

## Class: Digital Imaging and Design II

Curriculum Area: Applied Technology and Engineering	Course Length: 1 Term
Course Title: Digital Imaging and Design II	Date last reviewed: May 21, 2015
Prerequisites: Digital Imaging and Design I	Board approval date: June 16, 2015

### Desired Results

#### Course Description and Purpose:

This course will build upon the foundations gained in Digital Imaging and Design I. Students, through a personalized learning approach, will gain in depth knowledge and skills in multiple areas of the imaging fields including digital photography, illustration and page layout. Student's skills in the creation and modification of raster and vector based graphics will be refined. Multiple output and publishing solutions will be explored. A fee is charged for materials used in projects.

<p><b>Enduring Understandings:</b> The student will understand that...</p> <ul style="list-style-type: none"><li>• There are a multitude of career opportunities that utilize digital imaging skills.</li><li>• Digital imaging allows for multiple processes and solutions to a problem.</li><li>• Digital imaging uses elements of art and principles of design within their compositions</li><li>• Digital image creation and publishing is a combination of input, image processing and output</li><li>• Digital images are vector or raster based and need specific software to create each</li><li>• Frequently, problems are too complex for a single person to solve. Teams are formed and duties shared. It is important to have a diversified team to help discover solutions that someone might miss.</li></ul>	<p><b>Essential Questions:</b></p> <ol style="list-style-type: none"><li>1. How can the composition of a photograph affect the impact on the audience?</li><li>2. How can light be manipulated to add drama and meaning to a photographic image?</li><li>3. Why is it critical for a photographer to adjust aperture and shutter speed to control light and add visual interest to an image?</li><li>4. How can story and emotion affect an image?</li><li>5. Why are vector based images used to drive a machine tool path?</li><li>6. What is the best software to leverage to modify, enhance and prepare a raster based image (photograph) for publication?</li><li>7. How can individuals create a quality design that has both artistic value and marketing merit that fulfills a need?</li><li>8. How can design principles affect the readability and marketability of graphically designed projects?</li></ol>
--	---

<ul style="list-style-type: none"> <li>● Knowing how to create, save, retrieve, and produce electronic work is essential in the work place.</li> <li>● Graphic design is a language used to organize forms in order to communicate a message.</li> <li>● Type can be one of the most powerful tools available for shaping the way an audience perceives written and electronic information. All digital designers need to have knowledge of typography since most products require type or lettering</li> <li>● Photographs reflect a point of view, and can mislead as well as reveal.</li> </ul>	<p>9. What are the most important steps that should be applied to an image for publication whether it is going to be printed or displayed on the web?</p>
--	---

**Assessment Evidence:**

<p>Performance assessment: Project based assessments will be used in all units to assess student mastery. In addition other performance assessments will include portfolios, performance tests and journals.</p>	<p>Other assessments:</p> <ul style="list-style-type: none"> <li>● oral presentations</li> <li>● journals</li> <li>● self &amp; peer assessment tools</li> <li>● (rubric/checklists rating scales)</li> <li>● demonstrations</li> <li>● paper-and-pencil tests</li> <li>● laboratory reports</li> <li>● portfolio analysis</li> </ul>
--	---

<p><b>UNITS</b></p>
<ol style="list-style-type: none"> <li>1. Review of image creation and editing software</li> <li>2. Advanced photography</li> <li>3. Graphic design for publication and presentation</li> <li>4. Advanced vector image creation and editing</li> <li>5. Advanced raster image creation and editing</li> <li>6. Video and animated digital graphics</li> <li>7. Output - reproduction and marketing</li> </ol>

## **Unit 1: Review of image creation and editing software**

1. Photography and image capture
2. Raster image processing - Photoshop
3. Vector image processing and creation - Illustrator
4. Communication model and process

### **Standards:**

#### **Wisconsin Standards for Technology and Engineering**

ICT1: Students will analyze, select and use information and communication technologies.

ICT1.g: Analyze and use various technologies to produce graphic communication products.

ICT1.d: Analyze the principles of effective printed, projected and multimedia communication in a variety of formats and contexts.

ICT1.c: Analyze graphic communications in an ever increasingly technological world.

