In partnership with the **Central Florida Assessment Collaborative (CFAC)** and the **School Board of Polk County**

Individual Test Item Specifications

9410120- Robotic Design Essentials
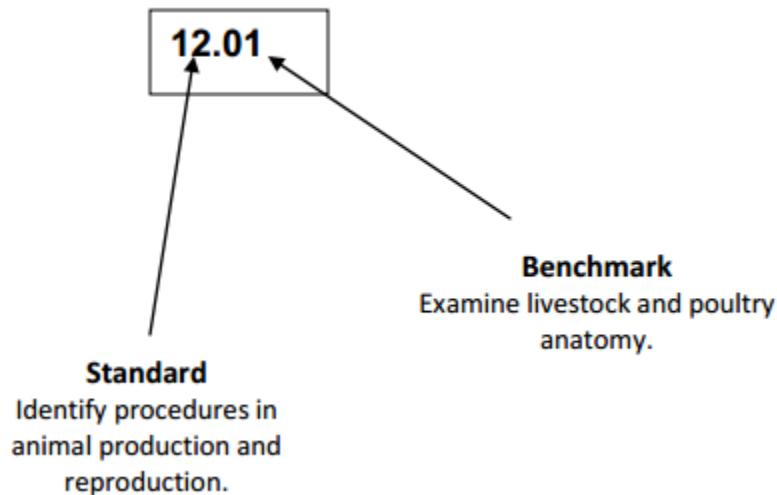
2015

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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:

12.01

Benchmark
Examine livestock and poultry anatomy.
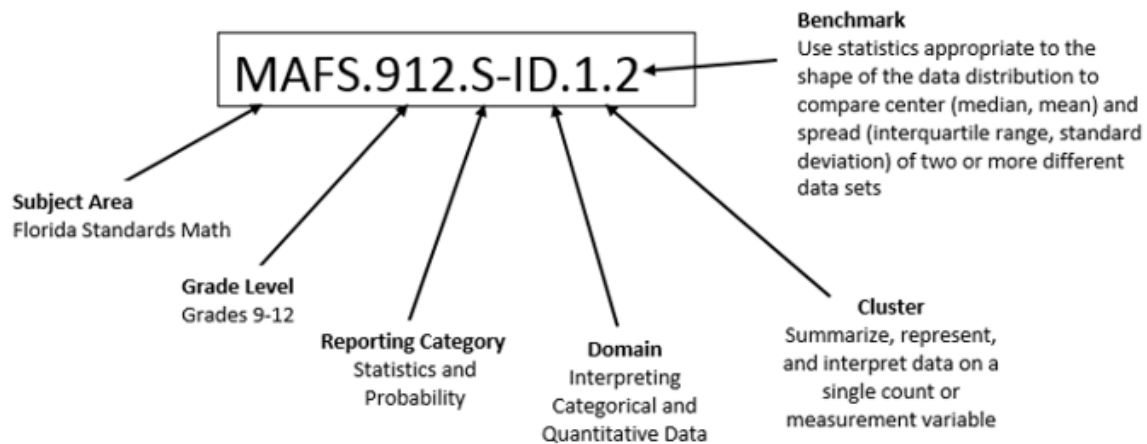
Standard
Identify procedures in animal production and reproduction.

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**.

MAFS.912.S-ID.1.2

Benchmark
Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets

Subject Area
Florida Standards Math

Grade Level
Grades 9-12

Reporting Category
Statistics and Probability

Domain
Interpreting Categorical and Quantitative Data

Cluster
Summarize, represent, and interpret data on a single count or measurement variable

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	defines the content measured by each test item. 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	16.0 Explain how electronic devices are used in the operation of a robotic assembly. – The student will be able to:
Benchmark	16.01 Design and build breadboard or printed circuit boards for a robotic assembly.
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	Students will identify basic electronic components and parts of an electronic breadboard.
Content Focus	Breadboard, bus, resistors, capacitors, transistors, IC, terminal strips, power rails, DIP, Binding post, power bus, ground bus, rows
Content Limits	Content is limited to the parts of a breadboard, how a breadboard works and basic electronic components.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples

Sample Item	What gauge wire is to make connections with solderless breadboards?
	    A. 18
	    B. 20
	    C. 22
	    D. 24
	
