ED 101 Educational Technology Lab – Fall 2012
Boston University – School of Education

LESSON PLAN

Grade(s)	*8th*
Content Area(s)	*Science*
Topic of Lesson	*Describe the specific topic of your lesson.*
Three Objectives	- When asked by a teacher, students will be able to provide an oral explanation of the structure and function of DNA that must include the following three ideas: genotypes, genetic coding, and traits - When asked by a teacher, students will be able to differentiate the characteristics of a dominant and recessive gene. - When provided with a set of traits that a parent passes to an offspring, students will be able to create a written Punnett square with the correct probabilities.
Technology standard	Standard 1. Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity. G6-8: 1.17 Apply advanced formatting features to customize tables, charts, and graphs.
Curriculum Framework	Example: ➢ Massachusetts Science and Technology Standards ➢ Learning Standards for Science, 8 ➢ Concepts and Skills Explain the important and the functions of the DNA strand, be able to explain why cells duplicate and split to be genetically passed on. Draw Punnett squares to find the probability of a child to receive a dominant or recessive trait from their parents.
Materials	- The computers with Internet access and LCD projector in the

needed	classroom - Paper and pencils for the students to draw their own Punnett squares
Lesson Introduction **(5 minutes)**	The students will be seated with their Biology textbooks and pictures they brought in of their family. I will begin by asking the students to point out possible dominant traits of their parents. Then they will be asked to write down what traits they received from each parent. This is used to show them that they receive different traits from each of their parents.
Lesson Procedure, Web Site Use, and Technology Standard Instruction **(15 minutes)**	I will then go to the computer and pull up an weebly site that explains how to set up a Punnett square and how it is effective in determining the probability of an offspring receiving certain traits. Using the LCD board and computer I will show the student my previous constructed practice problems for them and work together picking out the dominant and recessive traits and properly placing them in the Punnett square. The students should have already learned the difference between a dominant trait, and be able to break down the practice problems and identify the placement of each trait in the square. Once we do two problems together, I will ask the students to work in groups to answer the rest of the questions. Once they have separated the dominant and recessive traits, we will move to the computer lab to work on Word. I will illustrate how to make Punnett Squares using Word, then ask them to make their own. Once they have successfully created their charts, they will use their results from their group work and place the traits inside the square. Doing this will allow them to find the probability of the offspring in the practice problems. The students will print out their Punnett Squares and return to the classroom.
Wrap-Up of Lesson **(5 minutes)**	After each group had a turn answering and explaining their practice problem in front of the class they will be asked to pick a dominant and recessive trait from their family and construct their own square and explain their square to their group. As students are doing their group work, I will walk around and participate and monitor their group work.
How will students be assessed to make sure they are able to perform the objectives?	**Objective 1:** Students will be able to define all the vocabulary in the genetics chapter in their textbook and the vocabulary words found on the class weebly page. **Assessment 1**: Students will be asked to make flashcards using index cards with the vocabulary word on the front of the card and the definition on the back and will use the index cards to test their peers. The group will take

	turns asking each other the definition of the vocabulary words. **Objective 2:** Students will be able to draw their own Punnett square grid that they will use to answer probability questions **Assessment 2**: The students will be given a probability scenario and will be asked to place each parents genotypes in the proper boxes and complete their drawn Punnett Sqaure. **Objective 3:** Students will be able to explain why cells duplicate and split themselves, and the probability of an offspring to receive either their mother or fathers characteristics. **Assessment 3:** The students will be given a scientific scenario and will be asked to identify the dominant and recessive traits. After identify the different traits they will be given blank Punnett squares and asked to properly place each trait in the squares and using learned vocabulary words to explain the probability of an offspring receiving each trait.