SCH3U Matter Unit

NOTE: Links in italics may not currently work. Will go "LIVE" as the unit progresses.

Please note that the outline starts as a duplicate of a previous semester to serve as an overview but is likely to change including assignments.

This is a live document. It will be adjusted as we go.

Assessments	**Information** Complete quizzes as you complete the learning related to each topic,
Quiz 1 topics: Periodic Table (we reviewed Grade 10 groups, ions etc) and Atom Basics & History}	In Class Date: *F24* ~25 mins in class Correct AND hand in Quiz with answers will be posted on Classroom at the end of the quiz day.
Quiz 2 topics: *Atomic History (B-R primarily), Isotope and percent abundance, Naming & forming compounds (Polyatomics, transition metal & covalent primarily)*	In Class Date: *F27* ~25 mins in class Correct AND hand in Quiz with answers will be posted on Classroom at the end of the quiz day.
Review Portfolio	See Google Classroom for details. This will be due on the date of the Grade 10 Review test, for a completion mark
Grade 10 topics & safety HALF Test: *(GHS, WHMIS and Grade 10 chemistry)*	In Class Date: *F19* ~25 mins in class SCH3U Gd 10 Review Test Topics
UNIT TEST	*DATE:* *Mar 4* . • Try to create your own review topics list before referring to the review: ○ SCH3U1 UNIT 1 Matter Test Overview • SUGGESTED: Do a mindmap of the unit topics to solidify connections and understanding. • **GENERAL HELP:** How to Better Answer and **Multiple Choice strategies** • Chapter 1 Review [note there may be some history questions/scientists on the review we did NOT cover and are NOT on the test] • Chapter 1 Text Review Answers • SCH3U/4C Exam Practice Quizzes & Tools - See slides on Grade 10 Review and Matter Unit. Please ADD any helpful resources you find. • Use any practice options provided with each learning topic (redo prior quizzes & activities) • ~~4C Matter Test Review F23 _blended course.doc~~

Learning Topics and Pacing Guide

Keeping Track! You can copy this Table of Contents to link all digital materials & track all topics. Optional but recommended.

KEEPING UP Date range gives the latest date you should complete the learning patch by.	LEARNING TOPIC COLLECTIONS	Complete Topics in collection **from Left to Right in the row,** then proceed to the next collection, unless otherwise instructed. Each topic should be completed in ONE class unless otherwise indicated. Boxes Filled in **Blue are Level 4** & can be skipped if you are behind the pace of the course (must complete Level 4 material if you are aiming for an above 85% in the course). It WILL appear on assessments.			
TOPIC DAYS F3: Introduction F4: Intro Continued & Amazing Race Review F5: Measurement (Activity) F6: Finish Measurement (Sig Figs) & continue Gd 10 review. Review Portfolio assigned. * bring lab shoes etc next class F7: Element Quiz 1-30 & Lab safety (water lab maybe) F10: Student Info form, Safety - WHMIS Symbols. Compound naming review. [redacted] F11: Student Info form, (if not done) Nomenclature Review F12: Element 1-40 quiz Significant Figures (cont'd practice time) Review polyatomic & transition metal naming & forming. (questions to name any compound) F14: Significant figures -	**COURSE INTRODUCTION AND REVIEW**	**WELCOME !** **TOPIC: Introduction** -> Please complete TEXTBOOK SIGN OUT (maybe) -> Create bookmark folders on devices for courses to make life easier! -> Complete your slides in Meet your classmates and see everyone else's soon! -> Review Course Outline -> Review Expectations Powerpoint Any other intro posts completed **Practice:** ● Complete **"Are You Ready" Task** . Correct your work using the Answers	**TOPIC: Gd 9 & 10 Review** **We will have an Grade 10 review TEST and element quizzes very soon (1-30, then 1-40, and 1-60)** -> Whiteboard Review: Draw an atom, electrons, protons & neutrons → Day 2 Intro Cont'd → The Amazing Race 1D Grade 9 Review 4-1 ○ **Tour of Gr9 Review around room** → Intro to the: Grade 10 Atoms, Nomenclature & Bonding Review _Student → Elements in Alphabetical Order by Symbol → SCH3U/4C Essential Gr10 Knowledge Summary.docx Nomenclature practice: → Gimkit Ionic Naming → Ionic and periodic table Games → Covalent Bonding & Lewis Dot Game → Nomenclature Sets 1& 2 - Hint: Complete set 1A & 1B to see the	**TOPIC: Measurement and Significant Figures (2 days)** **1 class:** → In partners: using the first 20 elements, one person draw a metal, the other a non-metal Bohr diagram. How would your two elements form an ionic bond? → Start up: **Necessary Math Skills -> Answers** **Math Skills Review - Useful site for variety of skills. Use as needed** Measurement Activity & Significant Figures ● Recall Scientific Notation ● **Accuracy vs Precision** **2nd Class :** ● LEARN Sig Figs & Scientific Notation Presentation ** Last slides cover Sci Notation. Review as needed if not covered in class. ○ Use this or take notes: Significant Digits/Figures	**TOPIC: Safety and Equipment (2 days)** **Day 1:** Continue Junior Review Safety Activity Chemistry Lab Safety Video -> Chemistry Equipment Labelled (S23).pdf! Learn the rest to make labs easier. Page 1 is to try and label, page 2 has the answers. Continue Junior Review OR: **{Optional} Dress Rehearsal Lab** ● Set up a lab station ● Light a Bunsen Burner ● Challenge ○ Can you hold water at (exactly) 70°C **Day 2:** -> LEARN: WHMIS 2015 & GHS Hazard Symbols. You need to be familiar with these for lab safety. -> Complete Safety Scavenger Hunt → Just the symbols Here to add to your notes → Practice: Safety Symbols &

