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**Metalwork 10-11**

**OBJECTIVE**

The main objective of this course is to offer a combination of knowledge and “hands-on” skills that will prove valuable over a lifetime as well as opening doors to a variety of career options. The areas of focus will include a blending of safety, measurement, theory, tools and equipment, and materials and processes with an emphasis on the fabrication of metal related products. Students will apply the acquired skills in the design and fabrication of teacher/student selected projects. At the end of this course, students will:

- Safely use a variety of machines and tools specific to her/his project
- Accurately measure in both the Metric and Imperial measuring systems
- Sketch, plan, and draw a full set of project plans as needed
- Calculate material costs using a Bill of Materials
- Identify a variety of metal types by looking at shape, thickness, and material type
- Gain self-confidence and experience working in an industrial setting

**COURSE CONTENT**

- a. Safety practices
- b. Classifying metals
- c. Understanding drawings
- d. Heat treatment of metals
- e. Measurement
- f. Hand tools and machines
- g. Gas and Shielded metal arc Welding

**COURSE COSTS**

As per the policy laid out by the Surrey School District, there is no course fee charged for this course. Students will be provided with basic materials and supplies in order to meet the Ministry’s Prescribed Learning Outcomes. It must be emphasized that these materials are very basic in nature. Students who wish to enhance their learning may opt to purchase additional or alternate materials for their projects. These materials may be purchased through the school at district discounted pricing or can be brought in from home. Whether using the basic materials provided or additional and enhanced materials, each student will be required to pay for all materials going home. If a student chooses not to keep their project they fabricated, there will be no charge.

**Students who wish to take home their skill building projects will be assessed a charge of \$10.00 to cover the materials and consumable items used in the manufacturing of the projects. Please make cheques payable to: PANORAMA RIDGE SECONDARY**

## **SKILL BUILDING PROJECTS**

These skill building projects are designed to give students an opportunity to acquaint themselves with the metal shop machines and processes. Students are expected to demonstrate the safe use of the following machines: horizontal and vertical band saws, pedestal grinder, buffer, sand blaster, drill press, sheet metal machines and various welders. Students will also be able to use a variety of metalworking hand tools. This semester's skill building projects will be:

1. Sneaky snake
2. Ornamental three
3. Dino wrench
4. Desk organizer
5. Optional project – the students are free to design, budget planning and execute any project using the materials the shop has within a budget of 15 \$.

## **ASSESSMENT**

Students will be evaluated and graded using the following breakdown:

### **A. Diagnostic assessment**

1. Prior knowledge test - provides the teacher with information about what students already know and are able to do.
2. Safety tests - the students must score at least 90% to pass and to begin working on their projects.
3. Self-assessment test – through this, students can identify their own skill gaps, revise their work and track their own progress.

### **B. Formative assessment – 40 points**

1. Work class – for each power point presentation
2. Quizzes – at the end of each project

### **C. Summative assessment – 60 points**

1. Projects – each project is worth 12 points.