ROCKWOOD
Engineering & Technology

TECHNICAL DESIGN

Lesson Plans Mr. Kush

August 29

TECHNICAL DESIGN

OBJECTIVES: Students will be able to comply with the set expectations and procedures for this class.
Students will contemplate future job occupations and future education opportunities.

ACTIVITIES: Introduction & discussion of course
Procedure / Policy Handout
Distribute folder & Engineering Design Journal
Complete the occupation questionnaire

EVALUATION: Procedure / Policy / Student Expectation signature form is due by Friday 2nd

ENRICHMENT: Independent exploration of Rockwood's 2010-2011 "Student Expectations"
Be Respectful
Be Prepared
Be On Time

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present

PA STANDARDS for Science, Engineering, and Technology: N/A

August 30

TECHNICAL DESIGN

OBJECTIVES: Students will be able to examine reasons that sketching is used to communicate.
Students will be able to identify and demonstrate construction, object, hidden, dimension, and center lines.
Students will be able to demonstrate proper sketching form and techniques for vertical and horizontal lines and triangular shapes.

ACTIVITIES: Handout "Sketching Tips"

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
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Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A

August 31

TECHNICAL DESIGN

OBJECTIVES: Students will be able to demonstrate proper freehand sketching form and techniques for circles and arcs.
Students will be able to accurately sketch horizontal and vertical lines ½" modeling proper sketching techniques.

ACTIVITIES: Handout "Sketching Tips"
Handout "Sketching Unit Checklist"
Complete horizontal and vertical line sketch activity.

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 1

TECHNICAL DESIGN

OBJECTIVES: Students will be able to accurately sketch squares increasing in size by ½"
Students will be able to accurately sketch circles in squares increasing in size by ½"

ACTIVITIES: Handout "Sketching Tips"
Complete Square in a Square activity
Complete Circle in a Square activity

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 5

TECHNICAL DESIGN

OBJECTIVES: Students will be able to demonstrate sketch compound sketching techniques.

ACTIVITIES: Handout "Sketching Tips"
Complete challenge part activity

Complete 3D Arrow activity

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 6

TECHNICAL DESIGN

OBJECTIVES: Students will be able to create 3D shapes using the angle line technique.

ACTIVITIES: 3D angle line corner technique demonstration
Activity: 3D Initials

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent 3D sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 7

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify perspective.
Students will be able to create perspective 3D shapes

ACTIVITIES: perspective point technique demonstration
Activity: 3D Initials perspective

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent 3D sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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September 8

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify differing perspective points.
Students will be able to create a vanishing point perspective sketch

ACTIVITIES: handout – "Hallway Vanishing Point"
vanishing point perspective point technique demonstration
Activity: vanishing point hallway practice

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent vanishing point sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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Option for preferential seating

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September 11

TECHNICAL DESIGN

OBJECTIVES: Students will be able to create a vanishing point perspective sketch.

ACTIVITIES: handout – "Hallway Vanishing Point"
Activity: vanishing point hallway final copy

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent vanishing point sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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September 12

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED**: Students will be able to create a vanishing point perspective sketch.

ACTIVITIES: handout – "Hallway Vanishing Point"
Activity: vanishing point hallway final copy

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent vanishing point sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
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September 13

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED**: Students will be able to create a vanishing point perspective sketch.

ACTIVITIES: handout – "Hallway Vanishing Point"
Activity: vanishing point hallway final copy

EVALUATION: Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent vanishing point sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
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September 14

TECHNICAL DESIGN

OBJECTIVES: Given a three dimensional object, students will be able to sketch its orthographic projections.

ACTIVITIES:
Orthographic projection demonstration
Student practice of orthographic projection
Orthographic Projection 1 assignment

EVALUATION:
Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent orthographic sketching activities

ACCOMMODATIONS:
Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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September 15

TECHNICAL DESIGN

OBJECTIVES: Given a three dimensional object, students will be able to sketch its orthographic projections.

ACTIVITIES:
Orthographic Projection 2 assignment
Orthographic Projection 3 assignment
Orthographic Projection 4 assignment

EVALUATION:
Formal assessment of sketching assignments at the completion of this unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent orthographic sketching activities

ACCOMMODATIONS:
Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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September 18

TECHNICAL DESIGN

OBJECTIVES: **3D-Object Design Unit - Handout**
Students will be able to plan and sketch a three dimensional object within the set parameters having one angle, cutout, notch, or hole.

ACTIVITIES: Using ¼" graph paper, students will create three different idea sketches for the challenge.
Students will select one idea for approval by Mr. Kush

EVALUATION: Formal assessment of 12 points for the rough sketches for meeting quality and size parameters
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent orthographic sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
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September 19

TECHNICAL DESIGN

OBJECTIVES: **3D-Object Design Unit - Handout**
Students will be able to sketch orthographic views for their selected 3D object.

ACTIVITIES: Using ¼" graph paper, students will draw the top, front, and side views of their selected 3D object.
Students will use the prescribed lettering style and format.
Students will provide accurate measurements for each line.

EVALUATION: Formal assessment of the orthographic views at the completion of the unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent orthographic sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
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September 20

TECHNICAL DESIGN

OBJECTIVES: **3D-Object Design Unit - Handout**
Students will be able to sketch the isometric view for their selected 3D object.

ACTIVITIES: Students will observe a sample isometric view presentation.
Using ¼" graph paper, students will draw the isometric view of their selected 3D object.
Students will use the prescribed lettering style and format.
Students will provide accurate measurements for each line.

