

Title of Lesson:	Copper Etching: Day 1
Teacher:	Jordyn and Ani
School:	Centennial High School
Grade Level[s]:	9-12
Date to be Taught:	10/1

Big Idea that drives Lesson/Unit:

In this set of lessons, students will experiment with a new material, copper, and a new method, resist engraving. They will understand the historical significance of copper etching and then generate a meaningful design for their copper keychain. This lesson will be a jumping off point and brainstorming session so that students can decide what design to make for their copper etching. We will also introduce the concept of copper etching so that they know how to approach their design.

Fine Arts Goals/Objectives:

- Introductory HS Levels VA:Cr1.1.I: Use multiple approaches to begin creative endeavors.
- Intermediate HS Levels VA:Cr2.1.II: Through experimentation, practice, and persistence, demonstrate acquisition of skills and knowledge in a chosen art form.
- VA:Cr2.2.II: Explain how traditional and nontraditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment.
- VA:Cn10.1.I: Document the process of developing ideas from early stages to fully elaborated ideas.

Vocabulary Acquisition:

- positive space: the subject or area of interest in an artwork
- negative space: the background or area around the subject

Key Artistic Concepts:

- history of copper etching
- compositional design; students will generate two different designs for their copper etching in their sketchbook. these will then be proposed to the teacher during the next class for review, potentially revision
- copper etching: this is the resist method—there are different ways to etch copper. in this method, students will draw their design on the copper plate with sharpie, which is the resist, let it dry, and then let it sit in the etching solution. after it sits for 45 minutes, we will neutralize the solution with baking soda and remove the piece, clean it, and attach a jump ring and keyring. students can also add a backing to the piece to make it stronger.
 - during the first lesson, students will just be planning what they'll etch, but we will introduce this method so they know what's happening later

Artmaking Materials Needed:

- sketchbooks (each student should have one already, ~20)
- pencils (each student should have one already, ~20)
- computer
- projector

Contemporary/Historical/Multicultural/Popular/Literature Art examples:



- Danube school artists example, 1520/22, Albrecht Altdorfer, German




- Virgin Seated on a Cloud by Federico Barocci helped popularize etching as a process and prove the artistic sophistication of the genre



- other contemporary examples



Procedures:

- DISCUSSION: (12 minutes)
 -  Centennial Copper Etching Lesson

- Introduction of the project, method of copper etching overview. This is the resist method of etching. Students will draw their design that they make today on the copper plate with sharpie, which is the resist, let it dry, and then put it into the etching solution. After it sits for 45 minutes, we will neutralize the solution with baking soda and remove the piece, clean it, and attach a jump ring and keyring. students can also add a backing to the piece to make it stronger.
- Today, students will only be generating and drawing their designs in their sketchbooks.
 - Remind them to explore principles of design and a variety of compositions.
- Go over a brief history and artist examples of copper etching. Etchings were first produced around 1500 in southern Germany, where they used iron plates. German artists in the Danube school (painters-turned-printmakers) mainly made landscapes. Etching was also explored in Italy and France. Prints from the danube school are characterized by a prominence of nature, rugged terrain, themes of human events happening in nature.
- DEMONSTRATIONS: (3 minutes)
 - Show teacher sample, explain which parts of the design were covered in sharpie and which weren't
 - emphasize positive space (the raised parts of the copper that were covered in sharpie) and negative space (the other space around the subject of the design that was affected by the ferric chloride)
- DESIGN/WORK SESSION: (30 minutes)
 - (Describe what steps students will go through, and list rough dialogue and questions you will use to motivate them.)
 - We will give more specific directions for their designs: No words, must be interestingly designed with clean lines and sketched out clearly. Details are important! Plan for where the hole will be for the keychain with a sharpie dot. A MINIMUM of 60% of your copper piece needs to be covered/designed with sharpie.
 - We will then encourage students to talk to their peers to generate ideas for a design. They should keep in mind the size of their copper pieces, and the tools at hand (sharpies and fine tip sharpies) as they are generating designs. They should be careful to do something detailed but not too small, so it doesn't come out messy or confusing.
 - We will set a timer for 30 minutes of work time, and keep the teacher samples and other modern samples up on the slideshow for them to view as inspiration.
- CLEAN UP: (2 minutes)
- CLOSURE: (2 minutes)

- Work on your sketches tomorrow, and have 2 sketches ready for Thursday. Remember that your design has to cover at least 60% of the copper! Come ready to show us your sketches so that you can start immediately with putting the design on your copper piece.

Title of Lesson:	Copper Etching: Day 2
Teacher:	Jordyn and Ani
School:	Centennial High School
Grade Level[s]:	9-12
Date to be Taught:	10/4

Big Idea that drives Lesson/Unit:

In this set of lessons, students will experiment with a new material, copper, and a new method, resist engraving. They will understand the historical significance of copper etching and then generate a meaningful design for their copper keychain. This lesson will be a jumping off point and brainstorming session so that students can decide what design to make for their copper etching. We will also introduce the concept of copper etching so that they know how to approach their design.

Fine Arts Goals/Objectives:

- Introductory HS Levels VA:Cr1.1.I: Use multiple approaches to begin creative endeavors.
- Intermediate HS Levels VA:Cr2.1.II: Through experimentation, practice, and persistence, demonstrate acquisition of skills and knowledge in a chosen art form.
- VA:Cr2.2.II: Explain how traditional and nontraditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment.
- VA:Cn10.1.I: Document the process of developing ideas from early stages to fully elaborated ideas.

