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Computer Aided Design I

1. **Visualization (8.33%)**

Learning Targets

1.1 **I can compare and contrast different drawing styles.**

Learning Target	Descriptor	Definition
4	Proficient	I can compare and contrast different drawing styles.
3	Developing	I can identify the different drawing styles.
2	Basic	I can identify some of the different drawing styles.
1	Minimal	I can identify a few of the different drawing styles.
0	No Evidence	No evidence shown.

1.2 **I can interpret and convert a 3D part into a multi-view 2D Drawing without error.**

Learning Target	Descriptor	Definition
4	Proficient	I can interpret and convert a 3D part into a multi-view 2D Drawing without error.
3	Developing	I can convert a 3D part into a multi-view 2D Drawing with a few errors.
2	Basic	I can convert a 3D part into a multi-view 2D Drawing with many errors and some help.
1	Minimal	I can convert a 3D part into a multi-view 2D with help.
0	No Evidence	No evidence shown.

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2. **Measurement and Scale (8.33%)**

Learning Targets

2.1 **I can accurately measure all samples to the nearest 1/16 of an inch.**

Learning Target	Descriptor	Definition
4	Proficient	I can accurately measure all samples to the nearest 1/16 of an inch.
3	Developing	I can accurately measure most samples to the nearest 3/32 of an inch.
2	Basic	I can accurately measure most samples to the nearest 1/8 of an inch but with help.
1	Minimal	I can accurately measure a few samples to the nearest 5/32 of an inch but with help.
0	No Evidence	No evidence shown.

2.2 **I can demonstrate and understand the use of scale to resize a drawing.**

Learning Target	Descriptor	Definition
4	Proficient	I can demonstrate and understand the use of scale to resize a drawing.
3	Developing	I can demonstrate the use of scale to resize a drawing.
2	Basic	I can demonstrate the use of scale to resize a drawing with a few errors.
1	Minimal	I can demonstrate the use of scale to resize a drawing with a few errors and with help.
0	No Evidence	No evidence shown.

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3. **Dimensioning by Hand - Block Drawings (8.33%)**

Learning Targets

3.1 I can understand and demonstrate the basic ANSI rules for dimensioning a hand drawn technical drawing without error.

Learning Target	Descriptor	Definition
4	Proficient	I can understand and demonstrate the basic ANSI rules for dimensioning a hand drawn technical drawing without error.
3	Developing	I can demonstrate the basic ANSI rules for dimensioning a hand drawn technical drawing with some errors.
2	Basic	I can demonstrate the basic ANSI rules for dimensioning a hand drawn technical drawing with many errors.
1	Minimal	I can demonstrate the basic ANSI rules for dimensioning a hand drawn technical drawing with many errors or with help.
0	No Evidence	No evidence shown.

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4. CAD AutoDesk Inventor - Block drawings (8.33%)

Learning Targets

4.1 I can identify, understand and apply the standard buttons and options of the software being used without error.

Learning Target	Descriptor	Definition
4	Proficient	I can identify, understand and apply the standard buttons and options of the software being used without error.
3	Developing	I can identify the standard buttons and options of the software being used.
2	Basic	I can identify some of the standard buttons and options of the software being used.
1	Minimal	I can identify a few of the standard buttons and options of the software being used with help.
0	No Evidence	No evidence shown.

4.2 I can understand and demonstrate the basic ANSI rules for dimensioning a computer generated technical drawing without error.

Learning Target	Descriptor	Definition
4	Proficient	I can understand and demonstrate the basic ANSI rules for dimensioning a computer generated technical drawing without error.
3	Developing	I can demonstrate the basic ANSI rules for dimensioning a computer generated technical drawing with some errors.
2	Basic	I can demonstrate the basic ANSI rules for dimensioning a computer generated technical drawing with many errors.
1	Minimal	I can demonstrate the basic ANSI rules for dimensioning a computer generated technical drawing with many errors or with help.
0	No Evidence	No evidence shown.