EVALUATION: Formal assessment of the isometric views at the completion of the unit.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent isometric sketching activities

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
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September 21

TECHNICAL DESIGN

OBJECTIVES: **3D-Object Design Unit - Handout**
Students will be able to **construct** the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
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September 22

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 25

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 26

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 27

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 28

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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September 29

TECHNICAL DESIGN

OBJECTIVES: **CONTINUED:** Students will be able to construct the 3-D object according to their three view orthographic drawing.

ACTIVITIES: Students use a selected balsa wood cutter, quilting pins, wood glue, ruler, balsa wood, and their student created orthographic three view drawings to create a 3-D object. The 3-D object must contain a notch, cutout, or hole, and an angle. Students then identify the working planes of the 3-D object by cutting and placing a different color of paper on each of the four planes. Surfaces that are in two planes are identified with a corresponding stripe.

EVALUATION: Formal assessment of the 3-D project based on a scoring rubric.
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ENRICHMENT: Independent exploration of 3-D design.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
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October 2

TECHNICAL DESIGN

OBJECTIVES: Students will be able to comply with the set expectations and procedures for this class.
Students will be able to use a ruler and measure to the nearest 1/16" inch.

ACTIVITIES: "Giant Inch" measuring review activity
Completion of the following measuring activities:
"Measuring Practice" handout

EVALUATION: Informal assessment of completion of the measuring practice guides
Procedure / Policy / Student Expectation signature form is due Friday

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring
Measuring game activity at http://www.rsinnovative.com/rulergame/

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
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PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

October 3

TECHNICAL DESIGN

OBJECTIVES: Students will be able to comply with the set expectations and procedures for this class.
Students will be able to use a ruler and measure to the nearest 1/16" inch.

ACTIVITIES: "Giant Inch" measuring review activity
"Measuring Practice 1" handout
"Measuring Practice 2" handout
Measuring Test

EVALUATION: Informal assessment of completion of the measuring practice guides
Procedure / Policy / Student Expectation signature form is due Friday
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring
Measuring game activity at http://www.rsinnovative.com/rulergame/

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

October 4

TECHNICAL DESIGN

OBJECTIVES: Students will be able to comply with the set expectations and procedures for this class.
Students will be able to use a ruler and measure to the nearest 1/16" inch.

ACTIVITIES:
Measuring Test

EVALUATION: Informal assessment of completion of the measuring practice guides
Procedure / Policy / Student Expectation signature form is due Friday
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring
Measuring game activity at http://www.rsinnovative.com/rulergame/

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

October 5

TECHNICAL DESIGN

OBJECTIVES: Students will be able to demonstrate basic drafting lettering competency.

ACTIVITIES: Students will complete the handouts:
Lettering Practice 1 – Large Letters
Lettering Practice 2 – 3/16" 1/8" Smaller Letters

EVALUATION: Formal assessment of Lettering Practice 1 – 10 points
Formal assessment of Lettering Practice 2 – 10 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A

October 6

TECHNICAL DESIGN

OBJECTIVES: Students will be able to demonstrate basic drafting lettering competency.

ACTIVITIES: Students will complete the handouts:
Lettering Practice 2 – 3/16" 1/8" Smaller Letters
Letter Practice 3 – Paragraph Lettering

EVALUATION: Formal assessment of Lettering Practice 2 – 10 points
Formal assessment of Lettering Practice 3 – 10 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A

October 10

TECHNICAL DESIGN

OBJECTIVES: Students will be able to demonstrate basic drafting lettering competency.

ACTIVITIES: Students will complete the handouts:
Lettering Practice 2 – 3/16" 1/8" Smaller Letters

Letter Practice 3 – Paragraph Lettering

EVALUATION: Formal assessment of Lettering Practice 2 – 10 points
Formal assessment of Lettering Practice 3 – 10 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A

October 11

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify basic drafting tools: T-square, 30-60-90 & 45 triangles, compass
Students will be able to use basic drawing tools to produce a board and title bar using proper drawing techniques.

ACTIVITIES: Introduction to drafting and drafting tools
Demonstration of attaching a paper to the drawing board, creating a standard border with title block with proper lettering skills and identifying the center of a paper
Student will create a practice border and title bar
Students will create a final border and title bar Sheet #0

EVALUATION: Formal assessment of the final copy of the border and title bar Sheet #0
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary

Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 12

Technical Design

OBJECTIVES: Students will be able to conduct a brief presentation on development of personal mechanical drawing skills

ACTIVITIES: Presentation on development of personal mechanical drawing skills

EVALUATION: Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of mechanical drawing

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 13

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify basic drafting tools: T-square, 30-60-90 & 45 triangles, compass
Students will be able to use basic drawing tools to produce a board and title bar using proper drawing techniques.

ACTIVITIES: Introduction to drafting and drafting tools
Demonstration of attaching a paper to the drawing board, creating a standard border with title block with proper lettering skills and identifying the center of a paper
Student will create a practice border and title bar
Students will create a final border and title bar Sheet #0

EVALUATION: Formal assessment of the final copy of the border and title bar Sheet #0
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments

T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 16

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify basic drafting tools: T-square, 30-60-90 & 45 triangles, compass
Students will be able to use basic drawing tools to produce a board and title bar using proper drawing techniques.

ACTIVITIES: Introduction to drafting and drafting tools
Demonstration of attaching a paper to the drawing board, creating a standard border with title block with proper lettering skills and identifying the center of a paper
Student will create a practice border and title bar
Students will create a final border and title bar Sheet #0

EVALUATION: Formal assessment of the final copy of the border and title bar Sheet #0
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting lettering technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 17

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify and use basic drafting tools: T-square, 30-60-90 & 45 triangles, compass Students will be able to use basic drawing tools to produce a board and title bar using proper drawing techniques.

