

Emory Evolution Workshop 2003
The Galloway Team: Marsha, John, & Pat
1 Week of Evolution Lesson Plans
Upper Learning 9th grade Biology

Day 1

HW Due: Summaries of 15-1 reading assignment from textbook

In class activity: An internet-based scavenger hunt

Purpose: The following set of Evolution Scavenger Hunt Questions is dual use. It can be used on the middle school level as a post-test evaluation for students to complete in pairs or trios. It can also be used as a pre-test or review assessment for individual high school students at the beginning of an Evolution unit. Once completed it can be used by the high school teacher to identify misconceptions, gaps in learning, and current levels of content mastery, as well as direct future lessons, and determine student interest. Since the questions have been created using Bloom's Taxonomy (the number in the parentheses at the end of the question), teachers can also use student answers to identify learning differences and individualize the learning process based on interest and ability.

Assessment & Evaluation: The minimum requirement is to answer 7 of the 11 questions.

Grading on the 100pt scale...

0-49	exceptionally late or incomplete work
5-69	late or incomplete work
70-79	7 or 8 questions completed with minimum acceptable quality
80-89	9 or 10 questions completed with overall good quality
90-100	all 11 questions completed with excellent quality

Adapt and adopt this scale as appropriate.

HW Assigned: Complete remaining portions of the scavenger hunt
Read and summarize 15-2



Evolution Review/Pretest Web Scavenger Hunt

Name _____

Directions: Choose and answer at least 7 of the below questions. This is the minimum! You have the whole class period to complete this assignment. This is due at the beginning of our next class period. You will be graded on completion and the quality of your answers.

1. Name the scientist associated with the Law of Superposition. (1)

<http://pubs.usgs.gov/gip/fossils/rocks-layers.html>

2. Design an experiment that tests the validity of Steno's Law of Superposition. (4-5)

3. Describe the relationship between fossils, casts, molds, and sediments (2)

<http://www.nova.edu/ocean/biol1060/evolution1.html>

4. Compare and give examples of dating fossils using relative age and absolute age. (4)

<http://jersey.uoregon.edu/~mstrick/AskGeoMan/geoQuery17.html>

5. List and describe the 5 mass extinctions that have occurred on Earth. Include approximate dates, causes, and the type or % of life affected. (1-2)

<http://www.wf.carleton.ca/Museum/lobby.html>

6. Go to (website) and identify two examples of biogeographical proof for evolution.(2)

<http://www.talkorigins.org/faqs/comdesc/>

<http://www.nova.edu/ocean/biol1060/evolution2.html>

7. Assess/Evaluate/Argue against the validity of Lamarck's explanation of evolution by acquired traits. (6)

http://www.pbs.org/wgbh/evolution/library/02/3/1_023_01.html

8. Create a scenario that would disprove Lamarck's theory of evolution. (5)

7. Go to <http://www.bio.miami.edu/dana/250/darwinfinches.jpg> and examine the different examples of Darwin's finches. Now, use the terminology from your book (such as variation, adaptation, natural selection, environmental pressure, etc) to propose a series of hypotheses that would explain how or why the different finch species evolved from a single ancestral finch species. (3-5)

8. Evaluate the following statement: The Galapagos was an ideal location for Darwin to do his research on natural selection. (6)

<http://pubs.nsta.org/galapagos/>

9. Explain what it means to say that Evolution is a Theory? (4)

<http://www.talkorigins.org/faqs/evolution-fact.html>

10. Compare and contrast three hominid skulls (Australopithecine, Homo erectus, and modern sapiens). Record the variations that would cause scientists to classify them as different species.

(6) Go to <http://www.anth.ucsb.edu/projects/human/>

then click on “enter the gallery”

then click on “human origins”

11. Propose one or more hypotheses about why these variations developed. (5)

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Day 2

HW Due: Summaries of 15-2

In class activities:

a. Spend the first 15-20 minutes of class reviewing and/or peer grading the completed scavenger hunt assignment. Collect for a daily grade, return asap.

b. The remainder of class may be spent with lecture/discussion of Darwin’s two main theories

1) Descent with modification

<http://www.indiana.edu/~ensiweb/lessons/wh.n.mkg.html>

<http://www.talkorigins.org/features/whales/>

<http://darla.neoucom.edu/DEPTS/ANAT/whaleorigins.htm>

2) Modification by natural selection.

