|  |  |
| --- | --- |
| **Unit:** | Genetic Processes |
| **Course:** | SB13U |
| **Lesson:** | Punnett Squares |
| **Overall Expectations:** | Investigate genetic processes and analyze data to solve basic genetic problems involving monohybrid and dihybrid crosses.(Curriculum)  - Students should be able to understand and explain the terminology associated with Punnett Squares. |
| **Specific Expectations:** | Use the Punnett Square method to solve basic genetic problems involving monohybrid crosses, incomplete dominance, co-dominance, dihybrid crosses and sex-linked genes. (Ontario Curriculum)  - Students should be able to create a Punnett Square if they are given the genotype and/or phenotype. |
| **Introductory Activity:** | - Start off the class with an Anticipation Guide activity to get the students thinking about genetics and the idea of inheritance.   - Put a tally chart on the board and for each question write down how many of the students thought the question was “likely” or “unlikely” to be true.  - Read out the statements to the class and ask for a vote by having the students raise their hand for likely or unlikely.  - Briefly discuss why students answered in this way. |
| **Main Lesson:** | - Have the students take notes on the main lecture about genetics.  - Key words to be covered: homozygous, heterozygous, dominant, recessive, genes, inheritance, co-dominance genotype, phenotype, monohybrid cross, dihybrid cross, Punnett Square, allele, trait  - Present PowerPoint introducing key words and going through the steps of creating a Punnett Square  -Go through simple examples with the class, on the board, on creating Punnett Squares and determining probability. Lead into closing activity. |
| **Closing Activity:** | - Have the class split into groups of 2 students to work on the worksheet.  Worksheet will be asking questions about different cutouts of aliens and determining whether traits are dominant or recessive.  - The final question of this exercise will be using the cutouts package that will require students to determine what the genotypes are for each alien.  - Students will hand in worksheet at the end of class (or take for homework – time permitting) |
| **Assessment:** | - Worksheet  - Tested on Punnett Squares on a later date |
| **Next Day:** | - Take up homework at the beginning of class (if necessary)  - Dihybrid crosses Punnett Squares  - Sex-linked genes |
| **Resources:** | - Worksheets (35)  - Cutout packs (18 – one for each pair)  - Presenter and Laptop for PowerPoint  - blackboard |