ACTIVITIES: Use drawing tools and drawing, and measuring techniques to draw Sheet #1 Football Field

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #1 Football Field
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 18

TECHNICAL DESIGN

OBJECTIVES: Students will be able to identify and use basic drafting tools: T-square, 30-60-90 & 45 triangles, compass Students will be able to use basic drawing tools to produce a board and title bar using proper drawing techniques.

ACTIVITIES: Use drawing tools and drawing, and measuring techniques to draw Sheet #1 Football Field

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #1 Football Field
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room

Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 19

TECHNICAL DESIGN

OBJECTIVES: Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #1 Football Field

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #1 Football Field
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 20

TECHNICAL DESIGN

OBJECTIVES: **Day 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve

for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #2 Inlay

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #2 Inlay
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 23

TECHNICAL DESIGN

OBJECTIVES: **Day 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #2 Inlay

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #2 Inlay
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 24

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #3 H Stencil

EVALUATION: Formal20 point assessment of the final copy of the border and title bar Sheet #3 H Stencil
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 25

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #3 H Stencil

EVALUATION: Formal20 point assessment of the final copy of the border and title bar Sheet #3 H Stencil

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 26

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #3 H Stencil

EVALUATION: Formal20 point assessment of the final copy of the border and title bar Sheet #3 H Stencil
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 27

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #4 Rockwood Pride

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #4 Rockwood Pride
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 30

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #4 Rockwood Pride

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #4 Rockwood Pride

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

October 31

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #5 Stop Sign

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #5 Stop Sign
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 1

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #5 Stop Sign

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #5 Stop Sign
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

END 1st 9 Weeks

November 2

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #5 Stop Sign

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #5 Stop Sign

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 6

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #6 Header Gasket

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #6 Header Gasket
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 7

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #6 Header Gasket

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #6 Header Gasket
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 8

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #6 Header Gasket

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #6 Header Gasket
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students

Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 9

TECHNICAL DESIGN

OBJECTIVES: Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Presentation on reading all scales on an Architect Scale. Students will participate in reading various scales and drawing lines of specific lengths.

EVALUATION: Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of reading Architect Scales.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 10

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #7 Scaled Drawing

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #7Scaled Drawing

Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 14

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #7 Scaled Drawing

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #7 Scaled Drawing
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 15

TECHNICAL DESIGN

OBJECTIVES: Students will be able to select and prepare a compass for drawing use
Students will be able to use and apply compass techniques.
Students will be able to draw basic arcs and circles.“Circle & Arc Practice”.

ACTIVITIES: Select and prepare a compass for drawing
On blank white paper, use and experiment with a compass to draw practice arcs and circles of various sizes

EVALUATION: 20 points for completion of Sheet #8
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 16

TECHNICAL DESIGN

OBJECTIVES: CONTINUED: Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance. Students will be able to apply a variety of scales on the Architect Scale to develop drawing #8 “Circle & Arc Practice”.

ACTIVITIES: Continue mechanical drawing of Sheet #8 “Circle & Arc Practice”

EVALUATION: 20 points for completion of Sheet #8
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 17

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve

for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #9 Shearing Blank

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #9 Shearing Blank
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 20

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #9 Shearing Blank

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #9 Shearing Blank
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 21

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #9 Shearing Blank

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #9 Shearing Blank
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 22

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #10 Fibonacci Spiral

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #10 Fibonacci Spiral
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

Thanksgiving Vacation

Remember to give thanks for all that you are thankful for!

November 29

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #10 Fibonacci Spiral

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #10 Fibonacci Spiral
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

November 30

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #11 Soccer Field

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #11 Soccer Field Spiral
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 1

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to use mechanical drawing tools to produce a drawing according to the given dimensions. Students will be able to use basic algebra and problem solving to solve for unknown measurements. Students will be able to demonstrate proper mechanical drawing technique.

ACTIVITIES: Draw and solve Sheet #11 Soccer Field

EVALUATION: Formal 20 point assessment of the final copy of the border and title bar Sheet #11 Soccer Field Spiral
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration of drafting technique.

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 4

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Steeler Logo" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #12 Steeler Logo

EVALUATION: 20 points for completion of Sheet #12 Steeler Logo
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 5

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Steeler Logo" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #12 Steeler Logo

EVALUATION: 20 points for completion of Sheet #12 Steeler Logo
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 6

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Steeler Logo" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #12 Steeler Logo

EVALUATION: 20 points for completion of Sheet #12 Steeler Logo
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 7

TECHNICAL DESIGN

OBJECTIVES: **Day 1** Students will be able to differentiate between isometric, oblique, and orthographic views. Students will be able to identify drawings as isometric, oblique, and orthographic views. Students will be able to create an isometric cubes freeform drawing.

ACTIVITIES: Read handout "Exploring Drafting – How to Make Isometric and Oblique Drawings"
Begin mechanical drawing of Sheet #13 Isometric Stop Block

EVALUATION: 20 points for completion of Sheet #13 Isometric Stop Block
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 8

TECHNICAL DESIGN

OBJECTIVES: **Day 2** Students will be able to differentiate between isometric, oblique, and orthographic views.
Students will be able to identify drawings as isometric, oblique, and orthographic views.
Students will be able to create an isometric cubes freeform drawing.

