Increasing Your Genetic Propensity

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Annotation:
This lesson includes a lecture and a project that demonstrates the principles that Charles Darwin assessed when writing The Origin of Species to explain natural selection. The students will be presented with the exact questions Darwin pondered and discuss, as a class, what they believe about these concepts. Students will then create an environment where they will consider their individual characteristics to make themselves have the greatest genetic propensity of all organisms living in their environment.

Primary Learning Outcome:
Students should understand the concept of natural selection. Students should also be aware of Darwin's work and the theory of natural selection. Students should be able to demonstrate that they have grasped the concept of genetic propensity and survival of the fittest.

Additional Learning Outcome:
Students should understand the concept of how the environment an organisms lives in helps to cause genetic drift in a population of organisms.

Assessed QCC's:
12.1 Explains historical and current theories of origins.
12.3 Explains natural selection and how it is affected by environmental changes.

Local and/or National Standards:
S. 9-12.12 Describes and applies concepts of origins.

Materials:
1) The Origin of Species by Charles Darwin
2) Paper
3) Markers/Crayons/Colored Pencils
4) Overhead projector
5) Transparency Sheets

Total Duration:
1 hour and 30 minutes

Procedures:

Step 1	
Description	Natural Selection Discussion
Duration in hours/minutes	45 minutes
Attachment #1 – Name and description	Principles of Natural Selection Pondered by Charles Darwin
Step 2	
Description	Students Create an Environment Based on their Individual Characteristics in which they Exhibit the Greatest Genetic Propensity (Drawing of Environment)
Duration in hours/minutes	25 minutes
Attachment #1 – Name and description	Natural Selection Activity Handout
Step 3	
Description	Students Display and Explain Their Environment and Denote Why they have the Greatest Genetic Propensity in that Environment
Duration in hours/minutes	20 minutes
Step 4	
Description	Display Created Environments on Classroom Walls
Duration in hours/minutes	~ after class

Assessment:
Teacher will analyze the student's environment and assess whether their explanation of why they have the greatest genetic propensity in that environment correlates with their individual characteristics and the characteristics of the created environment.
Teacher may create rubric based on the drawing, presentation, and accuracy in explaining genetic propensity based on natural selection.

Extension:
Have students research an organism in which a major genetic drift has occurred due to changes in environmental factors and report on their organism to the class.

Remediation:
The teacher may point out specific organisms' adaptations to specific environments in order to explain the fitness of an organism and have students discuss structural changes that may occur in that organism should the environment change in a specific way.