

Naturalist Outreach

Lesson Plan



Mitchell Roze Grades:9-12 Date: 21Feb19
Unit/Topic/Lessons: Turtles, Turtle Shells, Geometry

Objectives

Student will be able to:
 Go through Scientific Process, observation to results.
 Learn how both the turtle and chicken egg take advantage of geometric strength.

Correlation to State & National Documents

Alabama Course of Study: Science
 9-12 Unity and Diversity :14
AHSGE/Exit Standards & Eligible Content:

National Science Standards:
 9-12 Life Science:
 Biological Evolution
 9-12 Physical Science:
 Motion & Forces
 Assessment: Scientific paper

COS Content Standard

14. Analyze and interpret data to evaluate adaptations resulting from natural and artificial selection that may cause changes in populations over time (e.g., antibiotic-resistant bacteria, beak types, peppered moths, pest-resistant crops).

Materials/Resources

x	Hands-On Materials	
	Multimedia Materials	
	Computers/notebooks/PDA	
	Web sites	x
	Software	x
	Overhead Masters	
	Workbook/Handouts	x
x	Other Equipment/Supplies	x
	Guest Speakers	x
	Maps	x
	Lab equipment	
	Text:	

Assessment

Homework
Test/Quiz
Project
Participation
Class work
Presentation
Oral Responses
Teacher Observation
Self Evaluation
Group Evaluation
Portfolio
Other (Journal Entry)

Equipment needed

- Eggs
- Kitchen/plastic gloves
- Writing utensil/Paper
- Paper towels
- Cardboard box/bin

Instructions

Those participating in the lab will put on the plastic gloves and handle the eggs, taking care not to break them immediately. The participants will then squeeze an egg with the thumb and forefinger along one side of the egg squeezing with increasing force until the egg breaks over the box or bin. Next, the participant will squeeze along the opposite direction in the same manner until it cracks into the bin. (See Activity Sheet for discussion questions)

Grouping Strategies (small group, pairs)

Small groups of 2-3 students are recommended for improved discussion and accountability.

Assignments

Class work:
 Scientific method

Guided practice:
 Guide students through testing eggs

Reading: Text/ Articles/ Other
Papers on Turtles, Turtle Shell Structure and Shape

Writing:
 Write a scientific paper on experiment

Homework:

Background/Preparation

Teacher should have knowledge of basic turtle biology and geometry.

Take care to emphasize the connection between the shape of an egg and a turtle's shell.

Resources:
 Various Research Papers and website links (See Resource Guide)

Special

Integration with other disciplines:
 Writing (W.9-10.2), Math (Geometry), Engineering/Architecture
 Remediation Activities:

Enrichment Activities/Extensions:
 Write a scientific paper on the study

Special Topics/Schedules

Testing: ___ Activity: ___ Assembly: ___
 Pep Rally: ___ Media/PR: ___ SAC: ___
 Career Education: ___ Character Ed: ___
 Adopt-A-School: ___ Athletics: ___

Technology Integration:

PowerPoint:
 Websites:

Total Duration: Experiment from 20-40 minutes, Scientific paper can be turned in at a later (Introduction, methods, results, discussion, abstract). This could be done over the course of several class periods.