



# CW High School

## SMAW/GMAW

### 1. SMAW welds (40.00%)

#### Learning Targets

1.1 I can perform MULTIPLE pass V-GROOVE welds on a BUTT joint in the HORIZONTAL position, and assess the basic welding flaws. The welds are consistent with QC-10 VISUAL inspection.

Learning Target	Descriptor	Definition
4	Proficient	I can perform MULTIPLE pass V-GROOVE welds on a BUTT joint in the HORIZONTAL position, and assess the basic welding flaws. The welds are consistent with QC-10 VISUAL inspection.
3	Developing	The weld passes all visual criteria except for face reinforcement height or undercut, but not both.
2	Basic	The weld passes all visual criteria except for face reinforcement height and undercut.
1	Minimal	I can produce the complete weld but it is has major discontinuities.
0	No Evidence	No evidence shown.

1.2 I can perform MULTIPLE pass V-GROOVE welds on a BUTT joint in the VERTICAL position, and assess the basic welding flaws. The welds are consistent with QC-10 MECHANICAL inspection.

Learning Target	Descriptor	Definition
4	Proficient	I can perform MULTIPLE pass V-GROOVE welds on a BUTT joint in the VERTICAL position, and assess the basic welding flaws. The welds are consistent with QC-10 MECHANICAL inspection.
3	Developing	The weld coupons are bent, one passes, and one fails with minor discontinuities.
2	Basic	The weld coupons are bent, one passes, and one fails with major discontinuities or breaks in half.
1	Minimal	Both weld coupons fail the bend test, but one has only a minor discontinuities.
0	No Evidence	No evidence shown.

### 2. Metallurgy (10.00%)

#### Learning Targets

2.1 I can explain the origin, manufacture, and composition of steel.

Learning Target	Descriptor	Definition
4	Proficient	I can explain the origin, manufacture, and composition of steel.
3	Developing	I can explain the origin, manufacture, and composition of steel with a few missing details
2	Basic	I can explain the origin, manufacture, and composition of steel with several missing details
1	Minimal	I can explain the origin, manufacture, or composition of steel, but not all three.



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Learning Target	Descriptor	Definition
0	No Evidence	No evidence shown.

### 2.2 I can describe the characteristics of ferrous and nonferrous metals and identify the molecular structure of metals.


Learning Target	Descriptor	Definition
4	Proficient	I can describe the characteristics of ferrous and nonferrous metals and identify the molecular structure of metals.
3	Developing	I can describe the characteristics of ferrous and nonferrous metals and identify the molecular structure of metals with a few missing details.
2	Basic	I can partially describe the characteristics of ferrous and nonferrous metals and identify the molecular structure of metals.
1	Minimal	I can describe the characteristics of ferrous and nonferrous metals and identify the molecular structure of metals, but a lot of information is missing.
0	No Evidence	No evidence shown.

### 2.3 I can interpret the metal identification system for the type of metal and perform nondestructive tests to identify metals.

Learning Target	Descriptor	Definition
4	Proficient	I can interpret the metal identification system for the type of metal and perform nondestructive tests to identify metals.
3	Developing	I can interpret some of the metal identification system for the type of metal and perform nondestructive tests to identify metals.
2	Basic	I can interpret some of the metal identification system for the type of metal and perform nondestructive tests to identify metals with low accuracy.
1	Minimal	I can list some metal identification system for the type of metal, but I don't understand them.
0	No Evidence	No evidence shown.

### 2.4 I can explain the effects that welding has on various metals and identify the weld heat-affected zone.

Learning Target	Descriptor	Definition
4	Proficient	I can explain the effects that welding has on various metals and identify the weld heat-affected zone.
3	Developing	I can partially explain the effects that welding has on various metals and identify the weld heat-affected zone.
2	Basic	I can explain the effects that welding has on various metals and identify the weld heat-affected zone, with several missing details.


  
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Learning Target	Descriptor	Definition
1	Minimal	I can identify the weld heat-affected zone.
0	No Evidence	No evidence shown.