ICT1.b: Describe how communication is an ever evolving process.

ICT1.a: Analyze how communication happens, the different forms of communication and how it affects society.

MNF1: Students will be able to select and use manufacturing technologies.

MNF1.a: Identify, select and safely use tools, machines, products and systems for specific tasks

MNF1.a.1.e: Discuss health safety in the workplace.

MNF1.a.2.e: Recognize tools, machines and materials along with their applications and failures.

MNF1.a.3.e: Recognize the characteristics of length, volume, weight, area and time.

MNF1.a.4.m: Discuss health and safety procedures in the workplace that keep workers safe.

MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement.

MNF.1.b.2.e: Learn basic methods of verbal, written and graphical communication as it relates to manufacturing.

MNF.1.b.4.m: Comprehend and engage in communication methods to convey ideas, concepts and requirements to other individuals and teams

#### **CCSS**

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-LITERACY.RST.11-12.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

CCSS.ELA-LITERACY.RST.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RST.11-12.9

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

**Learning Targets Addressed:**

I can...

- plan, design and produce a product containing aspects including input, image processing and output as they relate to a digital image.
- differentiate and apply the parts of the communication process/model to a design and create an image employing them.
- justify the correct application of various input devices (cameras, scanners, etc.) to capture an image.
- manipulate and process an image using industry standard image processing software.
- assess safety hazards in the workplace.

**Unit 2: Advanced Photography**

1. Composition Review
  - a. Rule of thirds
  - b. Framing
  - c. Simplicity
  - d. Leading Lines
  - e. Repetition
  - f. Symmetry (balance)
2. Single Lens Reflex Camera Operation
  - a. Aperture
  - b. Shutter
  - c. ISO
  - d. Focus
  - e. Lens Choice
3. Lighting
  - a. Studio and artificial light

- b. Extended Shutter
- c. Lighting for mood and emotion
- d. Ambient and available light
- 4. Photographic Retouching
  - a. Ethics
    - i. News
    - ii. Art
  - b. Digital Workflow
    - i. File management and backup
    - ii. Non-destructive editing
    - iii. Color correction
    - iv. Exposure correction
    - v. Retouching
    - vi. Special effects
    - vii. Saving for output

**Standards:**

**Wisconsin Standards for Technology and Engineering**

ICT1.c.1.e: Describe what the difference is between graphic communications and verbal communication.

ICT1.c.2.e: Discuss how graphic communications can be used to influence how you see the world.

ICT1.c.3.e: List ways messages can be communicated without talking to someone.

ICT1.c.4.m: Identify the parts of a graphic message.

ICT1.c.5.m: Prepare a graphic communication message.

ICT1.c.6.m: Examine how we send messages without speaking.

ICT1.c.7.h: Create a graphic message.

ICT1.c.8.h: Summarize how a message can be used to manipulate an audience.

ICT1.c.9.h: Generate an authentic graphic Communication example.

**CCSS**

CCSS.ELA-Literacy.SL.9-10.1

Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-LITERACY.RST.11-12.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

CCSS.ELA-LITERACY.RST.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RST.11-12.9

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

### **Learning Targets:**

I can...

- compose a quality photo by integrating at least six composition techniques
- effectively apply the three components of the exposure triangle to produce an image with a single lens reflex camera (ISO, shutter, aperture)
- manipulate light, available or artificial, to produce a quality photographic image
- ethically retouch a photograph using image editing software

## **Unit 3: Advanced Graphic Design**

1. Review
  - a. Language of graphic design
  - b. Color theory concepts and terminology
  - c. Color systems (RGB,CMYK,Pantone): applications
  - d. Two-dimensional imaging concepts of composition and aesthetics
2. Advanced Typography
  - a. Measurement
  - b. Special Effects
  - c. Leading and Kerning
  - d. Readability
  - e. Fonts & Typefaces
3. Layers and applications
  - a. Overlays
  - b. Textures
  - c. Advanced technique

### **Standards:**

#### **Wisconsin Standards for Technology and Engineering**

ICT1: Students will analyze, select and use information and communication technologies.

ICT1.g: Analyze and use various technologies to produce graphic communication products.

