Moon Area School District Curriculum Map

Course: Engineering Design 1 Honors
Grade Level: 9-12
Content Area: Technology Education
Frequency: Full-Year Course

Big Ideas

1. Sketching
2. Orthographic Projection
3. Inventor Introduction
4. Puzzle Cube Project
5. Desktop Organizer Project
6. Reverse Engineering Project
7. Hydraulic Arm Project
8. Jar Opener Project

Essential Questions

9. What is the importance of sketching design?
10. Why does industry use orthographic projection drawings?
11. What are the benefits of drawing a 3-D model?
12. How can following design criteria help achieve a unit standard?
13. Why is knowing multiple ways to complete a task important?
14. How is Reverse Engineering a design used in Industry?
15. How do hydraulics work?
16. How is engineering used for designing new biotechnology?
17. How can a portfolio be useful in the future?

Primary Resource(s) & Technology:
Textbook Series, IXL online software,
Microsoft Teams, Promethean Boards, Student Laptops/iPads

Pennsylvania and/or focus standards referenced at:
www.pdesas.org
www.education.pa.gov

Big Ideas/EQs	Focus Standard(s)	Assessed Competencies (Key content and skills)	Timeline
1,9	Waiting for new Technology Ed	• 2-D sketching techniques, Isometric sketching, Measurement review	August - September

	standards to be finalized		
2,10		• Orthographic Projection, Multiview Drawings, Centering a Multiview, Counter bores and Countersinks	October
3,11		• Inventor file types, sketching tools, planes,	November
4,12,17		• Portfolio introduction, Inventor Extrusions, design constraints	December
5,13,17		• Inventor features revolve, sweep, loft, coil, shell,	January-February
6,14,17		• Precision measuring tools, .STL files, 3D printer basics	March
7,15,17		• Machine and Tool Safety, hydraulic systems,	April
8,16,17		• Simple machines, biomedical engineering design	May