ACTIVITIES: Read handout "Exploring Drafting – How to Make Isometric and Oblique Drawings"
Continue mechanical drawing of Sheet #13 Isometric Stop Block

EVALUATION: 20 points for completion of Sheet #13 Isometric Stop Block
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 11

Technical Design

OBJECTIVES: **DAY 1** Students will be able to identify surfaces from a given geometric object from an orthographic view .
Students will be able to identify matching geometric objects in an orthographic view with other views of the object.
Given an isometric view of a geometric object, students will be able to create the correct orthographic and oblique view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: Notes: Define and Identify orthographic, oblique, and isometric
COMPLETE: "Surfaces and Views" handout

EVALUATION: Formal assessment on the completion of the "Surfaces and Views" handout
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent 3-D drawing views exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 12

Technical Design

OBJECTIVES: **DAY 2** Students will be able to identify surfaces from a given geometric object from an orthographic view .
Students will be able to identify matching geometric objects in an orthographic view with other views of the object.
Given an isometric view of a geometric object, students will be able to create the correct orthographic and oblique view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: Notes: Define and Identify orthographic, oblique, and isometric
COMPLETE: "Surfaces and Views" handout

EVALUATION: Formal assessment on the completion of the "Surfaces and Views" handout
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent 3-D drawing views exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 13

Technical Design

OBJECTIVES: **DAY 1** Students will be able to identify surfaces from a given geometric object from an orthographic view .
Students will be able to identify matching geometric objects in an orthographic view with other views of the object.
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: #14 Stop Block Bravo

EVALUATION: Formal assessment on the completion of the #14 Stop Block Bravo
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent 3-D drawing views exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 14

Technical Design

OBJECTIVES: **DAY 2** Students will be able to identify surfaces from a given geometric object from an orthographic view .
Students will be able to identify matching geometric objects in an orthographic view with other views of the object.
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: #14 Stop Block Bravo

EVALUATION: Formal assessment on the completion of the #14 Stop Block Bravo
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent 3-D drawing views exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments

Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 15

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Starting Catch" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #15 Starting Catch

EVALUATION: 20 points for completion of **Sheet #15 Starting Catch**
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 18

TECHNICAL DESIGN

OBJECTIVES: **DAY 2** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Starting Catch" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #15 Starting Catch

EVALUATION: 20 points for completion of Sheet #15 Starting Catch
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 19

TECHNICAL DESIGN

OBJECTIVES: **DAY 3** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Starting Catch" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #15 Starting Catch

EVALUATION: 20 points for completion of Sheet #15 Starting Catch
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 20

TECHNICAL DESIGN

OBJECTIVES: **DAY 1** Students will be able to prepare a drawing board. Students will then appropriately use drawing tools to accurately draw a border, title bar, and the "Isometric Circle" according to specific tolerances and scale. Students will be able to solve for measurements and proficiently use the 30° 60° 90° triangle and the 45° 45° 90° triangle. Students will proficiently and accurately use the compass to create circle and arcs. Students will be able to use and apply all scales on the Architect Scale. Students will be able to draw lines of correct length given any scale or distance.

ACTIVITIES: Begin mechanical drawing of Sheet #16 Isometric Circle

EVALUATION: 20 points for completion of Sheet #16 Isometric Circle
Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent drafting exploration

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 21

Technical Design

OBJECTIVES: **DAY 1** Students will be able to follow specific directions
Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of the "Back-Up Slide".
Students will then be able to will to select a letter and create an ISOMETRIC drawing
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Draw first name or initials in an OBLIQUE drawing form on ¼" isometric graph paper
20 points for completion of Sheet #17 Back-Up Slide (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

December 22

Technical Design

OBJECTIVES: **DAY 2** Students will be able to follow specific directions

Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide".
Students will then be able to will to select a letter and create an ISOMETRIC drawing
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Draw first name or initials in an OBLIQUE drawing form on ¼" isometric graph paper
20 points for completion of Sheet #17 Back-Up Slide (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

MERRY CHRISTMAS!

January 3

Technical Design

OBJECTIVES: **DAY 3** Students will be able to follow specific directions
Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide".
Students will then be able to will to select a letter and create an ISOMETRIC drawing
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"

Draw first name or initials in an OBLIQUE drawing form on ¼" isometric graph paper
20 points for completion of Sheet #17 Back-Up Slide (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 4

Technical Design

OBJECTIVES: **DAY 1** Students will be able to follow specific directions
Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide Orthographic".
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of name or initials
Create an ISOMETRIC drawing of selected letter
Preliminary sketches will be completed on ¼" standard graph paper or ¼" isometric graph paper
20 points for completion of Sheet #18 Back-Up Slide Orthographic (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 5

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide Orthographic".

Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of name or initials
Create an ISOMETRIC drawing of selected letter
Preliminary sketches will be completed on ¼" standard graph paper or ¼" isometric graph paper
20 points for completion of Sheet #18 Back-Up Slide Orthographic (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 8

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide Orthographic".
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of name or initials
Create an ISOMETRIC drawing of selected letter
Preliminary sketches will be completed on ¼" standard graph paper or ¼" isometric graph paper
20 points for completion of Sheet #18 Back-Up Slide Orthographic (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 9

Technical Design

OBJECTIVES: **DAY 4** Students will be able to create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of letter of the "Back-Up Slide Orthographic".
Given an isometric view of a geometric object, students will be able to create the correct orthographic and isometric view sketches.
Students will be able to define and identify orthographic, oblique, and isometric geometric figures.

ACTIVITIES: "Oblique, Orthographic, Isometric Initials"
Create an ORTHOGRAPHIC projection of the TOP, FRONT, and SIDE views of name or initials
Create an ISOMETRIC drawing of selected letter
Preliminary sketches will be completed on ¼" standard graph paper or ¼" isometric graph paper
20 points for completion of Sheet #18 Back-Up Slide Orthographic (on green paper with standard title bar)

EVALUATION: Formal assessment on the completion of the "Oblique, Orthographic, Isometric Initials" project 40 points
The final drawing will be initialed by another student who will have checked the accuracy of the orthographic views and isometric projection

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 10

Technical Design

OBJECTIVES: Students will be able to compete the semester test.

