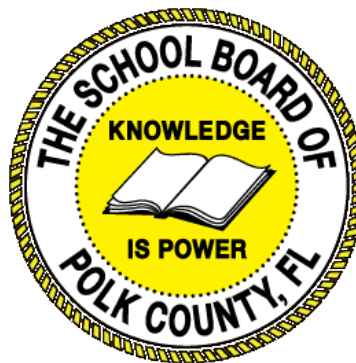


Individual Test Item Specifications

8601020- Communications Technology 2

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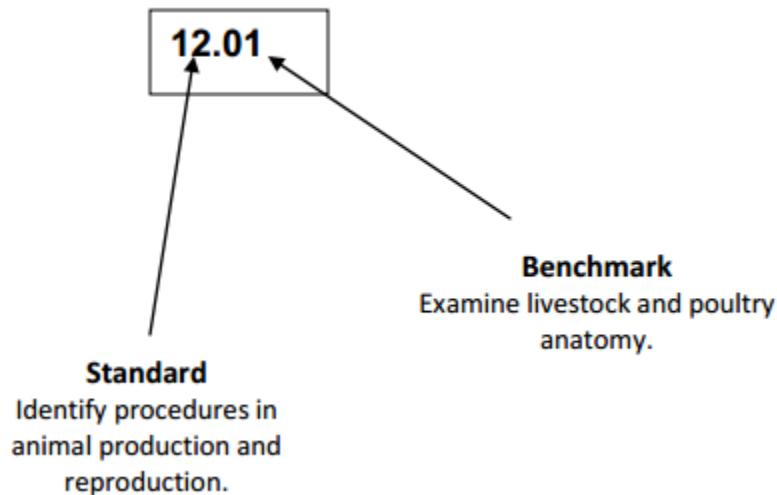
I. Guide to the Individual Benchmark Specifications

Content specific guidelines are given in the *Individual Benchmark Specifications* for each course. The *Specifications* contains specific information about the alignment of items with the Florida Standards. It identifies the manner in which each benchmark is assessed, provides content limits and stimulus attributes for each benchmark, and gives specific information about content, item types, and response attributes.

Benchmark Classification System

- Each Career and Technical Education course has its own set of course standards. The benchmarks are organized numerically, with two numbers separated by a decimal point. The first number is the standard number, and the second number is the benchmark number. You will see these numbers on the Item Specifications for each course.

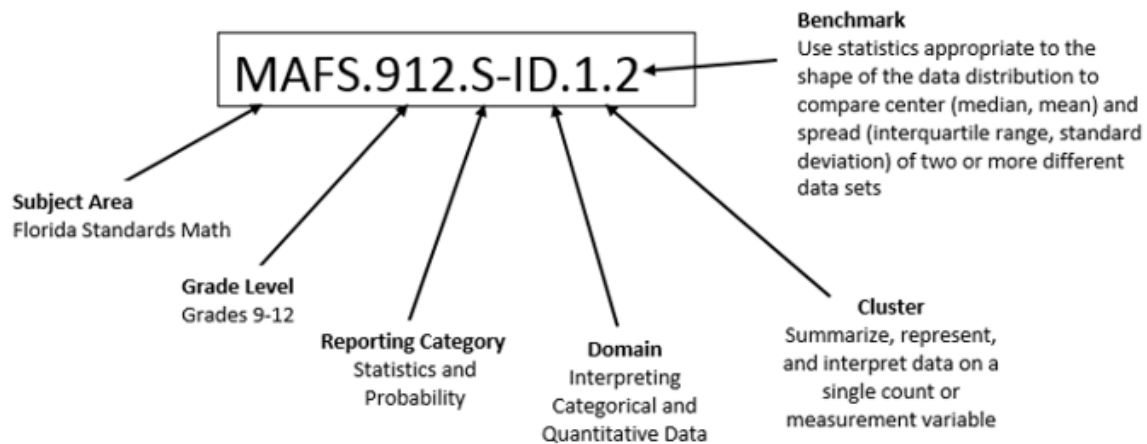
An example, from Agritechnology 1:



The image above describes the components of a Career and Technical Education Standard and Benchmark classification system.

Each MAFS benchmark is labeled with a system of letters and numbers.

- The four letters in the *first position* of the label identify the **Subject**.
- The number(s) in the *second position* represents the **Grade Level**.
- The letter(s) in the *third position* represents the **Category**.
- The number in the fourth position shows the **Domain**.
- The number in the *fifth position* identifies the **Cluster**.
- The number in the last position identifies the specific **Benchmark**.



