THOMPSON RIVERS UNIVERSITY | Education & Social Work

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM/BETT Lesson Plan

Lesson Title: Machine Safety Walkabout: Identify and Tag **Lesson #** 1 **Date:** Apr 9 2025

Name: Reagan Tompkins **Subject:** Metalworking **Grade(s):** 10-11

Rationale:

Safety is foundational in all metalworking environments. This activity provides students with hands-on, visual, and critical thinking practice to recognize machine parts, identify hazards, apply safe practices, and choose appropriate PPE. This supports both core competencies and curricular competencies in the B.C. ADST curriculum, fostering a culture of safety and responsibility.

Core Competencies:

Communication	Thinking	Personal & Social
• Students collaborate and discuss observations at each machine station.	Creative & Reflective: • Students analyze machinery for potential hazards and safety needs.	• Students reflect on safety's impact on themselves and peers; they take personal responsibility for safe practices.

Big Ideas (Understand)

Complex tasks require different technologies and tools at different stages.

Learning Standards

(DO)	(KNOW)
Learning Standards - Curricular Competencies	**Learning Standards - Content**
Applied Design: • **Defining:** Identify criteria for success, intended impact, and any constraints. • **Making:** Identify and use appropriate tools, technologies, materials, and processes. Applied Skills: • Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments. Applied Technologies: • Choose, and as needed, learn about appropriate tools and technologies to use for tasks.	• Design opportunities. • Proper storage and organization of tools and equipment.

Instructional Objectives & Assessment

Instructional Objectives (students will be able to…)	Assessment
• Identify key parts of common metalworking machines. • Recognize at least one hazard per machine.	• Completion of sticky note responses (color-coded). • Teacher observation and reads aloud best answers.

• Describe at least one safe practice per machine. • Select appropriate PPE for each machine.	• Student reflection and discussion on findings. • Class feedback.

Prerequisite Concepts and Skills:

- Introduction and knowledge of shop safety and equipment safety.
- Familiarity with the general purpose of shop tools and metal machinery.

Indigenous Connections/ First Peoples Principles of Learning:

- Learning involves recognizing the consequences of one's actions.
- Learning is holistic, reflexive, reflective, experiential, and relational.
- Responsibility and respect for the safety of self and others aligns with the values of community well-being.

Universal Design for Learning (UDL):

- Visual cues on machines with labels and symbols
- Movement-based and tactile learning through station rotations
- Written, verbal, and collaborative expression of safety concepts

Differentiate Instruction (DI):

- Pair stronger and less experienced students at each station
- Provide visual references and machine diagrams
- Allow oral or scribed responses if needed

Materials and Resources

- Color-coded sticky notes (4 colors: Hazard, Practice, Part, PPE)
- Labeled machines (drill press, lathe, grinder, bandsaw, etc.)

Lesson Activities:

Teacher Activities	Student Activities	Time
Introduction (anticipatory set – "HOOK"): • Greet students and explain we're doing an activity before project work. • Have what each colored note means written on board. • Have sticky note on the machines the class will be writing about around the shop. • Explain that they will come up and collect colored sticky notes, write their name on each, and then move to each station and place note on them.	• Observe and listen to instructions • Come up and collect their sticky notes.	10 mins
Body: • Observe students and call rotations when 3 mins is up. • Answer any questions students may have.	• Rotate around to stations. At each station place one sticky note of each type: Hazard (red), Practice (green), Part (blue), PPE (yellow).	25 mins

Closure: • Call end of activity and have students sit back down. • Walk to each station and read out what color note has the best answer based on clarity and creativity. • Award a winner to the student who had the most "best" answers. • Allow class to commence working on projects. • Call clean up just before end of class.	• Sit and tables and listen to read aloud answers. • Keep track of their points award to them. • Start work on projects. • Clean up, put away tools, shut down machines.	32 mins

Organizational Strategies:

- Limit each station to 2 students max.
- Set the time limit for each station.
- Provide clear signage and written instructions.

Proactive, Positive Classroom Learning Environment Strategies:

- Encourage collaboration and curiosity
- Reinforce positive safety behavior and reward attentiveness
- Set clear expectations and support them with reminders

Extensions:

- Students create safety posters for machines later.
- Deeper dive into specific machine maintenance, cleaning, and troubleshooting.

Reflections (if necessary, continue on separate sheet):