 Language Arts</b> 2.1 Students write fictional or autobiographical narratives: a. Develop a standard plot line (having a beginning, conflict, rising action, climax, and denouement) and point of view. b. Develop complex major and minor characters and a definite setting. c. Use a range of appropriate strategies (e.g., dialogue; suspense; naming of specific narrative action, including movement, gestures, and expressions).	Students become authors and create stories/books that follow a standard plot line for the local upper elementary students.
<b>Grade 7 History/Social Science</b> 7.1 Students analyze the causes and effects of the vast expansion and ultimate disintegration of the Roman Empire.	Students create a newspaper exposé on the expansion and expected disintegration of the Roman Empire as if written during the end of the Roman Empire.
<b>Grade 7 Science</b> 6.0 Physical principles underlie biological structures and functions. As a basis for understanding this concept: c. Students know light travels in straight lines if the medium it travels through does not change. d. Students know how simple lenses are used in a magnifying glass, the eye, a camera, a telescope, and a microscope. e. Students know that white light is a mixture of many wavelengths (colors) and that retinal cells react differently to different wavelengths. f. Students know light can be reflected, refracted, transmitted, and absorbed by matter.	Students research the workings of the eye and how sight is impaired when the lens and structure of the eye do not let light in as intended. Students create a pamphlet on vision problems and work with local ophthalmologists and optometrists to provide a vision screening for the public.

**Module 2: Project Design**  
**Lesson 1: Project Planning from the Beginning**  
**Activity 3: Project Ideas from the Community**

Develop a project idea that both strongly targets your standards and connects to the real world.

1. Brainstorm a project scenario like Maria and Abe did.
2. Write the project description below.

Students research and create experiments to understand the workings of the eye and how sight is impaired when the lens and structure of the eye do not let light in as intended, thereby causing farsightedness, nearsightedness, astigmatism, glaucoma, and so forth.

Students create a pamphlet for the public that describes and visually depicts how the eyes work, and shows what can happen when the structure of an eye or lens does not properly process incoming light.

Students work with local ophthalmologists and optometrists to provide student-created pamphlets and a basic vision screening to help the public understand the causes and symptoms of vision problems.

## High School

### Module 2: Project Design

#### Lesson 1: Project Planning from the Beginning

#### Activity 2: Project Ideas from Standards

In this module, focus on a single project as you complete each Your Turn activity since the planning steps build on each other.

The first step in the project design process is to review your standards.

1. Search your curriculum standards.
2. Identify some project ideas that might align with specific standards, like Abe and Maria have done.
3. Note your ideas and their associated standards below.

Standards	Project Ideas
<b>Grade 10 Language Arts</b> 10.8 Students analyze the causes and consequences of World War II.	Students act as reporters or authors who research the causes and consequences of WWII and create a product to share with the community for Veteran's Day or Memorial Day such as a story from the viewpoint of a fictional character, an Internet-based multimedia flowchart, newspaper articles from interviews, and so forth. Students use primary resources as well as interviews of local WWII veterans.
<b>Grades 9–12 Science</b> Dynamic Earth Processes 3. Plate tectonics operating over geologic time has changed the patterns of land, sea, and mountains on Earth's surface. As the basis for understanding this concept: b. Students know the principal structures that form at the three different kinds of plate boundaries. c. Students know how to explain the properties of rocks based on the physical and chemical conditions in which they formed, including plate tectonic processes. e. Students know there are two kinds of volcanoes: one kind with violent eruptions producing steep slopes and the other kind with voluminous lava flows producing gentle slopes.	Students create a book of geological formations of the local area to share with the local community, geological society, and schools.

**Grades 9–12 Geometry**

12.0 Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.

Students determine and diagram appropriate angles needed to win a game of pool, miniature golf, croquet, or other game that depends on angles for ball movement, put the theory into practice, and then modify their plans as needed.

**Module 2: Project Design**

**Lesson 1: Project Planning from the Beginning**

**Activity 3: Project Ideas from the Community**

Develop a project idea that both strongly targets your standards and connects to the real world.

1. Brainstorm a project scenario like Maria and Abe did.
2. Write the project description below.

Students research the formation of rocks and geological formations through Internet research, books, presentations by experts, and local field trips. Student teams are assigned different types of geological formations to discover in the local area. Using digital cameras and guidance from a mentor, students create chapters for a book on their particular geological formations to include:

- Pictures of geological formations in the local area
- Explanations of how the formations were formed
- Analysis of expected movement or future events
- Description of the impact on the community

Students will assemble the chapters into a single book on geological formations in the local area to sell to the community, geological society, libraries, and schools.