ACTIVITIES: Select one of the two drawings on the semester test.

EVALUATION: Formal assessment on the completion of the semester final.
50 Points

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing and sectional views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 11

Technical Design

OBJECTIVES: **DAY 2** Students will be able to compete the semester test.

ACTIVITIES: Select one of the two drawings on the semester test.

EVALUATION: Formal assessment on the completion of the semester final.
50 Points

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing and sectional views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 12

Technical Design

OBJECTIVES: **DAY 3** Students will be able to compete the semester test.

ACTIVITIES: Select one of the two drawings on the semester test.

EVALUATION: Formal assessment on the completion of the semester final.
50 Points

Informal assessment of daily participation points
Assessment of Clean Up duties

ENRICHMENT: Independent exploration of 3-D drawing and sectional views

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.1.10D, 3.1.12D, 3.2.7B, 3.2.7D, 3.2.10B, 3.2.10D, 3.2.12D, 3.6.7B, 3.7.10A, 3.7.12A, 3.8.12B

January 16

Technical Design

OBJECTIVES: Students will complete the and bind the drawing portfolio.

ACTIVITIES: Collect and organize all of the mechanical drawings. Bind the drawings

EVALUATION: Formal assessment on the completion of the task 10 points.

Informal assessment of daily participation points
Assessment of Clean Up duties

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

January 17

Technical Design

OBJECTIVES: Students will be able to follow directions while cleaning, organizing, and putting away their drawing tools.

ACTIVITIES: clean, organize, and put away drawing tools

EVALUATION: Informal assessment of daily participation points
Assessment of Clean Up duties

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

START OF 2nd SEMESTER
Autodesk Inventor Start

January 18

Technical Design

OBJECTIVES: Students will be able to navigate Autodesk Inventor startup options, unit setup, basic screen layout, user interface, mouse buttons, and on-line help independently.

ACTIVITIES: Book pages 1-7 / 1-14

EVALUATION: Informal assessment of daily participation points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:

January 19

Technical Design

OBJECTIVES: Students will be able to comprehend the new class expectations for using Inventor
Students will be able to use the basic navigation tools for Autodesk Inventor

ACTIVITIES: Binder Introduction

Inventor file rules and procedures
Basic drawing tutorial in Inventor

EVALUATION: Informal assessment of daily participation

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 22

Technical Design

OBJECTIVES: **DAY 2** Students will be able to comprehend the new class expectations for using Inventor
Students will be able to use the basic navigation tools for Autodesk Inventor

ACTIVITIES: Binder Introduction
Inventor file rules and procedures
Basic drawing tutorial in Inventor

EVALUATION: Informal assessment of daily participation

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 23

Technical Design

OBJECTIVES: Students will be able to complete the thinking in 3D warm up.
Students will be able to begin navigation and drawing skills in Inventor by starting Z Bracket

ACTIVITIES: Complete Brain Exercise Visualization #1 – Online Link
Begin Drawing A 1-0 Z Bracket Pages 1-1 / 1-38

EVALUATION: Informal assessment of daily participation
Formal assessment of Brain Visualization #1 16 points
Formal assessment of A 1-0 Z Bracket 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 24

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create simple extruded solid models, use the dynamic viewing commands, and create and edit parametric dimensions.

ACTIVITIES: Complete Brain Exercise Visualization #1 – Online Link
Drawing A 1-0 Z Bracket Pages 1-1 / 1-38

EVALUATION: Informal assessment of daily participation
Formal assessment of Brain Visualization #1 16 points
Formal assessment of A 1-0 Z Bracket 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

January 25

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create simple extruded solid models, use the dynamic viewing commands, and create and edit parametric dimensions.

ACTIVITIES: Drawing A 1-0 Z Bracket Pages 1-1 / 1-38

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing A 1-0 Z Bracket 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 26

Technical Design

OBJECTIVES: **DAY 1** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete Brain Exercise Visualization #2 – Online Link
Choose one exercise to complete: B1-1, B1-2, B1-3

EVALUATION: Informal assessment of daily participation points
Formal assessment of Brain Visualization #2 16 points
Formal assessment of Drawing B1-1, B1-2, B1-3 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 29

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Complete Brain Exercise Visualization #2 – Online Link
Choose one exercise to complete: B1-1, B1-2, B1-3

EVALUATION: Informal assessment of daily participation points
Formal assessment of Brain Visualization #1 16 points
Formal assessment of Drawing B1-1, B1-2, B1-3 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 30

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: B1-1, B1-2, B1-3

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing B1-1, B1-2, B1-3 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

January 31

Technical Design

OBJECTIVES: **DAY 1** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Basic Types of Lines Used in Engineering Drawings' – Online Link
Choose one exercise to complete: C1-4, C1-5, C1-6, C1-7

EVALUATION: Informal assessment of daily participation points
Formal assessment of Basic Types of Lines Used in Engineering Drawings' 18 Points
Formal assessment of Drawing C1-4, C1-5, C1-6, C1-7 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 1

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Complete 'Basic Types of Lines Used in Engineering Drawings' – Online Link
Choose one exercise to complete: C1-4, C1-5, C1-6, C1-7

EVALUATION: Informal assessment of daily participation points
Formal assessment of Basic Types of Lines Used in Engineering Drawings' 18 Points
Formal assessment of Drawing C1-4, C1-5, C1-6, C1-7 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments

Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 2

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: B1-1, B1-2, B1-3

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing C1-4, C1-5, C1-6, C1-7 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 5

Technical Design

OBJECTIVES: **DAY 1** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Basic Elements of Dimensions Used in Engineering Darwings' – Online Link
Choose one exercise to complete: D1-8 or D1-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Basic Elements of Dimensions Used in Engineering' 24 points
Formal assessment of Drawing D1-8 or D1-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 6

