

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

Lesson Title: _____ Safety Lesson # _____ 1 Date: _____ March 1, 2021
 Name: _____ Janys Pierce Subject: _____ Chemistry Grade(s): _____ Science 10

Rationale:

This lesson plan is important to the Science 10 class because it is introducing them to lab safety. Lab safety is important in their high school career and other parts of their lives. This lesson plan also includes English in a Science classroom with group discussion and a writing portion within the safety booklet.

Core Competencies:

Communication	Thinking	Personal & Social
<ul style="list-style-type: none"> • Connecting and engaging with others • Focusing on intent and purpose 	<ul style="list-style-type: none"> • Generating and incubating • Analyzing and critiquing • Questioning and investigating 	<ul style="list-style-type: none"> • Building relationships • Self-advocating • Self-regulating

Big Ideas (Understand):

Energy change is required as atoms rearrange in chemical processes.

Learning Standards:

(DO)	(KNOW)
Learning Standards - Curricular Competencies	Learning Standards - Content
<ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Ensure that safety and ethical guidelines are followed in their investigations 	<ul style="list-style-type: none"> • Practical applications and implications of chemical processes

Instructional Objectives & Assessment:

Instructional Objectives (students will be able to...)	Assessment
<ul style="list-style-type: none"> • Light a Bunsen burner • Identify important lab equipment • Know what to do in a lab accident • Set up a Bunsen burner 	<ul style="list-style-type: none"> • Class observation throughout the lab (of them lighting the Bunsen burner) • Their lab handout that is filled in and handed in at end of lab

Prerequisite Concepts and Skills:

Students should know basic English
 Students should know basic chemistry and equipment vocabulary from Science 9
 Students should know some basic lab safety from Science 9

Indigenous Connections/ First Peoples Principles of Learning:

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Universal Design for Learning (UDL):

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| <ul style="list-style-type: none">• I will demo how to use a Bunsen burner• I will be going over the lab procedure with the students while they have a printed version• We will have a group discussion post-lab, to discuss what happened during the lab and why they think specific things happened or how they happened |
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Differentiate Instruction (DI):

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| <ul style="list-style-type: none">• Allow 'thinking time', time between asking questions and expecting an answer• Allow students to think about their answer and to discuss it with their partner to determine if it is right and then have them announce it to me• Provide a list of the days plan at the beginning of the class so the students know what I am expecting of them and what we plan to accomplish• I will be wandering the class during the lab if students have any questions• The lab is hands on and the booklet is slightly artistic and allows students to write and use English within the Science classroom |
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Materials and Resources:

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| <ul style="list-style-type: none">• Laboratory procedure and safety booklet• Questions to think about post-lab• Laboratory materials (test tubes, chemicals, splint, Bunsen burner)• Safety video for beginning of class |
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Lesson Activities:

Teacher Activities	Student Activities	Time
Introduction (anticipatory set – "HOOK"): <ul style="list-style-type: none">• Start the class with a safety video: https://www.youtube.com/watch?v=MEIXRLcC6RA• Hand out the lab safety booklet/ lab procedure• Have the class work in their desk partners on their lab safety booklet – ensure the scissors and glue are out in view	<ul style="list-style-type: none">• Watch video• Start the safety booklet (cut and glue the lab equipment)	6 mins 10-15 mins
Body: <ul style="list-style-type: none">• Demo to the students how to light a Bunsen burner and the proper setup required etc.• Go over the procedure for their lab – make sure they know where to dispose of their waste from the lab• Let the students begin the lab – wander the classroom to make sure everything is going well and to answer any questions students may have (not sure if I should increase the time for the lab? I am sure students will want to do it multiple times)• Let the students know that I want each student to practice at lighting the Bunsen burner	<ul style="list-style-type: none">• Watch demo• Listen to the procedure and follow along in booklet• Begin lab	5 mins 5 mins 40 mins 10 mins
Closure:	<ul style="list-style-type: none">• Clean up and do dishes	5 mins

<ul style="list-style-type: none"> • Have the students clean up and make sure they do their dishes from the lab • Have the students sit back down – they can finish the rest of this booklet if they did not earlier • Ask a few questions that I have made: how did we make the hydrogen gas, why did we keep the test tube covered, what happened when you put the splint to the test tube, was there a pop, was the hydrogen gas clear, cloudy, did you notice any other changes throughout the lab? 	<ul style="list-style-type: none"> • Finish the booklet • Have a group discussion after the lab as a class 	<p>5 mins</p> <p>5-8 mins</p>
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Organizational Strategies:

<ul style="list-style-type: none"> • Have the lab already setup – chemicals and other equipment needed is out • Papers printed and ready to go • Questions preplanned for the class discussion • Video is already loaded and ready to go

Proactive, Positive Classroom Learning Environment Strategies:

<ul style="list-style-type: none"> • Letting the students know ahead of time that I will be asking questions but do not necessarily expect them to answer • No negative feedback if anyone answers incorrectly, just say not quite and lead them in the right direction – and assure them that it is not an easy topic and that I have created more practice questions if people are still having difficulties

Extensions:

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Reflections (if necessary, continue on separate sheet):

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