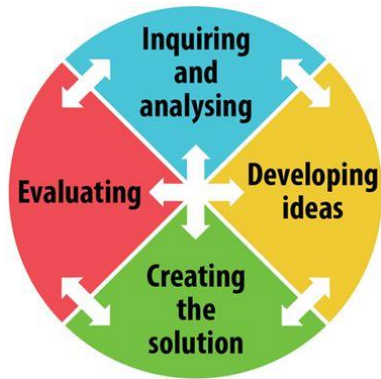


Introduction

Students will complete several projects that will teach them a variety of skills and techniques. It is expected that upon completion of the course, students will become familiar with **EVERY** machine in the shop. Students will learn to **SAFELY** use files, punches, scribes, shears, hammers, hacksaws, torches, drill presses, lathes, milling machines, welding equipment and much more. There will also be an emphasis on the importance of layout, design and finish.



1. Inquiry
2. Develop Ideas (Ideation)
3. Creating a solution
4. Evaluating the solution

Big Ideas

- | | | |
|---|---|-----------------|
| <ol style="list-style-type: none"> 1. Social, ethical, and sustainability considerations impact design 2. Complex tasks require the sequencing of skills 3. Complex tasks require different technologies and tools at different stages 4. Products can be designed for life cycle | } | Metalwork 9/10 |
| <ol style="list-style-type: none"> 5. Personal design interests require the evaluation and refinement of skills 6. Tools and technologies can be adapted for specific purposes | } | Metalwork 11/12 |

Upon successful completion of this course students will be able to:

1. Demonstrate the ability to plan, reason, organize and manage activities. **(Thinking)**
2. Demonstrate an understanding of the design cycle and how it affects our daily lives **(Personal and Social)**
3. Combine a wide variety of technical skills, materials and processes to construct a unique response to a design challenge to the best of their abilities. **(Communication)**
4. Effectively respond to design briefs and design criteria **(Communication)**

Curricular Competencies

1. *Applied Design*
 - Understanding Context
 - Testing
 - Defining
 - Making
 - Ideating
 - Sharing
 - Prototyping
2. *Applied Skills*
 - Identify skills needed for project completion
 - Demonstrate an awareness of safety issues for themselves, co-workers, and users in both physical and digital environments
 - Identify and evaluate their skills and skill levels, in relation to their project or design interests, and develop specific plans to learn or refine their skills over time
3. *Applied Technologies*
 - Identify/learn appropriate technologies to complete tasks
 - Explore existing, new, and emerging tools, technologies, and systems and evaluate their suitability for their design interests

- Analyze the role and impact of technologies in societal change, and the personal, social, and environmental impacts, including unintended negative consequences, of their choices of technology use
- Analyze how cultural beliefs, values, and ethical positions affect the development and use of technologies

Students are expected to know the following:

- proper storage and organization of tools and equipment
- selection of metal for size, shape, and finish
- common gauges of metal
- start-up, shutdown, and handling procedures for compressed gas cylinders
- precision measurement
- methods for laying out, forming, and joining metal
- precision grinding
- reading and preparing drawings, plans, and cutting list
- use of orthographic and pictorial drawings
- measuring instruments
- tables and charts for tolerancing and machining
- operation of stationary power equipment in the processing of material
- operation of stationary non-power equipment in the processing of material
- ways to size and lay out metal
- types of metals and alloys and their characteristics
- selection of metal type, size, structural shape, and finish for specific applications
- ferrous and non-ferrous metals and their applications
- heat treatment
- gas welding and gas cutting
- forging and foundry
- operation of oxygen-acetylene equipment for welding, brazing, and cutting
- finishing purposes and processes
- dimensional tolerance
- operation, maintenance, and adjustment of stationary powered and non-powered equipment
- areas of metal specialization

Content

1. Characteristics and uses of ferrous and non-ferrous metals
2. Metal fastening techniques, including welding and fabrication practices
3. Metalworking techniques and processes using hand tools and power equipment

Expectations

Teacher:

I expect students will arrive to class on time, appropriately dressed and **with the necessary binders, textbooks, supplies, etc.** Students are expected to respect his/her classmates, teacher, and classroom – failure to do so will lead to disciplinary action that may result in expulsion from this course! It is also expected that students will follow the **STUDENT CODE OF CONDUCT** which is outlined in the Student Agenda Book. Students will be expected to cleanup during the last 5-10 minutes of every period. Last and perhaps most importantly, students are expected to work safely at all times and observe proper “safe work habits”.

