

Emerson Middle School Integrated Lesson Form

Title: Week 11: October 26-30

Lesson Description: Biological Diversity and Natural Selection

<p>Educator</p>	<p>Name: Elena Mackey A+ School: EMS Grade level/subject area: 7th Grade Science</p>
<p>Curriculum & Arts</p>	<p>Overarching Concept: Natural Selection Essential Question(s) and/or Focus Question(s):</p> <p>What is Natural Selection? How does genetic variation make natural selection possible? What is the goal of Natural Selection? What determines which traits will be selected and passed down? How does the environment influence Natural Selection? How does natural selection differ from artificial selection? What is adaptation?</p> <p>Disciplines Addressed: 21st Century skills:</p> <p><input type="checkbox"/>_dance <input type="checkbox"/>_music <input checked="" type="checkbox"/>_x_visual arts <input checked="" type="checkbox"/>_x_creativity <input type="checkbox"/>_drama <input checked="" type="checkbox"/>_x_reading <input type="checkbox"/>_x_writing <input checked="" type="checkbox"/>_x_problem solving <input type="checkbox"/>_language arts <input checked="" type="checkbox"/>_x_science <input type="checkbox"/>_other: <input checked="" type="checkbox"/>_x_technology <input checked="" type="checkbox"/>_x_math <input type="checkbox"/>_social studies <input checked="" type="checkbox"/>_x_collaboration</p> <p>Curricular connections/instructional objectives: (state standards, etc.) MS LS 4-4, 4-5, 4-6</p>
<p>Enriched Assessment</p>	<p>Ways to assess/evaluate students' understanding during and at the conclusion of the lesson</p> <p>Formative: Students will answer bellwork questions and critical thinking assignment questions that will gauge their understanding of new material.</p> <p>Students will create an Natural Selection and Adaptation Collage</p> <p>Students will create a comic strip depicting the process of Natural Selection</p> <p>Summative: Students will complete daily exit slips.</p>

	<p>Note any unexpected outcomes with students and how they affected next steps:</p>								
<p>Collaboration</p>	<p>How will collaboration be used: (between students, fellow teachers, or anyone with potential expertise):</p> <p>I will continue to meet with the science department and my 7th grade core team to improve assessment and instruction.</p> <p>Students will work in groups to complete the Natural Selection Comic.</p> <p>Students will present their comic</p> <p>Students will work with partners to share their knowledge. I will guide classroom discussions to monitor understanding. I will be meeting with students and parents this week to assess and celebrate student progress.</p>								
<p>Multiple Learning Pathways</p>	<p>Multiple Intelligences addressed within lesson: (check all that apply)</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/>_bodily/kinesthetic</td> <td><input type="checkbox"/>_musical-rhythmic</td> </tr> <tr> <td><input checked="" type="checkbox"/>_interpersonal</td> <td><input type="checkbox"/>_naturalist</td> </tr> <tr> <td><input checked="" type="checkbox"/>_Intrapersonal</td> <td><input checked="" type="checkbox"/>_verbal-linguistic</td> </tr> <tr> <td><input checked="" type="checkbox"/>_logical-mathematical</td> <td><input type="checkbox"/>_visual spatial</td> </tr> </table>	<input checked="" type="checkbox"/> _bodily/kinesthetic	<input type="checkbox"/> _musical-rhythmic	<input checked="" type="checkbox"/> _interpersonal	<input type="checkbox"/> _naturalist	<input checked="" type="checkbox"/> _Intrapersonal	<input checked="" type="checkbox"/> _verbal-linguistic	<input checked="" type="checkbox"/> _logical-mathematical	<input type="checkbox"/> _visual spatial
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<p>Infrastructure</p>	<p>Classroom Infrastructure/Setup: Timeframe (example: length of unit, number and length of lesson(s): Space: Material: Resources/books/websites/other information sources: Google Classroom, youtube</p> <p>Monday Bellwork (7 min)</p> <ul style="list-style-type: none"> A. Explain why genetic diversity is important for the process adaptation? (1-2 sentences) B. Give an example of an animal that we have studied and how that animal adapted. <p>Think Pair Share bellwork (5 min)</p> <p>Finish Comic (25 min)</p> <p>Exit: Define Adaptation in your own words (5 min)</p> <p>Tuesday: Bellwork: (10 min)</p> <ul style="list-style-type: none"> A. What main advantage does a cheetah that can run faster than the others have? B. Using the website below, list five ways the cheetah body is adapted for speed. <p>http://www.dccafrica.co.za/cheetah-facts/adaptations-to-speed/#:~:text=Their%20body%20temperature%20rises%20and%20breathing%20becomes%20rapid.&text=Their%20long%2C%20muscular%20tail%20acts,angle%20at%2080%20km%2Fh.</p> <p>Natural Selection Slide summary (12 min)</p> <p>Natural Selection Collage (15 min) https://docs.google.com/document/d/1pSCB-sTP2YCMECaiqpa2tBje7_ZWQkH0ZwOLgeqB2_8/edit</p>
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Exit What are two environmental factors that can create a need for a species to adapt? (5 min)

Wednesday-

Bellwork (10min)

- A. Using the article below define a generalist and a specialist species.
- B. Which type will most likely survive a change in habitat or climate? Explain
- C. Give an example of a generalist and a specialist species from the article.

