**Unit Plan Template**

**A template based on Understanding by Design**

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| **Title of Unit** | Introduction to science 10 and safety | **Grade Level** | 10 |
| **Subject** | science | **Time Frame** | 6-10 lessons |
| **Developed By** | Marne B | | |

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| **Stage 1 – Desired Results** | | | |
| **Communication** | **Thinking** | | **Personal and Social** |
| **Big Idea:**  What is this unit about? Why are you teaching it?  Science is fun when you understand safety, equipment and measurement.  **Essential Question:**  What is WHMIS? What information does WHMIS provide?  What do the symbols mean on different chemicals?  What is HHPS?  What are the basic lab safety rules we need to remember in science?  How do we read the different Science measurement tools?  Why is reading measurements accurately important.  How do I represent information in graphs and tables in a lab report? (basic)  How can I manipulate equations to solve a formulate?  When do I need to convert units? How do I convert units in one step? | | | |
| **What students will be able to DO**  **Curricular competency learning standards:**   * **Questioning and Predicting:**   + - Experience and interpret the local environment (measurement and hazardous symbols) * Process and Analyze data and information   + Read Measurement tools   + Manipulate equations   + Construct, analyze and interpret graphs * Communicating   + Use Appropriote Scientific Language (Equipment and Chemical labels) | | **What students will KNOW**  Content learning standards:  NOTE: Much of this is review from Grade 9   * The basics of Lab Safety * Chemical ID symbols * Names of Lab Equipment * Measurement standards * Unit Conversions * Graphing Standards | |
| **Stage 2 – Assessment Evidence** | | | |
| **Formative Assessments**  **FOR**:  Pre-Activities before lesson sections (Hazardous symbols and safety, measurements and Scientific methods)  Eg – What do you already know? Lab Symbols Gallery  **OF/AS**: Jeopardy game and Password game (with teams)  Group work (Placemat , Symbol research)  Classwork – Questions  Quiz on Symbols, Exit Slips on Safety, INB on Scientific Methods – See Plan | **Summative Assessments**    Safety Unit Test  Test must be passed for students to participate in any labs in class. | | **Self-Assessment / Peer Assessment**  Safety self-assessment rubric (to be compared with lab safety test) |
| **Stage 3 – Learning Plan**  ***Should be Differentiated*** | | | |
| **Potential Barriers to Success / Areas to Differentiate:**  Might include: engagement, motivation, organization, language ability, exceptionalities, reading level, etc.   * Disinterest in Group work * Find INB pages boring * Math is too easy or too hard | | | |
| **Giving students voice and choice:** how you will adjust for differentiation needs   * Offer different option for presenting information (speaking, drawing, writing) * Offer enrichment readings and work (for strong math students) * Use strong students to create Password game cards. | | | |
| **Integrating Aboriginal worldviews and perspectives:**   * **Learning is….** | | | |
| **Sequence of Lessons:** The basics of what you plan to do in each lesson of the unit. The first one will be how will you engage students at the beginning of the unit? (motivational set – your ‘hook’ – it could be accessing their background knowledge in some way) | | | |