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5. AD AutoDesk Inventor 50 series - Angular and Circular Tools with Mirror Tool (8.37%)

Learning Targets

5.1 I can accurately create several 3D shapes using CAD software given a 3D or 2D drawing with circular and angle drawing tools. These drawings (.IDW) will reflect ANSI specifications for angles and circular features without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create several 3D shapes using CAD software given a 3D or 2D drawing with circular and angle drawing tools. These drawings (.IDW) will reflect ANSI specifications for angles and circular features without error.
3	Developing	I can create several 3D shapes using CAD software given a 3D or 2D drawing with circular and angle drawing tools. These drawings (.IDW) will reflect ANSI specifications for angles and circular features with some (2-3) errors.
2	Basic	I can create several 3D shapes using CAD software given a 3D or 2D drawing with circular and angle drawing tools. These drawings (.IDW) will reflect ANSI specifications for angles and circular features with some (4-5) errors.
1	Minimal	I can create several 3D shapes using CAD software given a 3D or 2D drawing with circular and angle drawing tools. These drawings (.IDW) will reflect ANSI specifications for angles and circular features but with many (6-8) errors.
0	No Evidence	No evidence shown.

6. CAD AutoDesk Inventor 60 series drawings - Pattern Tools (8.33%)

Learning Targets

6.1 I can accurately create several 3D shapes using Pattern and Offset Tools. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create several 3D shapes using Pattern and Offset Tools. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.
3	Developing	I can create several 3D shapes using Loft, Rib, and Pattern Tools. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with some (2-3) errors.
2	Basic	I can create several 3D shapes using Loft, Rib, and Pattern Tools. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with some (4-5) errors.
1	Minimal	I can create several 3D shapes using Loft, Rib, and Pattern Tools. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) but with many (6-8) errors.
0	No Evidence	No evidence shown.

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7. **CAD AutoDesk Inventor 70 series drawings - Work Planes (8.33%)**

Learning Targets

7.1 I can accurately create several 3D models using work planes These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create several 3D models using work planes These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.
3	Developing	I can create several 3D models using work planes. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with some (2-3) errors.
2	Basic	I can create several 3D models using work planes. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with many (4-5) errors.
1	Minimal	I can create several 3D models using work planes. These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) but with many (6-8) errors.
0	No Evidence	No evidence shown.

8. **CAD AutoDesk Inventor Bell Project – Revolve and Assemble (8.33%)**

Learning Targets

8.1 I can accurately create several 3D models using basic Tools and combine into an assembly (.IAM). These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create several 3D models using basic Tools and combine into an assembly (.IAM). These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) without error.
3	Developing	I can create several 3D models using basic Tools and combine into an assembly (.IAM). These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with some (2-3) errors.
2	Basic	I can create several 3D models using basic Tools and combine into an assembly (.IAM). These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) with many (4-5) errors.
1	Minimal	I can create several 3D models using basic Tools and combine into an assembly (.IAM). These drawings will reflect ANSI specifications for dimensioning and layout (.IDW) but with many (6-8) errors.
0	No Evidence	No evidence shown.

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9. CAD AutoDesk Inventor Tetris Project (8.33%)

Learning Targets

9.1 I can accurately create several 3D models using basic tools and combine into an assembly (.IAM). Then explode the assembly using an animation feature (.IPT) that clearly communicates all elements.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create several 3D models using basic tools and combine into an assembly (.IAM). Then explode the assembly using an animation feature (.IPT) that clearly communicates all elements.
3	Developing	I can create several 3D models using basic tools and combine into an assembly (.IAM). The exploded animation is missing some features that would help communicate the assembly.
2	Basic	I can create several 3D models using basic tools and combine into an assembly (.IAM). The exploded animation is missing several (4-5) features that would help communicate the assembly.
1	Minimal	I can create several 3D models using basic tools and combine into an assembly (.IAM). The exploded animation is missing many features (6-8) that would help communicate the assembly.
0	No Evidence	No evidence shown.