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Complete 'Basic Elements of Dimensions Used in Engineering Darwings' – Online Link
Choose one exercise to complete: D1-8 or D1-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Basic Elements of Dimensions Used in Engineering' 24 points
Formal assessment of Drawing D1-8 or D1-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 7

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: D1-8 or D1-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing D1-8 or D1-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional t[redacted]nts
Formal asse
Preferential

PA STANDARDS for Science, Engine
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6[redacted]7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3

February 8

Technical Design

OBJECTIVES: **DAY 1** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: E1-11 or E1-12

EVALUATION: Informal assessment of daily participation points

Formal assessment of Drawing E1-11 or E1-12 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 9

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: E1-11 or E1-12

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing E1-11 or E1-12 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 12

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: E1-11 or E1-12

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing E1-11 or E1-12 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:

3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 13

Technical Design

OBJECTIVES: **DAY 1** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: F1-13 or F1-15

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing F1-13 or F1-15 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 14

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: F1-13 or F1-15

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing F1-13 or F1-15 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 15

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: F1-13 or F1-15

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing F1-13 or F1-15 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 16

TECHNICAL DESIGN

OBJECTIVES: Students will be able to operate and measure with dial calipers with accuracy of +/- .0005
Students will be able to complete the dial caliper activity.

ACTIVITIES: Dial calipers demonstration
Dial calipers measuring activity
https://www.wisc-online.com/learn/career-clusters/manufacturing/msr4303/how-to-read-a-caliper
"Measuring With Dial Calipers" handout

EVALUATION: Formal assessment for the "Measuring With Dial Calipers" handout 25 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring
Measuring game activity at

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

February 20

TECHNICAL DESIGN

OBJECTIVES: Students will be able to operate and measure with digital calipers with accuracy of +/- .0005
Students will be able to complete the digital caliper activity.

ACTIVITIES: Digital calipers demonstration
Digital calipers measuring activity
"Measuring With Digital Calipers" handout

EVALUATION: Formal assessment for the "Measuring With Dial Calipers" handout 22 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring
Measuring game activity at

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating
Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

February 21

TECHNICAL DESIGN

OBJECTIVES: CONTINUED ACTIVITY COMPLETION
Students will be able to operate and measure with digital calipers with accuracy of +/- .0005
Students will be able to complete the digital caliper activity.
Students will be able to operate and measure with dial calipers with accuracy of +/- .0005
Students will be able to complete the dial caliper activity.

ACTIVITIES: Digital calipers measuring activity
"Measuring With Digital Calipers" handout
Dial calipers measuring activity
https://www.wisc-online.com/learn/career-clusters/manufacturing/msr4303/how-to-read-a-caliper
"Measuring With Dial Calipers" handout

EVALUATION: Formal assessment for the "Measuring With Dial Calipers" handout 22 points
Formal assessment for the "Measuring With Dial Calipers" handout 25 points
Informal assessment of participation and completion of class activities, group participation, and cleanup activities for participation points

ENRICHMENT: Independent exploration and application of measuring

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
T /F Safety tests read to all students
Option for students to take formal assessments taken in the Learning Support room
Option for preferential seating

Option for individual guidance
Verbal presentation of reading material by aid when present
Additional time to complete assignments as necessary
Modified Tests & Quizzes
Breaking up larger assignments into smaller manageable pieces

PA STANDARDS for Science, Engineering, and Technology: 3.1.10A, 3.1.7E, 3.2.7A, 3.6.10B, 3.7.10A

1st DESIGN CHALLENGE

START REVERSE ENGINEERING PROJECT: LEGO BRICK

February 22

Technical Design

OBJECTIVES: Students will be able identify the criteria and constraints of the Reverse Engineering project.
Students will be able to sketch an inventory of their parts.

ACTIVITIES: Select Teams
Introduction to the Reverse Engineering project
Sketch the inventory of parts and quantities on graph paper

EVALUATION: Completion of sketched parts inventory 20 points
Informal assessment of daily participation points

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 23

Technical Design

OBJECTIVES: Students will be able to sketch an inventory of their parts.
Students will be able to conduct Internet research on the size of Lego bricks.
Students will be able to determine the exact size of a Lego brick using a formula.
Students will be able accurately measure with a digital caliper.

ACTIVITIES: Complete: Sketch the inventory of parts and quantities on graph paper
Use Internet to research Lego brick size formula
Review of accurately measuring with a digital caliper
Calculate brick sizes and sketch diagram on the board

EVALUATION: Completion of sketched parts inventory 20 points

Informal assessment of daily participation points

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 26

Technical Design

OBJECTIVES: **CONTINUED:** Students will be able to conduct Internet research on the size of Lego bricks.
Students will be able to determine the exact size of a Lego brick using a formula.
Students will be able accurately measure with a digital caliper.

ACTIVITIES: Use Internet to research Lego brick size formula
Accurately measure bricks with a digital caliper
Calculate brick sizes and sketch diagram on the board

EVALUATION: Completion of sketched parts inventory 20 points
Informal assessment of daily participation points

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 27

Technical Design

OBJECTIVES: Students will be able to use Autodesk Inventor and reverse engineering to draw their assigned bricks.
Students will be able accurately measure with a digital caliper.

ACTIVITIES: Accurately measure bricks with a digital caliper
Draw the bricks using Inventor

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 28

Technical Design

OBJECTIVES: Students will be able to set up and use the 3D Printer to print the test parts.
Students will be able to use Autodesk Inventor and reverse engineering to draw their assigned bricks.
Students will be able accurately measure with a digital caliper.