ICT1.d: Analyze the principles of effective printed, projected and multimedia communication in a variety of formats and contexts.

MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement.

MNF.1.b.4.m: Comprehend and engage in communication methods to convey ideas, concepts and requirements to other individuals and teams

ENG1.a.1.e: Design is a creative process.

ENG1.a.2.e: Everyone can design solutions to a problem.

ENG1.a.3.e: Discuss the design process is a purposeful method of planning practical solutions to problems.

ENG1.a.5.m: Design is a creative planning process that leads to useful products and systems.

ENG1.a.6.m: There is no perfect design.

ENG1.a.8.m: Requirements for a design are made up of criteria and constraints.

ENG1.a.11.h: Argue design processes vary slightly. However, key elements of any design process include: defining a problem, identifying criteria, generating solutions, creating a model or prototype, testing and evaluating, refining the design and communicating processes and results.

## **CCSS**

CCSS.ELA-Literacy.W.9-10.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

CCSS.ELA-Literacy.W.9-10.2d

Use precise language and domain-specific vocabulary to manage the complexity of a subject.

CCSS.ELA.Literacy. L.9-10.6

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-LITERACY.RST.11-12.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

CCSS.ELA-LITERACY.RST.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a

problem.

CCSS.ELA-LITERACY.RST.11-12.9

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

**Learning Targets:**

I can:

- create a poster promoting a cause entirely in type.
- apply color models and schemes to graphic design
- employ the design methods of unity, rhythm, proximity, balance, to a personally designed product.
- create a designed product that has artistic merit and worth.
- apply the communication model/process to my work.

**Unit 4: Advanced Vector Image Creation and Editing: ADOBE ILLUSTRATOR**

1. Software fundamentals: Adobe Illustrator (Base knowledge, covered in introductory class listed in RED below. Advanced skills in black)
2. Digital drawing/illustration, image creation
3. File management/encoding

**Wisconsin Standards for Technology and Engineering**

ICT1: Students will analyze, select and use information and communication technologies.

ICT1.g: Analyze and use various technologies to produce graphic communication products.

MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement.

MNF.1.b.4.m: Comprehend and engage in communication methods to convey ideas, concepts and requirements to other individuals and teams

MNF.1.b.6.h: Design and publish documents using advanced publishing software and graphic programs to defend and promote results.

ENG1.a.5.m: Design is a creative planning process that leads to useful products and systems.

ICT1.d: Analyze the principles of effective printed, projected and multimedia communication in a variety of formats and contexts.

**CCSS**

CCSS.ELA-Literacy.SL.9-10.4



Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-LITERACY.RST.11-12.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

CCSS.ELA-LITERACY.RST.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RST.11-12.9

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

### **Learning Targets:**

#### **Adobe Illustrator Tasks (Tied to Adobe Certification Exam)**

##### **I can navigate the Illustrator workspace in order to create images.**

###### Navigating the Workspace

- Customizing the workspace
- Using multiple artboards
- Utilizing rulers, grids, guides, and crop marks

##### **I can create elaborate and advanced level drawing using Adobe Illustrator**

###### Drawing

- Drawing basics
- Creating shapes
- Drawing pixel-aligned paths for web workflows
- Drawing with the Pencil tool
- Drawing with the Pen tool
- Editing paths
- Applying a gradient to a stroke
- Perspective drawing
- Tracing artwork with Live Trace
- Using Image Trace
- Working with symbols
- Working with symbolism tools and sets

##### **I can creatively use color and color schemes with Adobe Illustrator**

###### Working with Color

- Selecting color

- Using and creating swatches
- Adding colors from artwork to the Swatches panel
- Working with Color Groups
- Using the Kuler panel
- Adjusting color
- Working with Pantone Plus color libraries

### **I can create advanced images using the painting tools in Illustrator**

#### Painting

- Painting with fills and strokes
- Working with Live Paint groups
- Creating and using brushes
- Working with transparency and blending modes
- Creating and using gradients
- Creating and using meshes
- Creating and using patterns

### **I can create and manipulate type for graphic design in Adobe Illustrator**

#### Working with Type

- Creating type on a path
- Scaling and rotating type
- Working with fonts
- Formatting type
- Adjusting line and character spacing
- Formatting paragraphs
- Creating and applying character and paragraph styles