Vocabulary Acquisition:

- Positive Space: the subject or area of interest in an artwork
- Negative Space: the background or area around the subject

Key Artistic Concepts:

- Compositional Design
- Copper Etching

Artmaking Materials Needed:

- 20 Fine and Extra Fine Sharpies
- Roll of Duct Tape
- Hand Sanitizer/Rubbing Alcohol
- Q-Tips
- Ferric Chloride
- Baking Soda

Procedures:

- DISCUSSION: (5 minutes)
 - Schedule
 - “You should have two sketches ready for today. You’re going to choose which design you want to do more and bring it to one of us to make sure that it will cover at least 60% of your copper. We will then give you your copper piece and you can use sharpies to draw your design. Remember that any part you draw on will stay raised and the acid will eat away the copper of everything left unmarked.
 - “If you make a mistake, you can use Q-tips and hand sanitizer to erase the Sharpie from your copper piece.
 - “When you are completely finished, cover the back of your piece with tape, write your name on it, and leave it on Ms. Starling’s desk.”
- DESIGN/WORK SESSION: (35+ minutes)
 - (Describe what steps students will go through, and list rough dialogue and questions you will use to motivate them.)
 - Students will choose which design (of their two sketches) they would like to use for their final copper piece. They will need approval of their design by Ani or I before they receive/begin to draw on their copper piece.
 - “Where are you going to punch your hole?”
 - When their design is approved for meeting the criteria, they will begin to carefully draw their design on their copper using extra fine and fine Sharpie markers.
 - If a mistake is made, students can use a q-tip or similar cotton/paper product and hand sanitizer or rubbing alcohol to erase the sharpie from their copper.
 - When students are completely satisfied with their work, they will tape the back of their copper piece, write their name on it, and leave it on the teacher’s desk to be placed in a plastic bag with ferric chloride in it to begin the etching process.
 - After 45-60 minutes of etching, the acid will be neutralized by baking soda.
- CLEAN UP: (4 minutes)
 - Students will return all of the Sharpies they were using and all tables should be free from Sharpie residue.
- CLOSURE: (2 minutes)
 - On Tuesday, we will be finishing up and putting your etched copper pieces on keychains. If you would like, feel free to bring a charm or two to add to your keychain.

Title of Lesson:	Copper Etching: Day 3
Teacher:	Jordyn and Ani
School:	Centennial High School
Grade Level[s]:	9-12
Date to be Taught:	10/8

Big Idea that drives Lesson/Unit:

In this set of lessons, students will experiment with a new material, copper, and a new method, resist engraving. They will understand the historical significance of copper etching and then generate a meaningful design for their copper keychain. This lesson will be a jumping off point and brainstorming session so that students can decide what design to make for their copper etching. We will also introduce the concept of copper etching so that they know how to approach their design.

Fine Arts Goals/Objectives:

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- VA:Cn10.1.I: Document the process of developing ideas from early stages to fully elaborated ideas.

Vocabulary Acquisition:

- Positive Space: the subject or area of interest in an artwork
- Negative Space: the background or area around the subject

Key Artistic Concepts:

- Compositional Design
- Copper Etching

Artmaking Materials Needed:

- Hand Sanitizer/Rubbing Alcohol
- Cotton Rounds/Paper Towels/Tissues
- Steel Wool
- Awl
- 20 Jump Rings
- Pliers
- 20 Keychains

- Backing

Procedures:

- DISCUSSION: (3 minutes)
 - Schedule
 - Today you will be getting your copper pieces back and cleaning them up.
 - You will remove the sharpie, buff it, punch a hole in it, and attach it to your keychain using a jump ring.
 - If you brought a charm, you can also add that to your keychain.
 - If you would like it to be more rigid, you can also add a backing to your copper piece.
- DEMONSTRATIONS: (3 minutes)
 - Steel wool buffing
 - Students will be shown how to use the steel wool to buff their copper pieces. They will be instructed to use light pressure and move the steel wool in smooth, straight strokes with the grain of the metal. Students should try to avoid circles or curved strokes, if possible.
 - If multiple grades of steel wool are available, they should start with a coarser grade and move up to a finer grade.
 - Opening and attaching jump rings
 - Students will be instructed how to use the pliers to open the jump rings properly. They should not pull the two sides apart, but instead use two pairs of pliers to twist the ends laterally. Students can then use one pair of pliers to insert the jump ring into their copper piece and/or keychain. Finally, they can close the jump ring by twisting the ends back together.
 - [Video Resource](#)
- WORK SESSION: (35+ minutes)
 - Students will clean their pieces up in the sink, taking the tape off of the back and using hand sanitizer to remove the sharpie.
 - “Do you think your work would benefit from being cut into a different shape?”
 - OPTIONAL: Students may choose to cut out a shape from their original copper piece.
 - Once clean and DRY, students will be instructed to use steel wool to buff and polish their copper pieces. If multiple grades of steel wool are available, they should use them from most coarse to most fine. Students will also be reminded to be gentle and not to go over it too much as their copper piece is thin and they could sand completely through if they’re not careful.
 - Students will then use an awl or similar tool to carefully punch a hole in their copper piece at their desired location to make the copper attachable to the jump ring.

- They will then use pliers and jump rings to attach the copper to the keychain they are provided with.
 - OPTIONAL: If students brought a charm to add to their keychain, they may also use jump rings to attach it at this time.
- When satisfied with their work, students will clean up their space and have free time.
- CLEAN UP: (3 minutes)
 - All pliers, extra jump rings, steel wool, and awls must be returned.
 - Any trash (paper towels, q-tips, cotton rounds) must be thrown away.
 - Tables should be free of dust, debris, or sharpie residue.
- CLOSURE: (2 minutes)
 - “Thank you for allowing us to teach you this past week and for being so cooperative with us.”
 - It’s been a pleasure being here with you all