### 2.5 I can pass the Northwoods Technical College final test for SMAW 1 with 100% accuracy.

Learning Target	Descriptor	Definition
4	Proficient	I can pass the Northwoods Technical College final test for SMAW 1 with 100% accuracy.
3	Developing	I can pass the Northwoods Technical College final test for SMAW 1 with 82% accuracy.
2	Basic	I can pass the Northwoods Technical College final test for SMAW 1 with 67% accuracy.
1	Minimal	I can pass the Northwoods Technical College final test for SMAW 1 with 50% accuracy.
0	No Evidence	No evidence shown.



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### 3. GMAW Theory and Equipment (10.00%)

#### Learning Targets

#### 3.1 I can explain the process and equipment of GMAW including the variables of Ohm's Law.

Learning Target	Descriptor	Definition
4	Proficient	I can explain the process and equipment of GMAW including the variables of Ohm's Law.
3	Developing	I can explain the process and equipment of GMAW including the variables of Ohm's Law without some minor details.
2	Basic	I can explain the process and equipment of GMAW without using Ohm's law.
1	Minimal	I can explain some of the process of GMAW with little detail.
0	No Evidence	No evidence shown.

#### 3.2 I can set up GMAW equipment for welding plain carbon steel.

Learning Target	Descriptor	Definition
4	Proficient	I can set up GMAW equipment for welding plain carbon steel.
3	Developing	I can set up GMAW equipment for welding plain carbon steel, but may need help trouble shooting equipment problems.
2	Basic	I can set up GMAW equipment for welding plain carbon steel, but I may have trouble with adjusting variables.
1	Minimal	I can turn on the machine and weld as long as it has wire and the settings don't have to be adjusted.
0	No Evidence	No evidence shown.

### 4. GMAW Welds (40.00%)

#### Learning Targets

#### 4.1 I can perform FILLET and SQUARE groove welds in the FLAT position and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.

Learning Target	Descriptor	Definition
4	Proficient	I can perform FILLET and SQUARE groove welds in the FLAT position and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.
3	Developing	I can perform FILLET and SQUARE groove welds in the FLAT position. Some of the welds have some minor discontinuities.
2	Basic	I can perform FILLET and SQUARE groove welds in the FLAT position. Most of the welds have some minor discontinuities.



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Learning Target	Descriptor	Definition
1	Minimal	I can perform FILLET and SQUARE groove welds in the FLAT position. Most of the welds have some major discontinuities.

0	No Evidence	No evidence shown.
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**4.2 I can perform FILLET and SQUARE groove welds in the Horizontal position and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.**

Learning Target	Descriptor	Definition
4	Proficient	I can perform FILLET and SQUARE groove welds in the Horizontal position and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.

3	Developing	I can perform the welds, but some of the welds have some minor discontinuities.
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2	Basic	I can perform the welds, but most of the welds have some minor discontinuities.
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1	Minimal	I can perform the welds, but most of the welds have some major discontinuities.
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0	No Evidence	No evidence shown.
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**4.3 I can perform FILLET and SQUARE groove welds in the vertical position downhill and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.**

Learning Target	Descriptor	Definition
4	Proficient	I can perform FILLET and SQUARE groove welds in the vertical position downhill and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.

3	Developing	I can perform the welds, but some of the welds have some minor discontinuities.
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2	Basic	I can perform the welds, but most of the welds have some minor discontinuities.
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1	Minimal	I can perform the welds, but most of the welds have some major discontinuities.
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0	No Evidence	No evidence shown.
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**4.4 I can perform FILLET and SQUARE groove welds in the vertical position uphill and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.**

Learning Target	Descriptor	Definition
4	Proficient	I can perform FILLET and SQUARE groove welds in the vertical position uphill and assess the basic welding flaws. The welds are consistent with QC 10 visual inspection.

3	Developing	I can perform the welds, but some of the welds have some minor discontinuities.
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2	Basic	I can perform the welds, but most of the welds have some minor discontinuities.
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Learning Target	Descriptor	Definition
1	Minimal	I can perform the welds, but most of the welds have some major discontinuities.
0	No Evidence	No evidence shown.

Submitted on 7/14/2019 by Bob Morehead