### **I can apply special effects to vector based images in Adobe Illustrator**

#### Creating Special Effects

- Creating and using appearance attributes
- Working with effects
- Creating and applying drop shadows, glows, and feathering
- Creating and applying graphic styles

### **I can animate an image for the web using Adobe Illustrator**

#### Working with Web Graphics

- Creating web graphics
- Utilizing slices and image maps
- Utilizing SVG
- Creating animations

### **I can prepare images for a variety of output methods using Illustrator**

#### Printing

- Setting up documents for printing
- Printing color separations
- Working with printer and bleed marks
- Printing gradients, meshes, and color blends
- Printing and saving transparent artwork
- Overprinting
- Trapping
- Using print presets

## Unit 5: Advanced Raster Image Creation and Editing: Adobe Photoshop

1. Software fundamentals: Adobe Photoshop (Base knowledge, covered in introductory class listed in RED below)
2. Image creation
3. Digital image capture fundamentals
  - a. scanning
4. File management/encoding
5. Image compositing/collage/montage

## Wisconsin Standards for Technology and Engineering

ICT1: Students will analyze, select and use information and communication technologies.  
ICT1.g: Analyze and use various technologies to produce graphic communication products.  
ICT1.d: Analyze the principles of effective printed, projected and multimedia communication in a variety of formats and contexts.  
MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement.  
MNF.1.b.4.m: Comprehend and engage in communication methods to convey ideas, concepts and requirements to other individuals and teams  
MNF1.f.2.e: Learn that manufactured products are designed.  
ENG1.a.5.m: Design is a creative planning process that leads to useful products and systems.

## CCSS

### **CCSS.ELA-Literacy.SL.11-12.4**

Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

### **CCSS.ELA-Literacy.SL.9-10.4**

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

### **CCSS.ELA-LITERACY.RST.11-12.4**

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

### **CCSS.ELA-LITERACY.RST.11-12.7**

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a

problem.

**CCSS.ELA-LITERACY.RST.11-12.9**

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

**Learning Targets:**

**Adobe Photoshop Tasks (Tied to Adobe CS6 Certification Exam)**

**I can use Adobe Bridge to as a file management tool within and across the Adobe product line.**

Managing Assets Using Adobe Bridge

- Navigating between Adobe Bridge and your computer
- Working with metadata
- Organizing collections
- Outputting projects to PDF and for the web
- Automating multiple images in Bridge

**I can create and modify camera raw images within Adobe Photoshop.**

Using Camera Raw

- Basic single image adjustment
- Selective image corrections
- Batch processing and editing
- Understanding Process Version and workflow options
- Automating multiple images

I can navigate Photoshop and understand the application of all of its tools.

Understanding Photoshop Fundamentals

- Navigating the Photoshop workspace
- Importing and exporting presets
- Resetting sliders and options
- Using tool groups and options

**I can create and isolate a selection using masks and layers within Adobe Photoshop**

Understanding Selections

- Creating selections using appropriate tools
- Adding and subtracting from selections
- Quick Mask usage
- Using Refined Edge

Understanding Layers

- Creating and organizing layers
- Understanding the differences between raster and vector layers
- Understanding layer masks
- Searching for layers
- Understanding layer groups
- Understanding layer blend modes

**I can adjust an image for color, tonal range, curves and levels with Adobe Photoshop.**

Understanding Adjustments

- Differentiating between adjustment types
- Using TAT, clipping, and visibility
- Refining masks on adjustments

**I can successfully edit an image using the tools with Adobe Photoshop to transform an image.**

Editing Images

- Working with the retouching tools
- Working with Liquify
- Using the transform controls
- Using the Puppet Warp
- Using the Clone Source tool
- Creating panoramas
- Using HDR Pro
- Creating speciality images (black and white and duotone)
- Selecting color

**I can apply character and paragraph styles to work in a production setting in Adobe Photoshop.**

Working with Design and Print Production

- Using character and paragraph styles
- Using vector shapes
- Working with layer comps
- Creating frame based animations
- Working with layer styles