ACTIVITIES: Conduct a test print on the 3D printer
Accurately measure bricks with a digital caliper
Draw the bricks using Inventor

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

February 29

Technical Design

OBJECTIVES: Students will be able to analyze the test parts for proper alignment and fit.
Students will be able to use Autodesk Inventor and reverse engineering to draw their assigned bricks.
Students will be able accurately measure with a digital caliper.

ACTIVITIES: Conduct a test fit for the 3D printer blocks.
Accurately measure bricks with a digital caliper
Draw the bricks using Inventor

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 1

Technical Design

OBJECTIVES: Students will be able to use the 3D printer to print their completed blocks.

ACTIVITIES: Set up and send drawing files to the 3D printer.
Test fit completed blocks.
Double check list of blocks.

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 4

Technical Design

OBJECTIVES: CONTINUED: Students will be able to use the 3D printer to print their completed blocks.

ACTIVITIES: Set up and send drawing files to the 3D printer.
Test fit completed blocks.
Double check list of blocks.

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 5

Technical Design

OBJECTIVES: CONTINUED: Students will be able to use the 3D printer to print their completed blocks.

ACTIVITIES: Set up and send drawing files to the 3D printer.
Test fit completed blocks.
Double check list of blocks.

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for every completed part

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 6

Technical Design

OBJECTIVES: **DAY 1** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Basic Symbols Used in Engineering Drawings'– Online Link
Choose one exercise to complete: G2-0 V Disc

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Basic Symbols Used in Engineering Drawings' 22 points
Formal assessment of Drawing G2-0 V Disc 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 7

Technical Design

OBJECTIVES: **DAY 2** Students will be able to complete the thinking in 3D warm up.

Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Basic Symbols Used in Engineering Drawings'– Online Link
Choose one exercise to complete: G2-0 V Disc

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Basic Symbols Used in Engineering Drawings' 22 points
Formal assessment of Drawing G2-0 V Disc 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 8

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: G2-0 V Disc

EVALUATION: Formal assessment of Drawing G2-0 V Disc 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 11

Technical Design

OBJECTIVES: **DAY 4** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: G2-0 V Disc

EVALUATION: Formal assessment of Drawing G2-0 V Disc 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room

Preferential seating

PA STANDARDS for Science, Engineering, and Technology:

March 12

Technical Design

OBJECTIVES: **DAY 1** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Brain Exercise Visualization #3 – Online Link
Choose one exercise to complete: H2-2

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Brain Exercise Visualization #3' 16 points
Formal assessment of Drawing H2-2 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 13

Technical Design

OBJECTIVES: **DAY 2** Students will be able to complete the thinking in 3D warm up.
Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Complete 'Brain Exercise Visualization #3 – Online Link
Choose one exercise to complete: H2-2

EVALUATION: Informal assessment of daily participation points
Formal assessment of 'Brain Exercise Visualization #3' 16 points
Formal assessment of Drawing H2-2 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 14

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: H2-2

EVALUATION: Formal assessment of Drawing H2-220 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 15

Technical Design

OBJECTIVES: **DAY 1** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: J2-3 or J2-4

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing J2-3 or J2-4 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 18

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: J2-3 or J2-4

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing J2-3 or J2-4 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 19

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: J2-3 or J2-4

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing J2-3 or J2-4 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 20

Technical Design

OBJECTIVES: **DAY 1** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: K2-8

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing K2-8 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 21

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: K2-8

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing K2-8 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 22

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: K2-8

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing K2-8 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 25

Technical Design

OBJECTIVES: **DAY 1** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: L2-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing L2-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 26

Technical Design

OBJECTIVES: **DAY 2** Students will be able to create a solution to the exercise drawing.

ACTIVITIES: Choose one exercise to complete: L2-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing L2-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

March 27

Technical Design

OBJECTIVES: **DAY 3** Students will be able to create a solution to the exercise drawing

ACTIVITIES: Choose one exercise to complete: L2-10

EVALUATION: Informal assessment of daily participation points
Formal assessment of Drawing L2-10 20 points

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:

3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

STRING LEVEL DESIGN CHALLENGE

April 3

Technical Design

OBJECTIVES: **DAY 1:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 4

Technical Design

OBJECTIVES: **DAY 2:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 5

Technical Design

OBJECTIVES: **DAY 3:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 8

Technical Design

OBJECTIVES: **DAY 4:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 9

Technical Design

OBJECTIVES: **DAY 5:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 10

Technical Design

OBJECTIVES: **DAY 6:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 11

Technical Design

OBJECTIVES: **DAY 7:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 12

Technical Design

OBJECTIVES: **DAY 8:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 15

Technical Design

OBJECTIVES: **DAY 9:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 16

Technical Design

OBJECTIVES: **DAY 10:** Students will be able to use Autodesk Inventor and the String Level Design Challenge design brief directions to design a solution that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will draw the bubble vial according to digital caliper measurements. Using AutoDesk Inventor, students will design the string level according to the design criteria. Students will create two separate dimensioned orthographic drawings of the bubble vial and the string level design. Students will use the 3D printer to print up to three iterations of the string level design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Bubble Vial drawing dimensioned orthographic drawing
20 Point formal assessment for completion of the String Level dimensioned orthographic drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

Mini Vehicle Project
Design Challenge

April 17

Technical Design

OBJECTIVES: **INTRODUCTION** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Sketch orthographically the front, side, top, and rear views of the vehicle and submit for grading and approval.

