


Unit 0: group work

 8th Grade Groupwork\_Teacher.pdf

[Stanford NGSS Integrated Curriculum: An Exploration](https://scienceeducation.stanford.edu/curriculum/stanford-ngss-integrated-curriculum-exploration-multidimensional-world#grade8f)


[ohttps://scienceeducation.stanford.edu/curriculum/stanford-ngss-integrated-curriculum-exploration-multidimensional-world#grade8f](https://scienceeducation.stanford.edu/curriculum/stanford-ngss-integrated-curriculum-exploration-multidimensional-world#grade8f) a Multidimensional World


4 Days

Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
On WYTOPP Performance Standards for DAS	How do we conduct ourselves during group activities?	Students will establish behavior norms and roles for productive group activities	Task O- Stanford NGSS Integrated Curriculum	Team building activities Group reflection Introduction of classroom norms and group work roles	Rules and roles quiz (formative)

Unit 1

Nature Via Nurture

 6th\_grade\_unit\_3\_-\_teacher\_version.pdf

 6th\_grade\_unit\_3\_-\_student\_version.pdf


25 days

Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
ESS2-5 LS1-5 LS3-1 LS3-2	How can we use environmental and genetic factors to explain changes in organisms?	Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.  Use evidence to support the explanation that traits can be influenced by the environment  Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	Google slide set to include practice work and background information  Toxic algae news report <a href="#">Toxic algae bloom in Oakland's Lake Temescal prompts beach closure - ABC7 San Francisco</a>  Research stations for note taking  Soil chemistry packet  Soil reading packet	Pipe Cleaner reproduction modeling  Weather poster  Soil analysis lab  Germination investigation  Group project- 360 news report or opposing viewpoint poster  Pop bottle cloud lab  Weather cyclor  Diversity field study comparing insect communities of micro ecosystems surrounding school facility	Task Quizzes (formative)  Summative Unit test common assessment (WYTOPP authored)


## Unit 2

Adapt or Die [unit\\_3\\_teacher\\_version\\_-\\_8th\\_grade\\_integrated\\_.pdf](#)

 [unit\\_3\\_teacher\\_version\\_-\\_8th\\_grade\\_integrated\\_.pdf](#)

 [unit\\_3\\_student\\_version\\_-\\_8th\\_grade\\_integrated\\_.pdf](#)


29 days

Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
<b>ESS1-4</b> <b>LS3-1</b> <b>LS4-1</b> LS4-2 LS4-4 <b>LS4-5</b> <b>LS4-6</b>	Why do species change over time and should we intervene?	<p>Explain that the geologic time scale interpreted from rock strata provides a way to organize Earth's history. Analyses of rock strata and the fossil record provide only relative dates, not an absolute scale.</p> <p>Create a model that demonstrates that the fossil record documents the existence, diversity, extinction, and change of many life forms and their environments through Earth's history.</p> <p>Demonstrate that Natural selection leads to the predominance of certain traits in a population, and the suppression of others and that In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding.</p> <p>Develop a model that shows that adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions.</p> <p>Demonstrate that genes are located in the chromosomes of cells, with each chromosome pair containing two variants of each of many distinct genes.</p> <ul style="list-style-type: none"> <li>Each distinct gene chiefly controls the production of specific proteins, which in turn affects the traits of the individual.</li> <li>Changes (mutations) to genes can result in changes to proteins, which can affect the structures and functions of the organism and thereby change traits</li> </ul> <p>Explain the methods by which sexual reproduction results in genetic diversity while asexual</p>	<p>Google slide set to include practice work and background information</p> <p> Can wildlife adapt...</p> <p>Article describing animal species that have undergone rapid evolution in response to climate change  <a href="https://www.smithsonianmag.com/science-nature/ten-">https://www.smithsonianmag.com/science-nature/ten-</a></p>	<p>Relative dating activity</p> <p>Fossil timeline</p> <p>Peppered Moth simulation- board game</p> <p>Natural selection PHET activity  <a href="#">Natural Selection</a></p> <p>Paper DNA model template</p> <p>Group project- debate</p>	<p>Task Quizzes (formative)</p> <p>Summative Unit test common assessment (WYTOPP authored)</p>

		reproduction results in identical copies of the parent genetic code			
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Supplement  
Wave characteristics

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 unit\_4\_student\_version\_-\_8th\_grade\_integrated\_.pdf

10 days



Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
PS4-1 PS4-2	What is a wave and how does it behave?	Use a mathematical model to represent a simple model for waves, including amplitude and energy  Use a simple model to demonstrate that waves are reflected, absorbed or transmitted through various materials.	GPS article <a href="https://education.nationalgeographic.org/resources/gps/">https://education.nationalgeographic.org/resources/gps/</a>  <a href="#">Wave on a String 1.1.30</a>  <a href="https://academo.org/demos/virtual-oscilloscope/">https://academo.org/demos/virtual-oscilloscope/</a>	Water wave observation  Phet wave simulation  Virtual oscilloscope lab  Material interaction light lab  Slinky wave review	

Unit Three  
Warmer World



 6th\_grade\_unit\_4\_-\_teacher\_version.pdf

 6th\_grade\_unit\_4\_-\_student\_version.pdf

26 days

Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
ESS3-3 ESS3-5 LS1-4 LS1-5 ETS1-1 ETS2-2 LS1-6 LS1-7	How do humans impact organisms around the world and what can we do about it?	Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect probability of successful reproduction of animals and plants respectively.  Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms	"  Bad news for bees  New climate chan...  <a href="#">Video: Temperature Puzzle – Climate Change: Vital Signs of the Planet</a>	Creation of science news style magazine describing a selected endangered animal	Task Quizzes (formative)  Summative unit common assessment (WYTOPP authored)

		<p>Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p> <p>Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p>			
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Unit Four  
Using Engineering and Technology to Sustain Our World  
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 unit\_4\_student\_version\_-\_8th\_grade\_integrated\_.pdf  
28 days

Standards	Essential Question	Unit Objectives	Resources	Projects/ Assignments	Assessments
ESS3-4 PS1-3 LS4-4 PS4-1 PS4-2 PS4-3 ETS1-1 ETS2-2	How are changes in Earth affecting plants and animals and what can we do about it?	<p>Students will demonstrate that the continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.</p> <p>Students will model ways in which the long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies</p> <p>Students will explain the ways that the exchange of matter between natural systems and human societies affects the long-term functioning of both.</p>	<p>Google slide set to include practice work and background information</p> <p>Project planner</p>	<p>Google slide proposal for local facility based on research of needs of a selected Wyoming community</p> <p>Scale design of planned facility</p> <p>Creation of scale model and explanatory poster</p>	<p>Task Quizzes (formative)</p> <p>Summative project</p>