The image above describes the components of a Florida Standard and Benchmark classification system.

Definitions of Benchmark Specifications

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for the Florida Department of Education Career and Technical Education item banks. For each benchmark assessed, the following information is provided.

Reporting Category	is a grouping of related benchmarks that can be used to summarize and report achievement.
Standard	refers to the standard statement presented in the Florida Standards.
Benchmark	refers to the benchmark statement presented in the Florida Standards. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark.
Item Types	are used to assess the benchmark or group of benchmark.
Cognitive Complexity	ideal level at which item should be assessed.
Benchmark Clarifications	explain how achievement of the benchmark will be demonstrated by students. In other words, the clarification statements explain what the student will do when responding to questions.
Content Limits	define the range of content knowledge and that should be assessed in the items for the benchmark.
Stimulus Attributes	define the types of stimulus materials that should be used in the items, including the appropriate use of graphic materials and item context or content.
Response Attributes	define the characteristics of the answers that a student must choose or provide.
Content Focus	addresses the broad key terms and concepts associated with the examples found in the standards, benchmarks, or benchmark clarifications.
Sample Items	are provided for each type of question assessed. The correct answer for all sample items is provided.

II. Individual Benchmark Specifications

Standard	27.0 Demonstrate an understanding and application of the various approaches used in problem solving.
Benchmark	27.01 Employ research and development processes to assess the functional, economic, and ethical viability of a product or prototype
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will employ research and development processes to assess the functional, economic, and ethical viability of a product or prototype.
Content Focus	Functional, economic,ethical viability
Content Limits	The student will know how to effectively assess factors of a product or prototype.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	If a company decides to invest in a new product, what does the company believe about the product? a. long-term sustainability b. long-term unsuitable c. short-term sustainability d. short-term unsuitable Correct answer: a

Standard	28.0 Demonstrate abilities to apply the design process.
Benchmark	28.05 Select an appropriate brainstorming process (e.g., concept mapping, graphic organizers) and explain its role in the design process.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify and describe the role of brainstorming during the design process.
Content Focus	Brainstorming; design process; criteria; constraints; prototype; sketch
Content Limits	The student must have access to the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What type of brainstorming has you asking what would you do if you were someone else? a. medici effect b. role storming c. SWOT analysis d. variable brainstorming Correct answer: b

Standard	29.0 Demonstrate safe and appropriate use of tools, machines, and materials in communications technology.
Benchmark	29.01 Select appropriate tools, procedures, and/or equipment needed to produce a product.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will select the appropriate tools and/or equipment to complete a task.
Content Focus	Central Processing Unit; Monitor; Printer; Mouse; USB; Internet; Ethernet; Cables; Connect; Disconnect
Content Limits	The student must have access to computers and the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is the best type of cable to use for the best picture when playing your computer on a television? a. Firewire b. HDMI c. RCA d. VGA Correct answer: b

Standard	29.0 Demonstrate safe and appropriate use of tools, machines, and materials in communications technology.
Benchmark	29.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to manufacture a product.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)= (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will demonstrate safe usage of a variety of tools and equipment used to manufacture a product.
Content Focus	Safety Rules; Violations; Precautions; Regulations; Protocol
Content Limits	The student must have access to computers and the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What type of paper types should not be used in inkjet printers? a. laser paper b. photocopy paper c. glossy paper d. hi-gloss paper Correct answer: d

Standard	29.0 Demonstrate safe and appropriate use of tools, machines, and materials in communications technology.
Benchmark	29.05 Identify color-coding safety standards.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify the color coding related to safety standards in the lab or work areas.
Content Focus	Red; blue; white; yelLow
Content Limits	The student must have access to the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	Michael got a splinter while working on a project. What color will the first aid station be in the lab? a. blue b. black c. green d. red Correct answer: c

Standard	29.0 Demonstrate safe and appropriate use of tools, machines, and materials in communications technology.
Benchmark	29.06 Explain fire prevention and safety precautions and appropriate practices for extinguishing fires.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will explain and describe proper fire prevention, precautions, and practices.
Content Focus	Class A; Class B; Class C; etc.
Content Limits	The student must have access to the Internet and to fire extinguishers.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	<p>The CNC mill in Mrs. Kelly's class caught on fire. After the fire department extinguished the fire, they looked for the a cause. Which of the folLowing could be a cause for the fire?</p> <ul style="list-style-type: none"> a. glass beakers sitting next to the plotter b. papers on the workstation c. power cord plugged into an extension cord plugged into a surge protector d. water on the floor <p>Correct answer: c</p>