Students:

Students can expect to work in a clean, positive, and safe environment – one that is free from racism, sexism, and all other forms of harassment!! He/she can also expect to be treated in a fair and respectful manner by both teacher and fellow students. If, at any time, you (the student) feel

that these expectations are not being met feel free to approach me (the teacher). My “door” is always open and I will **always** treat you fairly and respectfully (as long as I am being treated in a similar fashion).

Note: Metalwork is an inherently dangerous activity and because of this **SAFETY** is our number one concern. At all times it is expected that students will behave in a safe and reasonable manner. Students are expected to follow posted safety guidelines and follow instructions – failure to do so may result in expulsion from the course!!


Evaluation

Grading/Evaluation Rules:

Grades are not provided using the traditional scoring system (ie: percentages). In Metalwork students are developing skills therefore assessment is focussed on the acquisition of those skills. It is expected that as the year unfolds, each student’s skills will improve through repetition and practice. As these skills improve so too will their achievement. At reporting time, the mark will best indicate where the student’s skill acquisition is at that moment (ie: the “now”) rather than an average for their entire body of work term. More detailed information will be provided in class.

Grading Scale:

- 4 – EXT (Extending)
- 3 – PRO (Proficient)
- 2 – DEV (Developing)
- 1 – EMRG (Emerging)
- 0 – NEL (No Evidence of Learning) ***** work handed back so it can be redone *****

Proficiency Scale				
	Emerging	Developing	Proficient	Extending
	The student demonstrates an initial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a partial understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a complete understanding of the concepts and competencies relevant to the expected learning.	The student demonstrates a sophisticated understanding of the concepts and competencies relevant to the expected learning.
Translates to:	C-, C, C+	B-, B, B+	A-, A	A+

Important Dates to Remember:

Semester 1:

- First day of school Tuesday September 5
- First day of class Wednesday September 6
- Last day of class Monday January 29
- RCE Tuesday January 30

***Semester Turnaround Day Wednesday January 31

Semester 2:

- First day of class Thursday February 1
- Last day of class Friday June 21
- RCE June 24 & 25

Communication and Tutorials

Communication: The easiest way to get in touch with me outside of regularly scheduled class time is through our MS Teams page or through email: redgar@sd44.ca

Tutorials: There is a new Tutorial procedure this year. Tutorials are in the morning from 8:31 – 9:10 in the Metal Shop (room 144). I will be finalizing my schedule and posting on my door by the end of the first week of each semester. Most teachers will be available in the learning commons of **THEIR** learning Community. However, there isn't one for the Metal Shop so instead, the meeting place will be inside the classroom (Room 144). If you need to meet outside these times (ie: lunch or after school) you need to make an appointment.

NOTE: It is imperative that students have access to technology as the use of MS Teams is a mandatory component of this and all courses in the school. If access to technology is an issue for you and your family you must contact your teacher at the onset of the course so alternate arrangements can be made.

Shop Safety Principles & Guidelines:

1. Are you **DRESSED/PROTECTED** appropriately?
Wearing: Safety goggles
Hearing protection
Closed toed shoes or boots
Not Wearing: Jewelry
Loose clothing
Loose, untied hair
Ear buds (ie: music)
2. Do you have **PERMISSION** to be using that equipment?
3. Always follow posted **PROCEDURES** for each machine
4. **RESPECT**...
Your classmates
Your teacher
Your classroom
5. **PUNCTUALITY** – please arrive to class on time as instructions for the period almost always take place in the first 15 minutes of class
6. Everybody likes a **CLEAN SHOP**...
 - Please leave the shop in the same condition you found it in!
7. Do you have **PERMISSION** to leave the shop?
8. **HORSEPLAY** is not permitted in our shops!