Lesson Title	Genetics: Mutation Lesson
Length of Lesson	One (50 minute) class period
Created By	Will McBryde, Rob Thornton
Subject	General Science
Grade Level	8th grade
State Standards	8th: 1b, d (Inquiry); 3d (Life Science)
DOK Level	DOK 3
DOK Application	Investigate, Explain Phenomena in Terms of Concepts, Identify
National Standards	5-8: A (Inquiry); C (Life Science)
Graduate Research Element	After the recent earthquake (i.e. geological processes) in Japan the ecological concerns of mutations due to radiation are a concern.

Student Learning Goal:
MS 8th Grade:
1(b) Distinguish between qualitative and quantitative observations make inferences based on observations. (d) Analyze evidence that is used to form explanations and draw conclusions; 3(d) Describe heredity as the passage of instruction from one generation to another and recognize that hereditary information is contained in genes, located in the chromosomes of each cell.

National Science Education Standards of Content 5-8:
(Inquiry - A) Abilities necessary to do scientific inquiry, Understandings about scientific inquiry; (Life Science – C) Reproduction and heredity

Materials Needed (supplies, hand-outs, resources):
PowerPoint (INSPIRE_McBryde_04.15.11_PP), Projector, Computer, Smartboard (if available)

Lesson Performance Task/Assessment:
This lesson will be assessed at the end with a brain pop quiz.

Lesson Relevance to Performance Task and Students:
The students will become aware of the basics of mutations and how they affect an individual organisms and the impact a mutation has on future generations.

Anticipatory Set/Capture Interest:
The capture will be posed as a simple question. Are mutations helpful or harmful? This question will lead into a discussion. Later in the discussion the students will see pictures of mutations.

Guided Practice:
The students will be guided through a PowerPoint lecture on mutations. Followed by a series of 8 pictures where the students will decide at their desk whether or not a mutation is helpful or harmful. The teacher can request the students to write down whether or not the mutation is helpful or harmful on a sheet of paper as part of the check for understanding.

Independent Practice:
The students will answer an open ended question as part of the anticipatory set. The students will also participate in a game of pictures where the student individually decides whether or not a mutation is helpful or harmful and why. The students will answer a BrainPop quiz.

Remediation and/or Enrichment:
Remediation- Individual IEP; Enrichment – Have students do a report on a mutation as a homework assignment.

Check(s) for Understanding:
Observe students participation during lecture. Information student's record during the mutation helpful or harmful slideshow can be graded. The BrainPop quiz taken at the end of class can be graded also.

Closure:
Question 1: What mutation may result from nuclear disasters?

Question 2: What mutations do you consider helpful? Harmful?

Possible Alternate Subject Integrations:
Biology, Geology, Chemistry

Teacher Notes:
After the lecture PowerPoint is taught and the students have finished the mutation helpful or harmful exercise the teacher will open the BrainPop link for the students to view. The students will then watch a short video followed by a 10 question quiz. Link provided in PowerPoint file.