<https://www.nationalgeographic.org/encyclopedia/generalist-and-specialist-species/#:~:text=An%20example%20of%20a%20specialist,habitats%20that%20support%20eucalyptus%20trees.>

Finish Natural Selection collage (15 min)

https://docs.google.com/document/d/1pSCB-sTP2YCMECaiqpa2tBje7_ZWQkH0ZwOLgeqB2_8/edit

Build a food chain (20 min)

https://docs.google.com/document/d/1MF5bEX6cCSbre2pvooM_VAm2tHsuh3buplLYV63K9So/edit

Exit: Pick one of the four natural selection principles and explain it in your own words (5 min)

Thursday

Bellwork: (7 min)

How are genetics related to adaptation and diversity?

Adaptation Examples video 12:08

<https://www.generationgenius.com/videolessons/adaptations-video-for-kids/>

For each animal mentioned in the video, type two sentences describing two of its adaptations.

Class presentations (15 min)

1. Choose to either present your comic strip or your collage.
2. Comic Strip Presentation:

- a. Explain what is happening in each panel of your comic.
 - b. Read your summary on the back
 - c. Explain how your comic depicts the idea of Natural Selection and Adaptation.
 - d. This presentation must be presented by the group
 - e. Your presentation must be 5 minutes long.
3. College Presentation
 - a. Choose three animals to discuss from your collage.
 - b. Discuss each animal's habitat, food, adaptations, predators and environmental threats.
 - c. Your presentation must be five minutes long
 - d. This is an individual presentation.
 4. Audience responsibility during presentations
 - a. Open up a blank Google Doc
 - b. Title it "Quiz Questions"
 - c. Type one quiz question for each presentation.
 - d. Submit your questions to Google Classroom for a grade.

Exit: Explain how the idea of adaptation is connected to the concept of natural selection. (5 min)

Friday

Bellwork (10 min)

Huntington's disease is a genetic disorder caused by a dominant faulty gene. It usually shows up by age 30-50

Hungtinton's Disease Article

[https://hdsa.org/what-is-hd/overview-of-huntingtons-disease/#:~:text=Is%20Huntington's%20Disease%3F-,Huntington's%20disease%20\(HD\)%20is%20a%20fatal%20genetic%20disorder%20that%20causes%20years%20and%20has%20no%20cure.](https://hdsa.org/what-is-hd/overview-of-huntingtons-disease/#:~:text=Is%20Huntington's%20Disease%3F-,Huntington's%20disease%20(HD)%20is%20a%20fatal%20genetic%20disorder%20that%20causes%20years%20and%20has%20no%20cure.)

- A. Will this disease be selected out in the near future?
- B. Explain why or why not.
- C. List **three** symptoms of the disease.

Think Pair Share bellwork (5 min)

	<p>Finish Presentations (15 min)</p> <p>Natural Selection Vocab worksheet (12 min)</p> <p>https://docs.google.com/document/d/13RNolmBRk36yyVOw0_g3dICNM_jchkDVF16F6rt1dLU/edit</p> <p>Correct worksheet (5 min)</p> <p>Exit: Write one test question about the material we covered this week. (5 min)</p>								
<p>Experiential Learning & Climate</p>	<p>Steps/Process: (You may share by using this form, video, photostory, powerpoint, etc.) Please attach rubric, checklist or other assessment tool, if applicable.</p>								
<p>ISTE standards</p>	<p>Check all that apply:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Empowered learner</td> <td><input checked="" type="checkbox"/> Digital citizen</td> </tr> <tr> <td><input checked="" type="checkbox"/> Knowledge constructor</td> <td><input checked="" type="checkbox"/> Innovative designer</td> </tr> <tr> <td><input checked="" type="checkbox"/> Computational thinker communicator</td> <td><input checked="" type="checkbox"/> Creative</td> </tr> <tr> <td><input type="checkbox"/> Global collaborator</td> <td></td> </tr> </table>	<input checked="" type="checkbox"/> Empowered learner	<input checked="" type="checkbox"/> Digital citizen	<input checked="" type="checkbox"/> Knowledge constructor	<input checked="" type="checkbox"/> Innovative designer	<input checked="" type="checkbox"/> Computational thinker communicator	<input checked="" type="checkbox"/> Creative	<input type="checkbox"/> Global collaborator	
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