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| Science 9 | Unit B: Envirochem |
| Section 1: Chemicals and the Environment | 84 min |

1.1 Chemicals in the Environment

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| Medicine in the Environment  Willow Bark – Greeks/First Nations chewed or made tea to treat fever/pain  Purple Cone Flower – First Nations used it to improve the immune system | Salicylic acid -> acetylsalicylic acid -> Aspirin  Echinacea |

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| ***WE NEED CHEMICALS TO SURVIVE*** |  |

Nitrogen Cycle (Hand Out Picture)

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| Nitrogen Fixation – Free Nitrogen (N­2) is “fixed” to other compounds that living organisms can use. | N2 becomes NH3 |

Pollution

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| Adding chemicals into the environment that are harmful to living things  Types:  Fertilizer: a substance that enriches soil so that plants will grow better  Pesticides: Chemicals to kill a pest.  Types:   * Herbicide: kills plants * Insecticide: Kills insects * Fungicides: Kills Mushrooms (Fungi)   Solid Wastes: Garbage  Sanitary Landfills: prevent leaching of chemicals to the environment  ***Draw a Sanitary Landfill*** | 15-30-15 = 15% N – 30% P – 15% K  Pest: any organism that harms people, crops or structures  ***Pesticides are not very selective… insecticides can kill bees as well as arthaworms.***  Leaching is the transfer of unwanted chemicals to the environment. |

Wastewater

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| Sewage: water containing chemicals from your home  Rural Homes: have a septic tank  City Homes: Go to a sewage treatment plant | ANY water that goes down the drain  Treated water is called effluent |

Combustion

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| Hydrocarbons (Fuels) are burned to create energy or heat |  |

Common Substances Essential for Living

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| Inorganic Substances   * Compounds without carbon * Simple compounds * NaCl/NH3   ***Give it a try (pg. 196)***  Nutrients – Compounds and elements living things need to survive  Marco Nutrients – Compounds that we need LOTS of to survive  Examples: N, P, K, Mg, Ca, S  A balance of these chemicals is needed… can’t just eat cookies and survive…  Organic Compounds  Carbohydrates – Compounds made of C, H, and O  Lipids – Fats, oils and waxes (EXREMELY COMPLEX CARBOHYDRATES)  Proteins and Amino Acids – made up of N C O H and sometimes S  Nucleic Acids – EVEN BIGGER organic molecules | Organic Substances   * Compounds with carbon * Large complex * CH4, Sugars, DNA   Micro Nutrients – Compounds that we only need a little to survive… but still need  Selenium, Iodine…  Glucose – Simple Sugar C6H12O6  Glycogen – Lots of Glucose  DRAW  Proteins are made up of Amino Acids  Make up our DNA and RNA |