EVALUATION: Informal assessment of daily participation points
10 Point formal assessment for completion of orthographic sketch

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 18

Technical Design

OBJECTIVES: **Day 1** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the wheels according to the design criteria. Students will create a dimensioned orthographic drawing of the wheel design. Students will use the 3D printer to print up to three iterations of the wheel design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Wheel Drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 19

Technical Design

OBJECTIVES: **DAY 2:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the wheels according to the design criteria. Students will create a dimensioned orthographic drawing of the wheel design. Students will use the 3D printer to print up to three iterations of the wheel design.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Wheel Drawing

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 22

Technical Design

OBJECTIVES: **Day 3** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 23

Technical Design

OBJECTIVES: **DAY 4:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the

frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 24

Technical Design

OBJECTIVES: **DAY 5:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 25

Technical Design

OBJECTIVES: **DAY 6:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 26

Technical Design

OBJECTIVES: **DAY 7:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 29

Technical Design

OBJECTIVES: **DAY 8:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

April 30

Technical Design

OBJECTIVES: **DAY 9:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 1

Technical Design

OBJECTIVES: **DAY 10:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 2

Technical Design

OBJECTIVES: **DAY 11:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 3

Technical Design

OBJECTIVES: **DAY 12:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 6

Technical Design

OBJECTIVES: **DAY 13:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 7

Technical Design

OBJECTIVES: **DAY 14:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the

frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 8

Technical Design

OBJECTIVES: **DAY 15:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 9

Technical Design

OBJECTIVES: **DAY 16:** Students will be able to use Autodesk Inventor and the Mini Vehicle Project Design Challenge design brief directions to design a vehicle that meets the specific criteria for the challenge. Students will apply the Engineering Design

ACTIVITIES: Using AutoDesk Inventor, students will design the vehicle frame and body according to the design criteria. Students will create two separate dimensioned orthographic drawings of the frame and body designs. Students will use the 3D printer to print up to three iterations of the frame and body designs.

EVALUATION: Informal assessment of daily participation points
20 Point formal assessment for completion of the Frame Design
20 Point formal assessment for completion of the Body Design

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 10

Technical Design

OBJECTIVES: **Day 1** Students will be able to use Autodesk Inventor to complete the final drawing test

ACTIVITIES: Using AutoDesk Inventor, students will select on of the two final drawing to complete. One drawing is in impereal measurments and the other is in metric measurements.

EVALUATION: Informal assessment of daily participation points
100 point final test

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 13

Technical Design

OBJECTIVES: **Day 2** Students will be able to use Autodesk Inventor to complete the final drawing test

ACTIVITIES: Using AutoDesk Inventor, students will select on of the two final drawing to complete. One drawing is in impereal measurments and the other is in metric measurements.

EVALUATION: Informal assessment of daily participation points
100 point final test

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 14

Technical Design

OBJECTIVES: **Day 3** Students will be able to use Autodesk Inventor to complete the final drawing test

ACTIVITIES: Using AutoDesk Inventor, students will select on of the two final drawing to complete. One drawing is in impereal measurments and the other is in metric measurements.

EVALUATION: Informal assessment of daily participation points
100 point final test

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 15

Technical Design

OBJECTIVES: **Day 4** Students will be able to use Autodesk Inventor to complete the final drawing test

ACTIVITIES: Using AutoDesk Inventor, students will select on of the two final drawing to complete. One drawing is in impereal measurments and the other is in metric measurements.

EVALUATION: Informal assessment of daily participation points
100 point final test

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 16

Technical Design

OBJECTIVES: **Day 5** Students will be able to use Autodesk Inventor to complete the final drawing test

ACTIVITIES: Using AutoDesk Inventor, students will select on of the two final drawing to complete. One drawing is in impereal measurments and the other is in metric measurements.

EVALUATION: Informal assessment of daily participation points
100 point final test

ENRICHMENT: Independent exploration of reverse engineering

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

PA STANDARDS for Science, Engineering, and Technology:
3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B

May 17

Technical Design

OBJECTIVES: **CONTINUED:** Students will design a title page with their name with the letters extruded to .10
Students will be able to set up and print to the large format printer using the set parameters.
Students will be able to set up and use the binding machine on their printed drawings.

ACTIVITIES: Students will use Inventor to design a cover page and extrude the letters to .10. The name will be placed only isometrically on the printed title page with the standard border and title bar. Students will print all of their drawings and documents for the 3rd 9 weeks. Students will bind all of their printed drawings and submit for grading.

EVALUATION: Informal assessment of daily participation points
Formal assessment of completed and bound drawings.

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B
PA STANDARDS for Science, Engineering, and Technology:

May 20

Technical Design

OBJECTIVES: **CONTINUED:** Students will design a title page with their name with the letters extruded to .10
Students will be able to set up and print to the large format printer using the set parameters.
Students will be able to set up and use the binding machine on their printed drawings.

ACTIVITIES: Students will use Inventor to design a cover page and extrude the letters to .10. The name will be placed only isometrically on the printed title page with the standard border and title bar. Students will print all of their drawings and documents for the 3rd 9 weeks. Students will bind all of their printed drawings and submit for grading.

EVALUATION: Informal assessment of daily participation points
Formal assessment of completed and bound drawings.

ENRICHMENT: Independent exploration of CAE

ACCOMMODATIONS: Additional time to complete tasks / tests / quizzes / assignments
Formal assessments taken in the Learning Support room
Preferential seating

3.2.7B, 3.2.7D, 3.2.10D, 3.2.12A, 3.6.7A, 3.6.7B, 3.6.10B, 3.6.12B, 3.6.12C, 3.7.7B, 3.7.7C, 3.7.7D, 3.7.10A, 3.7.10B, 3.7.10C, 3.7.10D, 3.7.12A, 3.7.12B, 3.7.12C, 3.8.12B
PA STANDARDS for Science, Engineering, and Technology: