



SCHOOL DISTRICT NO. 73
(Kamloops-Thompson)

Board/Authority Authorized Course Framework Template

School District/Independent School Authority Name: School District No. 73 (Kamloops-Thompson)	School District/Independent School Authority Number (e.g. SD43, Authority #432): School District #73
Developed by: Allen Kotani	Date Developed: March 1, 2019
School Name: NorKam Senior Secondary School	Principal's Name: Jonathan Brady
Superintendent Approval Date (for School Districts only):	Superintendent Signature (for School Districts only):
Board/Authority Approval Date:	Board/Authority Chair Signature:
Course Name: Art Metal and Jewelry	Grade Level of Course: 11
Number of Course Credits: 4	Number of Hours of Instruction: 120

Board/Authority Prerequisite(s):

No prerequisites.

Special Training, Facilities or Equipment Required:

Teacher trained in Technology Teacher Education Diploma (TTED) or equivalent. District approved Applied Design, Skills, and Technologies Metalwork shop. All necessary Personal Protection Equipment (PPE) required for specific tools and equipment.

Course Synopsis:

This course has been developed to offer students the opportunity to think creatively and critically in the processes of design to develop and build real-world solutions to challenges faced in modern life to meet human needs. Students will be introduced to beginner level skills and techniques in metal work fabrication and design. The skills and techniques learned in this course will allow students to advance into Art Metal Jewelry 12.

Goals and Rationale:

Rationale

Technology Education (Art Metal and Jewelry 11) involves students in the design and fabrication of products and/or repair and maintenance services using a variety of materials, methods technologies, and tools in order to develop their ability to shape and change materials in the physical world to meet human needs.

Using creative and critical thinking, students have the opportunity to work collaboratively to address real-world challenges by exploring materials, using tools and equipment, designing and building, developing processes, and communicating the merits of their work. They learn to critically evaluate the appropriateness of the products and/or services they develop and those developed by others. As they explore the role of culture, including local First Peoples cultures, in the development of practical and innovative solutions to human needs, they develop a sense of personal and social responsibility for the products and/or services they develop and use, and their effects on individuals, communities, and the environment, now and in the future.

Learning in Applied Design, Skills and Technologies provides firm foundations for lifelong learning and, for some, specialized study and a diverse range of career opportunities. The Applied Design, Skills, and Technologies curriculum develops well-rounded citizens who are informed creators and consumers. It fosters the development of future problem solvers, innovators, service providers, and skilled citizens who can contribute to addressing challenges in our world not yet anticipated with processes and technologies not yet imagined in order to improve their lives, the lives of others, and the environment.

Goals

The BC Applied Design, Skills, and Technologies curriculum contributes to students' development as educated citizens through the achievement of the following goals. Students are expected to:

- acquire practical skills, safety and knowledge that they can use to bring their ideas from conception to fruition
- develop a sense of efficacy and personal agency about their ability to participate as investors, innovators, and agents of change to address practical challenges in a rapidly changing world
- explore how the values and beliefs of cultures, including local First Peoples cultures, affect the development of products, services and processes
- understand the environmental implications of the products and services they are designing and applying
- investigate and actively explore a variety of areas, including aspects of Technology Education, and new and emerging fields, in order to develop practical hands-on skills and make informed decisions about pursuing specialized interests for personal enjoyment or careers
- develop a lifelong interest in designing, creating, making, and evaluating products, services, and processes, and contributing through informed citizenship, volunteer work, and career opportunities, to finding and addressing practical challenges

Aboriginal Worldviews and Perspectives:

Declaration of First People's Principles of Learning:

- Learning is embedded in memory, history and story.
- Leading involves learning from mentors as well as those we are meant to lead.
- Learning is holistic, reflexive, reflective, experiential and relational.
- Applied Design, Skills and Technologies requires exploration of one's identity, philosophy and ethics.
- Applied Design, Skills and Technologies requires effective team and group dynamics to achieve goals and outcomes.

Declaration of Aboriginal Worldviews and Perspectives:

The First People's Principles of Learning are inherent in the aspects included in Applied Design, Skills and Technologies. Art Metal and Jewelry is inseparable from connectedness and relationships; specifically:

- Community involvement (process and protocols)
- The power of story
- Experiential learning
- Flexibility
- Leadership
- A positive learner centered approach
- Community engagement
- The role of the teacher, mentor or leader
- Local focus
- Industrial practice

Big Ideas

Design for the life cycle includes consideration of social and environmental	Personal design interests require the evaluation and refinement of skills.	Tools and technologies can be adapted for specific purposes.
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Learning Standards