<http://insert.good.website.here.com>

c. Time permitting, introduce and/or assign groupings for the mini presentations due on Friday.

d. Exit ticket: Summarize and give an original example of descent with modification.

HW assigned: Read and summarize 15-3

Day 3

HW Due: Summaries of 15-3

Challenge question: Summarize and give an original example of modification by natural selection.

In class activity: Mini poster presentation research. Divide the class into groups of 2 or 3. Let each group choose from a list of the major sources of evidence for evolution and major patterns of evolution. Each group will be given one or more website resources to investigate as they compose a mini presentation with a Post-It poster of each type of evidence or pattern.

Evidence for Evolution

biodiversity and biogeography

<http://www.pbs.org/wgbh/evolution/library/04/index.html>

<http://www.talkorigins.org/faqs/comdesc>

comparative anatomy and development

<http://www.pbs.org/wgbh/evolution/library/04/index.html>

<http://www.talkorigins.org/faqs/comdesc>

fossil record

<http://www.pbs.org/wgbh/evolution/library/04/index.html>

<http://www.talkorigins.org/faqs/comdesc>

molecular biology and genetics

<http://www.pbs.org/wgbh/evolution/library/04/index.html>

<http://www.talkorigins.org/faqs/comdesc>

Patterns of Evolution

coevolution

<http://www.pbs.org/wgbh/evolution/library/01/index.html>

<http://www.szgdocent.org/ff/f-fig.htm>

convergent evolution

<http://www.pbs.org/wgbh/evolution/library/01/index.html>

divergent evolution

<http://www.pbs.org/wgbh/evolution/library/03/index.html>

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Day 4 (&5?)

HW Due: All research with mini poster presentations

In class: Mini Poster presentations on evidence & patterns topics from students.

Assessment: Adapt or adopt your own presentation rubric. See below.

HW: No homework!

Presentation Rubric

Attributes	Above Standard	At Standard	Attribute Still A Goal	Attribute Points Earned
	(5-4.5)	(4.5-3.5)	(3.5-0)	
Resource Utilization	Utilized all resources described on Information Sheet to acquire info; incorporated info into presentation and web page.	Utilized some resources described on Information Sheet to acquire info; incorporated information into presentation and web page.	Utilized few or no resources described on the Information Sheet to acquire information into presentation and web page.	/5
	(10-9)	(9-7)	(7-0)	
Topic Discussion	Informed when speaking (without reference to notes) about the material.	Informed when speaking about the material while referencing notes.	Unable to accurately discuss information related to topic or simply read information from paper.	/10
	(10-9)	(9-7)	(7-0)	
Visuals & Supplementary Materials	Oral report included computer-generated and/or hand made visuals (clip-art, graphs, tables, charts, and QuickTime movies), and was presented with multimedia software that enhanced presentation.	Oral report included computer-generated and/or hand made visuals (clip-art, graphs, tables, charts, and QuickTime movies) that enhanced presentation, but was not presented with multimedia software.	Oral report did not include visuals or supplementary materials or materials used did not enhance presentation.	/10
	(15-13.5)	(13.5-10.5)	(10.5-0)	
Hyper Studio or Web Page Utilization	Created pages accurately reflect the groups data, results and rational. It is organized in a way that enhances the reader's ability to understand the information, data and results.	Created pages accurately reflect the groups data, results and rational. It is organized in a way that allows the reader to understand the information, data and results.	Created pages are incomplete, missing or do not get across the group's information, data and results.	n/a
Total Presentation Points Earned				/25

SUGGESTIONS?

Web site link for Bloom's Taxonomy... don't be lazy

Plants

Museum Web sites