

**Technology Education Standards**

**7th Grade**

**Course Overview:** This course will allow your students to begin to learn the function of machines and use their knowledge of them to begin to solve technology problems.  The course is designed to build a student’s confidence in using equipment so they can use equipment while solving technological problems.

**Bold standards are essential standards that all students will learn as they complete the course.**

**Unit 1: Safety Unit (4 day and ongoing)**

**Description:**  Learn what we must know to insure everyone’s safety in the lab

**Standards:**

1. **The students will be able to demonstrate proper use of cloths and personal protection equipment (PPE). MNFI.a.7.h**
2. The students will be able to demonstrate proper safe operation practices in the lab area. MNFI.a.7.h
3. The students will be able to demonstrate proper “Work Zone “operation. MNFI.a.7.h
4. The students will be able to demonstrate proper use of precautionary putting away flammables. MNFI.a.7.h, MNFI.g.11.h
5. **The students will be able to safely demonstrate the proper use of all shop tools and equipment (maintain a personal safety license). MNFI.a.7.h**
6. Take the responsibility to get trained on the safe and proper operation of all Fab Lab equipment. ENG 5.a.4.m

**Unit 2:  Machine Functions (4-5 weeks, ongoing)**

**Description:** The unit will cover the proper setup and safe proper use of any woods lab equipment needed to produce a desired project.

**Standards:**

1. **The students will be able to properly operate a radial saw MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
2. **The students will be able to properly operate surface planer MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
3. **The students will be able to properly operate the jointer MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
4. **The students will be able to properly operate the table saw MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
5. **The students will be able to properly operate the miter saw MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
6. **The students will be able to properly operate the drill press MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**
7. **The students will be able to use woodworking portable and hand tools MNFI.a.7.h, ENG 5.b.4.m, ENG5.b.5.m**

**Unit 3: Mass Producing a class project. (4 -5 weeks)**

**Description:** This unit will develop the students’ abilities to use equipment in the Technology Lab to design, build and produce projects.

**Standards:**

1. **The students will be able to communicate technical ideas using proper technical drawings. ENG4.a.3m, ENG2.a.4.m**
2. The Students will be able to draw orthographic projections and isometric drawings ENG4.a.4.m
3. The students will be able to design and draw to scale a class project ICT1.a.10.m
4. The students will be able to identify mass production principles MNF1.e.5.m
5. **The students will be able to demonstrate their ability to use mass production techniques to participate in producing parts for a class project MNF1.f6.m, MNF1.c.4.m**
6. The students will be able to customize the final assembly of their own stool from mass-produced parts
7. The students will be able to customize their stool using design software and an engraving laser MNF1.h.5.m, ENG5.b.5m

**Unit 4: Technology Problem Solving (7 weeks)**

**Description:** Students will use problem-solving techniques to solve real-world situations.

**Standards:**

1. The students will be able to identify the steps of the Technological Problem Solving Method ENG3.b.3.m, ENG2a.5.m, ENG2.a.3.m
2. **The students will be able to apply the steps of the problem-solving method on a structure problem ENG4.b.3.m, ENG2.b.3.m, ENG1.a.7.m**
3. The students will be able to use equipment to design and build, through problem-solving, a bridge structure MNF1.b.3.m, ENG4.c.5.m