	Correct Answer: C

Standard	17.0 Demonstrate an understanding of various technologies used in the design of robotic assemblies. – The student will be able to:
Benchmark	17.07 Compare and contrast the use of USB, firewire, Ethernet, serial cabling and wireless (Bluetooth, 802.11x) strategies and technologies in the design of robotic assemblies.
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	Students will identify the different computer ports and provide or identify examples of their use.
Content Focus	USB, Serial, Firewire, bluetooth
Content Limits	content is limited to identifying ports and example uses.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples
Sample Item	Which of the folLowing ports alLows a computer to connect to the internet? A. Ethernet B. Firewire C. Serial D. USB Correct Answer: A

Standard	18.0 Demonstrate an understanding of advanced mathematics and physics associated with the design of a robotic assembly. – The student will be able to:
Benchmark	18.02 Describe the term "degrees of freedom" and relate it to the design of joints used in robotic assemblies.
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	Students will identify the basic terms and type of robotic joints and end effectors.
Content Focus	Degree of freedom, pitch, roll, yaw, traverse, radial, vertical, scara, cartesian
Content Limits	Content is limited to understanding the terms that describe degrees of freedom in different robotic arm configurations.
Stimulus Attributes	Images and definitions will be used.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the term used to describe a robots dexterity?
	    A. articulation
	    B. cartesian configuration
	    C. degrees of freedom
	    D. revolute configuration
	
	Correct Answer: C

Standard	18.0 Demonstrate an understanding of advanced mathematics and physics associated with the design of a robotic assembly. – The student will be able to:
Benchmark	18.03 Describe angular momentum and its role in the design of robotic joint motion, balance, and mobility.
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	Students will identify from Images and descriptions different types of robotic joint, and joint motion.
Content Focus	Revolute, SCARA, anthropomorphic, cartesian, cylindrical, spherical,
Content Limits	Content is limited to robot joint configurations, identification and examples of there uses.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is a type of angular motion control which uses mechanical end stops or limit switches?
	    A. continuous path
	    B. multipath
	    C. pick and place
	    D. point to point
	
	Correct Answer: C

Standard	19.0 Create a program to control a robotic mechanism. – The student will be able to:
Benchmark	19.05 Write Code for evaluating a condition and performing an appropriate action using If/then statements.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will identify and define if/then statements in a program, how conditional logic effects programs, and demonstrate there use.
Content Focus	If/then, do/while, for loop, else-if. Conditional logic
Content Limits	Content is limited to terms and definitions, identificaiton and comparing to other statement.
Stimulus Attributes	Samples of Code may be used, worksheets, hands on assignments, simulations.
Response Attributes	Code writing, projects, experiments, worksheets
Sample Item	Which of the folLowing is a conditional statement? A. David plays basketball B. Mary plays volleyball when David plays basketball C. If Mary plays volleyball then David plays basketball D. David and Mary play basketball, volleyball and baseball Correct Answer: C

Standard	19.0 Create a program to control a robotic mechanism. – The student will be able to:
Benchmark	19.06 Write Code for performing actions within a Code segment (using do/while statements) for as long as a given condition exists.
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 identify and define do/while statements in a program, how conditional logic effects programs, and demonstrate there use.
Content Focus	Do/while, if/then, for loop, else-if, conditional logic
Content Limits	Content is limited to terms and definitions, identificaiton and comparing to other logic statements.
Stimulus Attributes	Samples of Code may be used, worksheets, hands on assignments, simulations.
Response Attributes	Code writing, projects, experiments, worksheets

Sample Item	What statement continually executes a block of statements while a condition remains true?
	    A. do/while
	    B. else if
	    C. for loop
	    D. if/then
	
	Correct Answer: A

Standard	20.0 Describe the operation and use of various forms of electrical motors in robotic assemblies. – The student will be able to:
Benchmark	20.02 Explain the operation and use of stepper motors to control or limit movement of a robotic assembly.
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	Students will explain how stepper motors work and their basic parts.
Content Focus	Magnets, encoder, winding, ball bearings, rotor pole, shaft, stator laminations
Content Limits	Content is limted to the parts and terms related to stepper motors and examples of there use.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What types of sensors are used to sense rotor position in a brushless DC motor?
	    A. hall effect
	    B. direct drive
	    C. sinusoidal drive
	    D. vector control
	