Standard	30.0 Demonstrate technical knowledge and skills in the area of design.
Benchmark	30.04 Describe organizational structures in layout and design.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will describe organizational structures in layout and design.
Content Focus	Functional, divisional, matrix
Content Limits	The student will know how to name the different organizational structures.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	<p>What is the formal system of reporting relationships and motivates members to work together to achieve goals called?</p> <ol style="list-style-type: none"> hierarchy of authority hierarchy of command organizational cultures organizational structures <p>Correct answer: c</p>

Standard	31.0 Demonstrate technical knowledge and skills in finishing, binding and packaging.
Benchmark	31.01 Describe standard binding, finishing and packaging processes.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will bind, finish, and package a variety of products.
Content Focus	Binding; finishing; packaging; dimensions
Content Limits	The student must have access to the binding machine as well as the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is NOT a method of binding? a. mechanical b. saddle stitch c. screen d. side stitch Correct answer: c

Standard	32.0 Demonstrate proficiency in using presentation software.
Benchmark	32.04 Add and format titles, subtitles, and talking points to a presentation slide.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will create a presentation and add titles and subtitles.
Content Focus	Ribbon; groups; placeholders; titles; subtitles; presentation
Content Limits	The student must have access to Microsoft PowerPoint software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is the Microsoft PowerPoint pane called that is used for talking points? a. navigation pane b. notes pane c. slide pane d. task pane Correct answer: b

Standard	32.0 Demonstrate proficiency in using presentation software.
Benchmark	32.08 Adjust slide transition to include animation.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will create a presentation and add slide transitions and animations.
Content Focus	Ribbon; groups; placeholders; titles; subtitles; presentation; transitions; animations
Content Limits	The student must have access to Microsoft PowerPoint software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is creating a slideshow with all its animation and slide transitions arranged in sequential order called? a. build b. media c. package d. scheme Correct answer: a

Standard	32.0 Demonstrate proficiency in using presentation software.
Benchmark	32.09 Insert and adjust sound settings and timing in presentation.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will create a presentation, insert sound, and add timings.
Content Focus	Ribbon; groups; placeholders; titles; subtitles; presentation; sound; timing; rehearse timings
Content Limits	The student must have access to Microsoft PowerPoint software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	<p>What are the two kinds of sound effect files that can be added to a Microsoft PowerPoint presentation?</p> <p>a. .jpg files and .gif files b. .jpg files and .wav files c. .wav files and .gif files d. .wav files and .mid files</p> <p>Correct answer: d</p>

Standard	32.0 Demonstrate proficiency in using presentation software.
Benchmark	32.11 Produce a presentation that includes text, graphics, and digital images and present it using a projection system.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)= (SA)= (P)=X (ER)=
Cognitive Complexity Level	High
Benchmark Clarification	The student must create a presentation with text and graphics and present the presentation using a projector.
Content Focus	Ribbon; groups; placeholders; titles; insert; graphics; pictures; shapes; presentation
Content Limits	The student must have access to a presentation software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	Ricardo is giving a presentation to a large audience. He has spent a lot of time preparing notes for the presentation. He doesn't want to have a printout but would like to see his notes at the same time the audience sees the presentation. What would be the best method to accomplish this? a. dual view b. moderator view c. note view d. presenter view Correct answer: d

Standard	33.0 Define, design, and complete a desktop publishing product.
Benchmark	33.02 Create a project plan to account for time and resources to complete the project.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)= (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will create a project plan to account for time and resources to complete the project.
Content Focus	Bidding, criteria, constraints, refernce, materials, resources, blueprints, specification, equipment limits and abilities
Content Limits	The student will know how to determine the appropriate amount of time and amount of resources needed to complete a project.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is NOT a resource that needs to be scheduled during a project? a. cash fLow b. facilities c. staff d. warranties Correct answer: d

Standard	34.0 Demonstrate proficiency in using digital photography and digital imaging.
Benchmark	34.01 Demonstrate proficiency in adjusting the hardware features of a basic digital SLR camera, including manual settings, shutter speed, f-stops, et al,
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)= (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will demonstrate proficiency in adjusting the hardware features of a basic digital SLR camera, including manual settings, shutter speed, f-stops, et al.
Content Focus	Manual settings, shutter speed, f-stops, body, lens, focus, aperture, viewfinder, shutter
Content Limits	The student will know how to use a digital SLR camera and its features.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What is the device in the camera called that opens and closes the to expose the film or sensors to light for a measured length of time? a) Shutter b) Shutter Button c) Shutter Priority Mode d) Shutter Speed-Control Correct answer: a