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| **#** | **Lesson Title** | **Lesson Activities (Learning Experiences)** | **Assessment and Core competency** | **Resources** |
| **1** | **INTRO** | What is Science?  Overview of the course and requirements.  Introduction to Interactive Notebook Concept (INB)  If time – What do you know about lab safety? | **N/A**  **Formative: Exit Slip about their interest in science**  **CC: P/S INB organization and learning skills** | **Course Outline**  **Requirements Letter**  **INB Sample** |
| **2** | **Lab Safety**  **Conduct in Lab**  **Hazardous Chemicals intro** | **Hook:** Dangerous demo (or video)  **Activity 1**: Placemat on Lab Safety points (5)  Use list of rules and each table groups rules into categories (each has 2 categories)  **Post:** INB Page (to be kept until students have book to glue it in)  List of rules and signature of agreeing to them.    **Activity 2:** Lab Safety equipment – where is it?  Give each pair a poster from PPT File and have them locate the safety equipment. SHARE WITH CLASS  POST – Draw a map in INB and label where the safety equipment is | **Assessment of prior Lab safety**  **CC: Thinking – Prior knowledge and common sense** | **INB Page**  **Large paper**  **Felt Pens**  **Print out of PPT safety equipment**  **INB of rules**  **Blank to glue in.** |
| **3** | **Lab Safety**  **WHMIS**  **HHPS**  **MSDS** | **Hook:**  bring in products that students look at labels and talk about what you think they mean  **Activity**: Dangerous Chemical symbols (HHPS and WHMIS)  **Expert Groups -** WHMIS, WHIMIS SYMBOLS, HHPS & Symbols, MSDS,  **Post:**  Complete notes in INB Skeleton and output page. (flaps for Symbols)  **Closure:**  wrap up with why this is important (story?) | **Assessment:**  **Formative – Jigsaw**  **CC: Thinking – Connections to their home chemicals and implication to their health is improperly handled (is this P/S)** | **Home Products**  **WHMIS and HHPS information**  **MSDS binder**  **Carousel Information** |
| **4** | **Lab Safety**  **Wrap up** | **Hook:**  Game  **Activity:**  **1 Start with -** Quiz (formative and so they know what they need to know)  **2**.Begin Intro to equipment : Lab equipment displayed Cards handed out and each student will label a piece of equipment.  **Post:**INB equip – Label equipment on the page to glue into INB using prior activity results (verified by teacher)  **Closure:** Why is it important to know lab equipment? | **Formative: Mark lab safety practice quiz (trade with friend and teach collects)**  **CC: Thinking – Accessing prior knowledge of lab equipment** | **Pass Word cards**  **Quiz (can be on screen and then do it on paper)**  **INB Lab Equipment Labeling**  **Lab equipment and Cards** |
| **5a** | **Lab Equipment**  **And measurement liquids and size** | **Hook:** Demo of measurements gone wrong?  **Activity:**  Example given for Liquid measurements and length/size Temp, Weight.  Activity carousel to practice (Stations to read measurements)  **Closure:** | **Self-Assessment of Measurements**  **CC: Communication: Expressing measurements is a form of communication** | **Worksheet for Carousel**  **Lab set up**  **Video on Histrical Science tools**  **Demo Idea/example**  **Exit Slips**  **Exit Sip box and prize jar**  **\*\* prize for next class** |
| **5b** | **Measurement**  **Weighing and Temp** | **Hook:** weighing traditional (historical tools) – Photos / Videos of antique weighing tools)  **Activity:**  Continue Carousel Activity  **Post: INB note page on Key things to remember when measuring in Science**  **(visuals for each common tool – Glued in with notes)**  **Closure: Challenge Question – Bonus exit slip – (prizes drawn from correct answers)** |
| **6** | **Unit Conversions**  **And**  **Manipulating Equations**  **Depends on pace of learners** | **Hook:** Check in on measurement (give 2 problems and compare with partner)  Unit conversion Formative Assessment – Try/Pair/Share  **Activity:**  Unit Conversions examples / Show Video of Crash Course  WHY? HOW?  **Post: INB Page Notes – option to put in the cut-out pages if they want.**  **Closure: Why is this important (outline the units to come this year)** | **Formative – Check-in**  **CC: P/S Helping another student to understand** | **2 problems**  **To check measurement**  **Unit conversion questions**  **INB Page** |
| **7** | **Hook:** Unit Conversions Check-in – Try/Pair/Share  Equation Manipulation – Think of when/why you might want to manipulate an equation? THINK/PAIR/SHARE (explain this structure )  **Activity:** Have students try this on chart paper - groups of 4 – each person does one of the challenges on the equation set sheet.  Discuss this – correct each other and rotate chart papers – have groups check each other’s work  **\*\*\* note if there are too many errors – stop class and teach it, if ok let students teach each other.**  **Post: Review the rules – INB note page input (output optional)**  **Closure: Challenge exit slip – for draw box.** | **Formative – Check-in**  **Teacher sees the chart paper on equations.**  **CC: Communication**  **(explaining to friend)** | **-Chart Paper and pens**  **-Equation Examples (4 each on the sheet**  **-Answer sheet for checking**  **--INB Page for Equation Manipulation**  **-Exit Slip** |
| **8** | **Assessment** | **Lab safety and equipment and Skills TEST**  **Must have ??% and can re-take as many times until they pass** | **Summative Assessment** |  |