Curricular Competencies	Content
<p>Students are expected to be able to do the following:</p> <p>Applied Design</p> <p><i>Understanding context</i></p> <ul style="list-style-type: none"> Engage in a period of user-centered research and empathetic observation to understand design opportunities <p><i>Defining</i></p> <ul style="list-style-type: none"> Establish a point of view for a chosen design opportunity Identify potential users, intended impact, and possible unintended negative consequences Make decisions about premises and constraints that define the design space, and develop criteria for success Determine whether activity is collaborative or self-directed <p><i>Ideating</i></p> <ul style="list-style-type: none"> Identify, critique, and use a variety of sources of inspiration Analyze how competing social, ethical, and sustainability considerations impact creation and development of solutions Generate ideas and enhance others' ideas to create a range of possibilities, and prioritize the possibilities for prototyping Choose suitability of possibilities according to success criteria and constraints Work with users throughout the design process <p><i>Prototyping</i></p> <ul style="list-style-type: none"> Choose an appropriate form, scale, and level of detail for prototyping, and develop a plan that includes key stages and resources Analyze the design for the life cycle and evaluate its impacts Visualize and construct prototypes, making changes to tools, materials, and procedures as needed Record iterations of prototyping <p><i>Testing</i></p> <ul style="list-style-type: none"> Identify and communicate with sources of feedback Develop an appropriate test of the prototype, conduct the test, and collect and compile data Evaluate design according to critiques, testing results, and success criteria 	<p>Students are expected to know the following:</p> <ul style="list-style-type: none"> traditional and modern techniques in jeweler design and creation use of artistic elements and image design to create emotional response and convey ideas concepts related to the creation of art with the primary medium of metal and alloys incorporation of other materials to enhance the final product use, purpose, and traditions of high-value materials various forms of casting detail-oriented welding material selection for specific applications application and purpose of finishes and polishes carving media for transfer to metal layout and use of materials to minimize waste and conserve material uses of power and non-power tools design for the life cycle ethics of cultural appropriation in design process future career options and opportunities in metalworking and jeweler creation interpersonal and consultation skills to interact with clients

to make changes

Making

- Identify appropriate tools, technologies, materials, processes, cost implications, and time needed
- Create design, incorporating feedback from self, others, and results from testing of the prototypes
- Use materials in ways that minimize waste

Sharing

- Decide how and with whom to **share** creativity, or share and promote design and processes
- Share the product with users and critically evaluate its success
- Critically reflect on plans, products and processes, and identify new design goals
- Evaluate new possibilities for plans, products and processes, including how they or others might build on them

Applied Skills

- Apply safety procedures for themselves, co-workers, and users in both physical and digital environments
- Individually or collaboratively identify and assess skills needed for design interests
- Demonstrate competency and proficiency in skills at various levels involving manual dexterity and metalworking and jeweler making techniques
- Develop specific plans to learn or refine identified skills over time

Applied Technologies

- Explore existing, new, and emerging tools, technologies, and systems to evaluate suitability for their design interests
- Evaluate impacts, including unintended negative consequences, of choices made about technology use
- Examine and analyze the role that changing technologies play in metalworking and jeweler design contexts

Big Ideas – Elaborations

- **Design for the life cycle:** taking into account economic costs, and social and environmental impacts of the product, from the extraction of raw materials to eventual reuse or recycling of component materials
- **environmental impacts:** including manufacturing, packaging, disposal, and recycling considerations
- **technologies:** tools that extend human capabilities

Curricular Competencies – Elaborations

- **user-centered research:** research done directly with potential users to understand how they do things and why, their physical and emotional needs, how they think about the world, and what is meaningful to them
- **empathetic observation:** aimed at understanding the values and beliefs of other cultures and the diverse motivations and needs of different people; may be informed by experiences of people involved; traditional cultural knowledge and approaches; First Peoples worldviews, perspectives, knowledge, and practices; places, including the land and its natural resources and analogous settings; experts and thought leaders
- **constraints:** limiting factors, such as task or user requirements, materials, expense, environmental impact
- **sources of inspiration:** may include personal experiences, First Peoples perspectives and knowledge, the natural environment, places, cultural influences, social media, and professionals
- **plan:** for example, pictorial drawings, sketches, flow charts
- **impacts:** including social and environmental impacts of extraction and transportation of raw materials; manufacturing, packaging, transportation to markets; servicing or providing replacement parts; expected usable lifetime; and reuse or recycling of component materials
- **iterations:** repetitions of a process with the aim of approaching a desired result
- **sources of feedback:** may include peers; users; First Nations, Métis, or Inuit community experts; other experts and professionals both online and offline
- **appropriate test:** includes evaluating the degree of authenticity required for the setting of the test, deciding on an appropriate type and number of trials, and collecting and compiling data
- **share:** may include showing to others, use by others, giving away, or marketing and selling

Content – Elaborations

- **artistic elements:** for example, line, shape, space, texture, color, form, tone, pattern, repetition, balance, contrast, emphasis, rhythm, movement, variety, proportion, magnification, reversal, fragmentation, distortion
- **other materials:** for example, glass, gems, jewels, plastics
- **high-value materials:** for example, gold, silver, brass, bronze
- **casting:** for example, sand, investment, spin
- **welding:** for example, brazing, soldering, wire-feed welding, gas welding
- **finishes and polishes:** for example, brushed, satin, matte, hammered, textured, flame, plating
- **carving media:** for example, soapstone, cuttlebone, foam
- **power:** for example, rotary tool, ultrasonic cleaner/polisher, engraver, soldering iron
- **non-power:** for example, file, jeweler’s saw, flat-nosed pliers, bead crimper, ring gauge, polisher, tumbler, burnisher, roller
- **cultural appropriation:** using or sharing a cultural motif, theme, “voice,” image, knowledge, story, or practices without permission or without appropriate context or in a way that may misrepresent the real experience of the people from whose culture it is drawn
- **interpersonal and consultation skills:** for example, professional communications, collaboration, follow-ups, courtesies, record keeping, ways to present visuals

Recommended Instructional Components:

- Direct Instruction
- Demonstrations
- Modelling
- Simulations
- Student-in-Role
- Peer teaching
- Experiential Learning
- Reflective Writing

Recommended Assessment Components: Ensure alignment with the [Principles of Quality Assessment](#)