Standard	35.0 Demonstrate proficiency in manipulating two-dimensional images.
Benchmark	35.02 Transform images using scale, skew, distortion, rotation, and flip features.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student must create a presentation, insert graphics, change the scale, skew and rotation of the graphics.
Content Focus	Ribbon; groups; placeholders; titles; insert; graphics; pictures; shapes; scale; skew; distort; rotate; flip horizontally; flip vertically; presentation
Content Limits	Items may include the use of presentation and/or photo editing software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	<p>What is ONE difference between scale and crop in two-dimensional images?</p> <p>a. crop is destructive editing and scale is resizing</p> <p>b. crop is resizing and scale is destructive editing</p> <p>c. crop is non-destructive editing and scale is destructive editing</p> <p>d. crop is non-destructive and scale is resizing</p> <p>Correct answer: a</p>

Standard	35.0 Demonstrate proficiency in manipulating two-dimensional images.
Benchmark	35.03 Adjust images using arrange, group, and flatten functions.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student must create a presentation, insert graphics; arrange and group the graphics; and flatten.
Content Focus	Ribbon; groups; placeholders; titles; insert; graphics; pictures; shapes; scale; skew; distort; rotate; flip horizontally; flip vertically; presentation; arrange; group; flatten
Content Limits	Items may include the use of presentation and/or photo editing software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	In most photo editing software, what is an advantage of using a layered file over a flattened file? a. be able to make adjustments b. hidden layers are deleted c. smaller size d. transparent areas turn white Correct answer: a

Standard	36.0 Demonstrate an understanding of kinetic typography.
Benchmark	36.01 Describe the principles of kinetic typography as they relate to communications design.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student will identify terminology related to kinetic typography.
Content Focus	kinetic; typography; animation;
Content Limits	Items may include the use of diverse photo editing software.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	When viewing an image with kinetic typography, what does the kinetic typography effect? a. emotion b. justification c. size d. whitespace Correct answer: a

Standard	37.0 Use computer networks, internet and online resources to facilitate collaborative communication.
Benchmark	37.02 Discuss the ethics and copyright legalities of downloading or sharing music or videos from online collaborative environments.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student must describe ethics and copyright issue related to downloading or sharing of music and videos.
Content Focus	Copyright; ethics; legalities; collaborative; downloading
Content Limits	The student must have access to the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	How is downloading and sharing music from the internet without paying for it a possible problem? a. Copyright infringement b. Cloud computing c. Internet file sharing d. Software piracy Correct answer: a

Standard	37.0 Use computer networks, internet and online resources to facilitate collaborative communication.
Benchmark	37.05 Use various web tools associated with online collaboration, including those used in downloading files, transfer of files, telnet, FTP, PDF, plug-ins, and data compression.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)= (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student must use different web tools using the Internet including but not limited to downloading, transferring, and compressing.
Content Focus	Downloading; telnet; FTP; PDF; plug-ins; compression
Content Limits	The student must have access to the Internet as well as permission to download and transfer files.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	What allows different file formats to be viewed as part of a standard HTML document? a. lossy compression b. lossless compression c. plug-ins d. preferences Correct answer: c

Standard	38.0 Compare and contrast various forms of digital media delivery systems.
Benchmark	38.01 Explain the benefits and constraints of fixed versus streaming digital media.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student must identify and describe the different types of businesses.
Content Focus	Sole proprietorship; partnership; corporation
Content Limits	The student must have access to the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	Pandora is an example of a service where you do not choose the content and you don't know what's going to come next. What is this type of streaming called? a. fixed streaming b. interactive streaming c. multicast streaming d. noninteractive streaming Correct answer: b

Standard	39.0 Plan, organize, and carry out a communications project plan.
Benchmark	39.03 Identify and explain personal and long-term consequences of unethical or illegal behaviors in the workplace.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	Moderate, High
Benchmark Clarification	The student must identify unethical or illegal behaviors in the workplace.
Content Focus	Ethics; unethical; legal; illegal
Content Limits	The student must have access to the Internet.
Stimulus Attributes	Worksheets, observations, hands on assignments, examples and non examples, simulations, role playing
Response Attributes	Documents, checklists, design briefs, project scope, feedback, performance rubrics, simulations, examples
Sample Item	Louisa works for a software programming company and her department is aware of a flaw in the new system. Her company is going to publish the software next month. Why is this a problem? a. it is illegal b. it is unethical c. it is embezzlement d. it is nepotism Correct answer: b