10. CAD AutoDesk Inventor Reverse Engineering Project (8.33%)

Learning Targets

10.1 I can accurately measure and create all the models for the product (.IPT). Drawings have fully constrained sketches, use efficient strategies and centered on XY or Z axis.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately measure and create all the models for the product (.IPT). Drawings have fully constrained sketches, use efficient strategies and centered on XY or Z axis.
3	Developing	I can measure and create all the models for the product (.IPT). Some drawings may have fully constrained sketches, use efficient strategies or centered on XY or Z axis.
2	Basic	I have measurement errors and drawings may not have fully constrained sketches, use efficient strategies or centered on XY or Z axis.
1	Minimal	I have many measurement errors and drawings do not have fully constrained sketches, use efficient strategies or centered on XY or Z axis.
0	No Evidence	No evidence shown.

10.2 I can accurately dimension one major part (.IDW) of the product following ANSI specifications without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately dimension one major part (.IDW) of the product following ANSI specifications without error.

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Learning Target	Descriptor	Definition
3	Developing	I can dimension one major part (.IDW) of the product following ANSI specifications with a few (1-2) errors.
2	Basic	I can dimension one major part (.IDW) of the product following ANSI specifications with some (3-5) errors.
1	Minimal	I can dimension one major part (.IDW) of the product following ANSI specifications with many (6-9) errors.
0	No Evidence	No evidence shown.

10.3 I can accurately assemble all parts (.IAM) fully using constraints and dimension the assembly of the product following ANSI specifications without error.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately assemble all parts (.IAM) fully using constraints and dimension the assembly of the product following ANSI specifications without error.
3	Developing	I can assemble all parts (.IAM) using many constraints and dimension the assembly of the product following ANSI specifications with a few (1-2) errors.
2	Basic	I can assemble all parts (.IAM) using some constraints and dimension the assembly of the product following ANSI specifications with some (3-5) errors.
1	Minimal	I can assemble all parts (.IAM) using a few constraints and dimension the assembly of the product following ANSI specifications with many (6-9) errors.
0	No Evidence	No evidence shown.

10.4 I can explode all parts (.IPT) and animate the product simple movement, some turning OR not at an appropriate pace and scale to communicate. Avoids collisions with other parts.

Learning Target	Descriptor	Definition
4	Proficient	I can explode all parts (.IPT) and animate the product simple movement, some turning OR not at an appropriate pace and scale to communicate. Avoids collisions with other parts.
3	Developing	The exploded animation includes simple movement, some turning OR not at an appropriate pace and scale to communicate. Avoids collisions with other parts.
2	Basic	The exploded animation includes simple movement, some turning OR not at an appropriate pace and scale to communicate. Some collisions with other parts.
1	Minimal	The exploded animation has many missing elements and some collisions which prevent clear communication.
0	No Evidence	No evidence shown.

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11. **Three Dimensional Printing Project (8.33%)**

Learning Targets

11.1 I can accurately create a model from instructor supplied product (.IPT) and add a functional custom feature.

Learning Target	Descriptor	Definition
4	Proficient	I can accurately create a model from instructor supplied product (.IPT) and add a functional custom feature.
3	Developing	The model may not be accurate or the feature may not be functional.
2	Basic	The model may not be accurate and the feature may not be functional.
1	Minimal	The model is the only item produced.
0	No Evidence	No evidence shown.

11.2 I can recognize improvements that will increase the value of the product and increase efficiency of the printing process.

Learning Target	Descriptor	Definition
4	Proficient	I can recognize improvements that will increase the value of the product and increase efficiency of the printing process.
3	Developing	I can recognize improvements that will increase the value of the product or increase efficiency of the printing process.
2	Basic	I can suggest improvements that will not increase the value of the product nor increase efficiency of the printing process.
1	Minimal	I cannot recognize any improvements .
0	No Evidence	No evidence shown.

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12. **New Technologies in Computer Aided Design (8.33%)**

Learning Targets

12.1 **I can recognize and describe many pros and cons of a new technology.**

Learning Target	Descriptor	Definition
4	Proficient	I can recognize and describe many pros and cons of a new technology.
3	Developing	I can recognize and describe a few pros and cons of a new technology.
2	Basic	I can only name a few pros and cons of a new technology.
1	Minimal	I can only name a pro or a con of a new technology.
0	No Evidence	No evidence shown.

Submitted on 6/21/2021 by