**I can create a simple animation and video sequence within Adobe Photoshop**

Working with Video

- Ingesting video into Photoshop
- Cutting and trimming video
- Creating transitions within clips
- Adding design elements into video
- Exporting and publishing video
- Using LUT adjustments for style

Outputting for Web, Print, and Mobile

- Differentiating between file types
- Using Save For Web
- Using the Print dialog

## Unit 6: Video and Animated Computer Graphics

1. Animation
  - a. Animated GIFS
  - b. Frame by frame
2. Stop Motion
3. Time Lapse Photography
4. Video

5. Video Editing
  - a. Audio
  - b. Video
  - c. Text
  - d. Transitions

---

**Wisconsin Standards for Technology and Engineering**

---

ICT1: Students will analyze, select and use information and communication technologies.  
ICT1.j: Use various technologies to produce multimedia products and presentations.  
ICT1.f: Analyze, select various technologies, design and develop websites.  
ICT1.g: Analyze and use various technologies to produce graphic communication products.

ICT1.c.1.e: Describe what the difference is between graphic communications and verbal communication.

ICT1.c.2.e: Discuss how graphic communications can be used to influence how you see the world.

ICT1.c.3.e: List ways messages can be communicated without talking to someone.

ICT1.c.4.m: Identify the parts of a graphic message.

ICT1.c.5.m: Prepare a graphic communication message.

ICT1.c.6.m: Examine how we send messages without speaking.

ICT1.c.7.h: Create a graphic message.

ICT1.c.8.h: Summarize how a message can be used to manipulate an audience.

ICT1.c.9.h: Generate an authentic graphic Communication example.

---

**CCSS**

---

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

---

---

**Learning Targets:**

---

I can:

- plan a coherent a story including script and storyboard
  - produce a frame-by-frame animated GIF in Photoshop
  - compose, light and shoot a quality frame by frame stop motion or animated video
  - edit video including audio, text, video clips, transitions and output in a variety of formats.
-

## Unit 7: Output - Reproduction and Marketing

1. Vector Cutting
  - a. Vinyl
  - b. Laser-digital laser material processing technology
  - c. CNC
2. Raster Output
  - a. Inkjet
  - b. Laser
3. Mass Reproduction
  - a. Offset (other - RISO, Xerography)
  - b. Screen
  - c. Flexography
  - d. Other
4. Digital Output
  - a. Web
  - b. Device
  - c. Video
  - d. Multimedia
  - e. Game

## Wisconsin Standards for Technology and Engineering

ICT1: Students will analyze, select and use information and communication technologies.

ICT1.j: Use various technologies to produce multimedia products and presentations.

ICT1.k: Analyze and use various technologies to produce printed products.

ICT1.f: Analyze, select various technologies, design and develop websites.

ICT1.g: Analyze and use various technologies to produce graphic communication products.

MNF1: Students will be able to select and use manufacturing technologies.

ICT1.d: Analyze the principles of effective printed, projected and multimedia communication in a variety of formats and contexts.

ICT1.e: Analyze and use various technologies to design and develop websites.

MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement.

MNF.1.b.4.m: Comprehend and engage in communication methods to convey ideas, concepts and requirements to other individuals and teams

MNF1.d.4.m: Identify the manufacturing process; including the designing, development, making and servicing of products and systems.

MNF1.e.1.e: Explore manufacturing systems that produce products in quantity.

MNF1.e.4.m: Define the purposes of marketing.

MNF1.e.7.h: Use marketing to establish a product's identity, conduct research on its potential, advertise it, distribute it and sell it.

MNF1.f.2.e: Learn that manufactured products are designed.

**CCSS**

CCSS.ELA-Literacy.SL.9-10.4

Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

CCSS.ELA-LITERACY.RST.11-12.4

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 11-12 texts and topics*.

CCSS.ELA-LITERACY.RST.11-12.7

Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RST.11-12.9

Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

**Learning Targets**

I can . . .

- identify the critical components required for a major project.
- work with a team to identify the strengths and weaknesses of each member.
- create a balanced allocation of project tasks for each member based on their skills.
- create a method for tracking progress and communicating items among team members.
- develop a solution to a defined problem.
- summarize what will be done to arrive at a working prototype for a given problem.