	Correct Answer: A

Standard	20.0 Describe the operation and use of various forms of electrical motors in robotic assemblies. – The student will be able to:
Benchmark	20.04 Explain the operation, use, and advantages of brushless motors used in robotics.
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	Students will identify the parts of a brushless motor and give/identify examples of its use. Students will also be able to identify advantages over other motor types.
Content Focus	Shaft, magnets, coils, stator, synchronous
Content Limits	Content is limited to the identification of terms, uses and parts of a brushless DC motor.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	Which one of the folLowing does a brushless motor lack?
	    A. circuit board
	    B. drive shaft
	    C. magnets
	    D. physical commutator
	
	Correct Answer: D

Standard	20.0 Describe the operation and use of various forms of electrical motors in robotic assemblies. – The student will be able to:
Benchmark	20.05 Explain the types, use, and advantages of linear actuators used in robotics.
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	Students will identify and explain different types of motor/robotic motion, including linear actuators.
Content Focus	Double acting, nondifferential, single acting, double acting
Content Limits	Content is limited the terms describing linear acutators and examples of there use.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the name of a load device that a robotic arm uses to lift, compress, hold, or position objects?
	    A. linear actuators
	    B. flow control device
	    C. fluid pump
	    D. servo motor
	
	Correct Answer: A

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.02 Explain how Cartesian coordinate systems are used to locate objects in three dimensional space.
Item Types **(MC)-Multiple Choice** **(SA)-Short Answer** **(P)-Performance** **(ER)-Extended Response**	(MC)=X (SA)=X (P)=X (ER)=
Cognitive Complexity Level	Low, Moderate
Benchmark Clarification	The student will define, provide and identify examples of the cartesian coordinate system.
Content Focus	Cartesian coordinates, address, plane X, Y, Z, axis, quadrants
Content Limits	Content is limited to the Cartesian coordinate system, its definition, exampels of use and comparison to other coordinate systems.
Stimulus Attributes	Images may be used, worksheets, hands on assignments, simulations
Response Attributes	Examples, projects, experiments, checklists, simulations

Sample Item	The coordinates are the distances from the point to two or more fixed perpendicular directed lines, measured in the same unit of length. What is the system that specifies a point uniquely in a plane, specified by using a numerical coordinates?
	    A. axis
	    B. cartesi
	    C. function
	    D. quadrant
	Correct Answer: A

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.03 Describe basic geometric shapes available in 3D modeling software (sphere, cube, cylinder, torus, cone, plane, axis point).
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	Students will identify the Images and descriptions from the shapes available in 3D modeling software.
Content Focus	Axis point, cone, plane, torus, cylinder, cube, sphere
Content Limits	Content is limited to identifying the basic shapes and tools of 3D modeling software.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	Which of the folLowing is defined by a surface revolution generated by revolving a circle in three-dimensional space?
	    A. cone
	    B. cylinder
	    C. torus
	    D. sphere
	
	Correct Answer: C

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.04 Describe basic shapes available in 2D modeling software (arcs, ellipses, circles, curve, freehand curves, polygons, splines).
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	Students will identify from Images and descriptions the shapes available in 2D modeling software.
Content Focus	Arcs, ellispses, circles, curvem freehand, polygon, splines.
Content Limits	Content is limited identifying 2D image shapes
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	Which of the folLowing is described by a regular oval shape, traced by a point moving in a plane so that the sum of its distances from two other points is constant?
	    A. Cone
	    B. Ellipses
	    C. Polygon
	    D. Spline
	
	Correct Answer: B

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.06 Describe the Boolean modeling operations of union, subtraction, and intersection.
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	Students will describe and identify uses of Boolean modeling operations.
Content Focus	Union, subtraction, intersection
Content Limits	Content is limited to Boolean operations union, subtraction and intersection.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	Which Boolean operator is the merger of two objects into one?
	    A. Difference
	    B. Intersection
	    C. Transformation
	    D. Union
	
