

**Course:** *Metalworking: Welding and Assembly*  
**Unit #1:** *Safety*

**Year of Implementation:** 2023-2024

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## Stage One - Desired Results

**Link(s) to New Jersey Student Learning Standards for this course:**

<https://www.state.nj.us/education/cccs/2020/>

[https://www.nj.gov/education/standards/clicks/Docs/2014\\_9.3\\_21LifeAndCareers.pdf](https://www.nj.gov/education/standards/clicks/Docs/2014_9.3_21LifeAndCareers.pdf)

[https://www.nj.gov/education/standards/ela/Docs/2016NJSLs-ELA\\_Companion9-10.pdf](https://www.nj.gov/education/standards/ela/Docs/2016NJSLs-ELA_Companion9-10.pdf)

[https://www.nj.gov/education/standards/ela/Docs/2016NJSLs-ELA\\_Companion11-12.pdf](https://www.nj.gov/education/standards/ela/Docs/2016NJSLs-ELA_Companion11-12.pdf)

- **Unit Standards:**

- **21st Century Life & Career Standards**

- 9.3.MN.3 Comply with federal, state and local regulations to ensure worker safety and health and environmental work practices.
- 9.3.MN-HSE.1 Demonstrate the safe use of manufacturing equipment.
- 9.3.MN-HSE.2 Develop safety plans for production processes that meet health, safety and environmental standards.
- 9.2.12.CAP.2: Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
- 9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth.
- **NJ Statutes:** NJ State law mandates the inclusion of the following topics in lesson design and instruction as aligned to elementary and secondary curriculum.

Amistad Law: N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Holocaust Law: N.J.S.A. 18A:35-28 Every board of education shall include instruction on the Holocaust and genocides in an appropriate place in the curriculum of all elementary and secondary school pupils. The instruction shall further emphasize the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

LGBT and Disabilities Law: N.J.S.A. 18A:35-4.35 A board of education shall include instruction on the political, economic, and social contributions of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum of middle school and high school students as part of the district's implementation of the New Jersey Student Learning Standards (N.J.S.A. 18A:35-4.36) A board of education shall have policies and procedures in place pertaining to the selection of instructional materials to implement the requirements of N.J.S.A. 18A:35-4.35.

Diversity and Inclusion (N.J.S.A. 18A:35-4.36a) A board of education shall incorporate instruction on diversity and inclusion in an appropriate place in the curriculum of students in grades kindergarten through 12 as part of the district's implementation of the New Jersey Student Learning Standards.

Asian American and Pacific Islanders (AAPI) P.L.2021, c.410 Ensures that the contributions, history, and heritage of Asian Americans and Pacific Islanders (AAPI) are included in the New Jersey Student Learning Standards (NJSLS) for Social Studies in kindergarten through Grade 12 (P.L.2021, c.416)

For additional information, see

**NJ Amistad Curriculum:** <http://www.njamistadcurriculum.net/>

**Diversity and Inclusion:** <https://www.nj.gov/education/standards/dei/index.shtml>

- (Sample Activities/ Lessons): <https://www.nj.gov/education/standards/dei/samples/index.shtml>

**Asian American and Pacific Islanders:**

- [Asian American and Pacific Islander Heritage and History in the U.S.](#)

*A Teacher's Guide from EDSITEment offering a collection of lessons and resources for K-12 social studies, literature and arts classrooms that center around the experiences, achievements and perspectives of Asian Americans and Pacific Islanders across U.S. history.*

**Transfer Goal:** Students will be able to independently use their learning to apply safe working practices to their everyday work routines in a manufacturing setting.

As aligned with LRHSD Long Term Learning Goal(s):

- acquire, integrate, and apply design processes and essential technical skills to solve problems, create products, and improve the quality of life for our local and global community.

Enduring Understandings

Students will understand that. . .

*EU1*

the implementation of proper safety procedures will minimize potential hazards.

*EU 2*

each tool and piece of equipment has a specific set of operations.

Essential Questions

*EU1*

- Why is safety important?
- How does behavior affect safety?
- How does the maintenance of tools and machines impact safety?
- How does classroom environment influence safety?
- How can a hazardous situation in the classroom be safely resolved?

*EU 2*

- How does the condition of tools and machines impact safety?
- Why does the sequence of operations for each tool or piece of equipment matter?
- When is it not wise to use a given tool or piece of equipment?

Knowledge

Skills

Students will know. . .

*EU1*

- proper classroom expectations (attire, behavior, procedures, etc.). (9.3.MN.3)
- the form, function, and safe application of hand tools and power tools. (9.3.MN-HSE.1)
- the form, function, and safe application of electricity. (9.3.MN.3, 9.3.MN-HSE.1)

*EU 2*

- the form, function, and safe application of hand tools. (9.3.12.AC-CST.9)
- the form, function, and safe application of power tools. (9.3.12.AC-CST.9)
- the proper sequence of operations for each tool. (9.3.MN-PPD.3)

Students will be able to. . .

*EU1*

- demonstrate proper general lab safety. (9.3.MN.3)
- identify the correct personal protective equipment to be worn in specific manufacturing situations. (9.3.MN.3)
- demonstrate the proper safety, form and function of hand tools and power tools. (9.3.MN-H SE.1, 9.3.MN-HSE.2)
- select the appropriate tool for a required task. (9.3.MN-HSE.2)
- identify unsafe conditions and carry out appropriate corrective measures. (9.3.MN-HSE.2)

*EU 2*

- demonstrate the proper safety and function of hand and power tools. (9.3.12.AC-CST.9)
- select the appropriate tool for a required task.(9.3.12.AC-CST.9)

**Stage Two - Assessment**

**Stage Three - Instruction**

***Learning Plan:*** Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer. The following color codes are used to notate activities that correspond with interdisciplinary connections and 21st Century Life & Career Connections (which involves Technology Literacy): Red = Interdisciplinary Connection; Purple = 21st Century Life & Career Connection

- Teacher led discussions and demonstrations on safety of hand and power tool use. (A) (EU1)
- Read materials on the proper use and safe practices for handling welding equipment. (A) (EU1)
- Practice new skill-sets on hand tools, power tools, and machinery. (M) (EU1)
- Student presentations to demonstrate proper knowledge of safety and familiarity with proper uses of tools and machines. (M,T) (EU1)
- Modeling of hand/power tool/machinery usage throughout the year. (M,T) (EU1, EU2)

### Pacing Guide

<b>Unit #</b>	<b>Title of Unit: Safety</b>	<b>Approximate # of teaching days</b>
1	Safety	40
2	Mechanical Fasteners	30
3	Welding, Soldering and Brazing	110

<b>Instructional Materials</b>
<i>Fully Equipped metal shop</i>

*Fully Equipped metal shop*

<b>Accommodations</b>
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*Special Education:* The curriculum will be modified as per the Individualized Education Plan (IEP). Students will be accommodated based on specific accommodations listed in the IEP.

*Students with 504 Plans:* Students will be accommodated based on specific accommodations listed in the 504 Plan.

*English Language Learners:* Students will be accommodated based on individual need and in consultation with the ELL teacher.

*Students at Risk of School Failure:* Students will be accommodated based on individual need and provided various structural supports through their school.

*Gifted and Talented Students:* Students will be challenged to enhance their knowledge and skills through acceleration and additional independent research on the subject matter.