practice with Aluminum activity :			answers! Also 2A & 2B. ALSO check this digital as it has all my typos corrected :) → Nomenclature Set 3 & 4 - See this link for sheets & answers,	Practice options (do some): ○ Significant Digits practice sheet - Answers ○ LINK NOT CURRENTLY WORKING Digital problems with immediate feedback ○ LINK NOT CURRENTLY WORKING Digital Problems with Feedback for Scientific Notation ○ Unit conversions ChemQuiz.netemquiz.net Digital problems with feedback for unit conversion. Note some units we don't know yet (eg Pa) so ignore those. Optional help: Measuring and estimating **Video for student use** • Scientific Notation with Examples Video (Mirabel Chemistry Channel)	Scenarios Practice -> Practice Hazard Symbols using this online quiz -> Gd 10 review continued - Lewis dot diagrams and bonding.
TOPIC DAYS ** Be working on Review Portfolio & related review topics F18: Atom Models & balancing review F19: Review Test & review portfolio due F20: Element 1-60 quiz (20 q's) Bohr-R Model **PORTFOLIO 1 Assigned** F21: Isotopes &	**The Atom & Models**	**TOPIC: History of Atom Models** **SCH3U Terms & Translations** LEARN: • **Nature of Science Activity** • History of the Atom [TED] • Atomic History Slides • Atomic Model Handout (L mod S23} • Cathode ray demo **Practice:** -> Complete the Handout (Except Bohr) -> be able to define: atomic number, mass number, isotope, atomic mass -> Atomic Theory WS (except 7) Subatomic particles worksheet (if practice is needed)	**TOPIC: Isotopes** LEARN: What are isotopes {3min video} Noodlium Activity {If away use Virtual Noodlium Data} **Practice:** -> Check your work (except for parts working with data) -> *Noodlium Activity Answers*, & complete reflection (Learning Portfolio Artifact) → Isotope Sheet with answers : Try at least few problems of each → Average Atomic mass wkst 1.pdf → Average Atomic mass wkst 2 & Ans.pdf ** Some questions give exact isotope	**TOPIC: Bohr -Rutherford Model** LEARN: Bohr-Rutherford Model Slides Story of Maria Mayer And Women of the Periodic Table **Practice:** -> Complete the Bohr section of Model Handout -> practice Bohr diagrams if needed. -> Be able to define: energy level, orbit, transition, ground state, line spectrum, continuous spectrum, quanta	**TOPIC: Flame test lab** **LEARN:**Flame Test Lab 2022-Complete this sheet during Demo (Learning Portfolio Artifact). Line Spectrum Gas tubes (no task, just an observation activity. If you are away it is just seeing in "real life" line spectra as in the Bohr Slides.) Optional help: For those away: Virtual Flame & Spectroscopy Lab Data to complete the Flame test lab sheet -> Refer to electromagnetic spectrum note