	Correct Answer: D

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.07 Describe how extrusion or sweeping techniques transform 2D objects into 3D objects.
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	Students will identify and explain the uses of extrusion and sweeping techiques.
Content Focus	Extrusion, sweeping, 3D tools
Content Limits	Content is limited to identifying and uses of extrusion, and sweeping techniques.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the command alLows you to create a solid object from circles, polygons, and objects, that have closed paths?
	    A. Extrude
	    B. Loft
	    C. Scale
	    D. Sweep
	
	Correct Answer: A

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.08 Describe the lofting technique for creating 3D objects.
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	Students will identify and decribe the lofting technique.
Content Focus	Lofting technique, 3D tools
Content Limits	Content is limited to identifying and providing uses for the lofting technique.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.
Sample Item	What is the command that is a variant of a wireframe alLowing you to generate complex geometry in a single feature? A. extrude B. loft C. Scale D. Sweep Correct Answer: B

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.09 Describe the revolve or lathe techniques for animating a 2D object and give examples of their application.
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	Students will identify and give examples for the use of revolve or lathe techniques in 2D animated objects.
Content Focus	3D tools, revolve, lathe, animate
Content Limits	Content is limited to identifying the revolve and lathe techniques from descriptions and Images.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What command is similar to the extrude command because it copies the original curve at a specified offset, and then connects the curves with polygon?
	    A. extrude
	    B. face
	    C. loft
	    D. revolve
	
	Correct Answer: D

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.10 Describe the scale, rotate, and move actions that comprise the transformation technique for animating a 3D object.
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	Students will identify the parts of a brushless motor and give/identify examples of its use. Students will also be able to identify advantages over other motor types.
Content Focus	Shaft, magnets, coils, stator, synchronous
Content Limits	Content is limited to brushless motor, their parts and examples of use.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What transformation command takes the original coordinates of an object and are multiplied by a given factor?
	    A. copy
	    B. scale
	    C. rotate
	    D. zoom
	
	Correct Answer: B

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.12 Describe the copy or clone technique.
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	Students will identify and give example uses of the copy and clone techique in 3D modeling software.
Content Focus	3D tools, copy, clone
Content Limits	content is limited to examples and Images of copy and clone tools and techiques
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the tool used to replace information for one part of a picture with information from another part?
	    A. clone
	    B. extrude
	    C. pan
	    D. sweep
	
	Correct Answer: A

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.13 Describe the mirror technique.
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	Students will identify and describe the mirror technique in 3D modeling software.
Content Focus	Mirror
Content Limits	Content is limited to the mirror tool and examples of it use.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What tool is used to copy and move the pixels selected by the brush to another part of the image?
	    A. clone
	    B. extrude
	    C. face
	    D. loft
	
	Correct Answer: A

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.14 Compare and contrast the wire frame and solid viewing tools.
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	Students will identify both wire frame and solid viewing tools and provide examples of each.
Content Focus	Wire frame, solid frame tools
Content Limits	Content is limited to comparison and uses of solid frame and wire frame tools
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the term for a skeletal representation of a real-world 3D object using lines and curves?
	    A. 2D modeling
	    B. Solid
	    C. Surface
	    D. Wireframe
	
	Correct Answer: D

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.15 Describe basic viewing navigation tools such as zoom, rotate, and panning.
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	Students will identify from descriptions and Images navigation tools such as zoom, rotate, panning etc..
Content Focus	Zoom, rotate, panning
Content Limits	Content is limited to navigation tools
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What tool makes a model appear larger or smaller depending on the input you give it?
	    A. clone
	    B. panning
	    C. rotate
	    D. zoom
	
	Correct Answer: B

Standard	22.0 Demonstrate an understanding of basic 3D modeling concepts. – The student will be able to:
Benchmark	22.16 Define plug-in and describe how it extends the capability of the modeling program.
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	Students will describe, provide, and identify examples of plug-ins for 3D modeling software.
Content Focus	Plug-ins
Content Limits	Content is limited to the effects of software plug-ins.
Stimulus Attributes	Images may be used, Worksheets, hands on assignments, simulations.
Response Attributes	Projects, experiments, checklists, simulations, examples.

Sample Item	What is the name of a software component that adds a specific feature to an existing software application?
	    A. application
	    B. font
	    C. plug in
	    D. extension
	
	Correct Answer: C