Noodlium activity* closed shoes next class F24: QUIZ 1 & Flame Test lab. TEST SOON! See Table at the top for Review Material and Test Date. Reminder to use Retrieval and Spaced practice on prior concepts!		Optional help: -> P.T. Review Game: 13 Question quizizz -> See Atomic Theory Reading for reference as needed Interesting History Videos: History of the Atom [TED] **Rutherford's Gold Foil Experiment 1** **Rutherford's Gold Foil Experiment 2** **Cathode Ray Tube Experiments**	masses, others just use the isotope number for the mass (eg C-14). Optional help: Click here for a visual of nuclei with more neutrons • *Average Atomic Mass Note* • *Average Atomic Mass Slides*	Optional help: The Hydrogen Spectrum lines video animation Spectral Lines video 3D Bohr Model of fluorine	
TOPIC DAYS F25: 3U only Atomic Radius & Learning Portfolio Introduced F26: 3U only Ionization Energy & Metal demo F27: **Quiz 2 &** Electron affinity topic & Ionic radius F28: Quantum M3: Quantum Cont'd -> Trends revisited & Review time [redacted] M4: UNIT TEST -> See Table at the top for Review Material M4: {Bonding Unit intro}	**The Trends in the Periodic table** **** QUIZ towards end of this Learning Collection** ****Test is approaching**	**TOPIC: 3U only Atomic Radius Trend** Recall Metals in water lab from Gd 10? ASSIGNED: Periodic Table Trends Activity --> PART 1 ONLY by next class (except question 5 if we haven't discussed core charge yet BUT it must be completed before submission) {Learning Portfolio Artifact} **Practice:** Periodic Trends Questions WS #1-4 NOTE: Q 1b has an error, what is it? NOTES: *Trends in the Periodic Table (note you can print but resist reading until AFTER our next class)*	**TOPIC:3U Only Ionization Energy (I. E.) Trend & Metal reactivity Demo** LEARN:Discuss Radius graphs & Discuss trend in Ionization Energy (start graph). -> Work on I.E. graph: careful planning the Y axis! Can complete Trends Questions from 1- 7. ASSIGNED: Complete Trends Activity (two graphs and questions) - SUBMIT via Classroom **Practice:** -> Complete Trends Questions as assigned above (sheet of questions only) - NOT submitted -> Complete Metal Reactivity Activity in notes -> "Synthesis Questions". This looks like a lab you have to do BUT the results table is on page 2, you just need to analyze the results. **Optional Level 4 In portfolio** Successive I.E. for those	**TOPIC: 3U Only Electron Affinity (E. A.) & Ionic Radius trends** LEARN: → Ionic Radius → E.A and Reactivity & Electronegativity (NOTE: this semester we will NOT cover successive ionization energy) **Practice:** → Optional game practice Unit 1 - Periodic Table War Instructions & Unit 1 - Periodic Table War Cards.docx →You can now do Part 3 of Trend Questions WS, compete all questions except #13-15 (successive ionization not covered) → READ *Quantum Reading* Optional help: My Video Explaining	**Topic: 3U only Quantum Atom Model and Trends** **(Quantum is s preview to Grade 12, not tested in our course, 1-2 days)** LEARN *Quantum Reading* (assigned reading class before) -> Class Quantum Slides For interest only: Detecting Explosives Video For interest only: Cancer detection with quantum dots **Day 2:** -> Trends Revisited: Explaining the exceptions -> Unit Wrap up and Review **Practice:** • Quantum Atom WS -> Answers on second sheet. Complete questions indicated in class to practice, Note you complete # 1-7 (except 5) the first day. • When ready, attempt

Reminder to use Retrieval and Spaced practice on prior concepts!			interested-> Worked example Khan Academy} Optional help: -> *Teacher Periodic Trends Slides* for Reference ->Video: Group 2 Reactions -> Video: Halogen displacement reactions -> Video: Appearance of elements -> Video for Ionization Energy and Atomic Radius	Electronegativity for absences (references a different note but SAME info) -> Deep Dive Website on all trends (student created, so overall good but electron affinity is somewhat unclear)	the *Quiz: Trends & Quantum* • {Optional} *Quantum Review Video*