

ADVANCED LEARNING LABS

Collaboration between NC Department of Public Instruction and AIG Teachers across the state

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES

8-9

Interdependence



ENGLISH LANGUAGE ARTS

Read Roberta L. Millstein's essay entitled "How the Struggle for Existence Became an Environmental Ethic For Our Lifetime:" <https://www.humansandnature.org/how-the-struggle-for-existence-became-an-environmental-ethic-for-our-lifetime>

As you read, delineate and evaluate the argument and specific claims in the text. Assess whether the reasoning is valid and the evidence is relevant and sufficient. Identify false statements or fallacious reasoning. What does the text say about interdependence?

Write an abstract of the essay. Include your critique of the reasoning.

How to write an abstract: <https://writingcenter.gmu.edu/guides/writing-an-abstract>



SOCIAL STUDIES

The United Nations (UN) defines human rights:

"Human rights are rights inherent to all human beings, whatever our nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status. We are all equally entitled to our human rights without discrimination. These rights are all interrelated, interdependent and indivisible."

The United States has a variety of documents and laws that protect our individual rights. Research how these rights are protected by laws in the U.S. and compare and contrast these rights with the definition by the UN. What is the same? What is different? How are the rights interdependent? Create an infographic that explains what you have learned.

Infographic Resource: <https://piktochart.com/blog/how-to-create-an-infographic-and-other-visual-projects-in-5-minutes/>



SCIENCE

Many living things need other organisms in order to survive, which is known as interdependence. For example, living things that cannot make their own food must eat other organisms for food. One particular kind of interdependence is symbiosis. Symbiosis is a close relationship between organisms of different species in which at least one of the organisms benefits. There are several different types of symbiosis. Read this article from National Geographic to learn more: <https://www.nationalgeographic.org/article/symbiosis-art-living-together/>

Then check out this video to learn more: <https://www.youtube.com/watch?v=zSmL2F1t81Q>

Accept the challenge at the end of the video. Grab your science notebook (or a piece of paper) and start collecting examples of symbiotic relationships around you.



MINDFULNESS

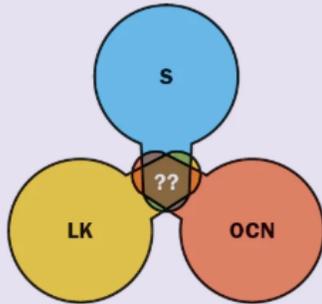
"We are all connected. What affects one, affects all in the web of life called Earth." - Chief Seattle
Chief Seattle was defining interdependence, specifically our connection with each other and Earth. We rely upon the sun for energy, the earth for food, trees for air, and water for drinking. Stepping outside to practice mindfulness helps us to remember our connections to the natural world. Find a peaceful place to sit outside. If possible, sit on the ground and feel the earth beneath you. Feel the wind or sun on your skin. Listen to your surroundings. Envision your favorite place or thing from the natural world (park, tree, animal). What makes this place or thing special? Send out thoughts of gratitude to nature for the creation of your place or thing.

When you finish your meditation, draw a picture or write a poem to help remind you of your interdependence with Earth.



LOGIC PUZZLE

The same two vowels have been plucked from these three related words. Can you put the words back together?



FIELD STUDIES

When heavy rain comes to the countryside, water soaks into the soil and/or flows to creeks and streams, and while rural waterways can become overwhelmed by too much rain and flood, where does heavy rain go in an urban environment?

Go on a virtual journey to a city in the Anacostia Watershed to understand the impact of urbanization on water quality: <https://youtu.be/pv8Ma-6RzxU>

On your journey, make a list of nature-based solutions that can lead to sustainable cities.

Using spoken word poetry, visual art, or another form of creative expression, make a statement about how human influences impact water quality and possible solutions that benefit both humans and the environment.



RESEARCH EXPLORATIONS

Everything is connected is the first Law of Ecology.

In the center of a sheet of paper write the words "7 Billion People and Growing" in a circle. Now consider, what might be some of the environmental and ecological effects of this growth?

Draw arrows off the circle and write one effect. An example might be "more cars on the road." Circle this effect and continue making a chain. In other words an effect of "more cars on the road" might be "more air pollution" which might lead to "more research in alternative energy." Once you can no longer add to a chain. Start a new chain.

Once you have completed your concept map, find two news articles that make the connection between population and other items on your map. One article should be on a global scale and one on a local scale. Write a short summary of the article, 4-5 sentences.



MATH

The interdependence of honeybees and man has been well documented. Bees help establish biodiversity which establishes a stable environment. Learn more about this at the following link: <http://www.fao.org/tempref/docrep/fao/012/i0842e/i0842e04.pdf>

Honeybees use the hexagon to build its honeycomb because it is the most economical choice. Hexagonal shape gives the honeycomb the smallest lateral surface area and the maximum capacity. Draw a triangle, square, and hexagon with the same perimeter. Find the area of each. Explain how this supports the honeybees' decision.

Why would an octagon not work? Graph each shape on a coordinate grid or use Desmos to graph.

Watch the video to learn more about how bees can do math: <https://www.youtube.com/watch?v=tVehrW94cz0>



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PUBLIC INSTRUCTION



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K-12

Interdependence Reference Guide

2-3 Field Studies:

To learn more about ovenbirds: <https://www.audubon.org/field-guide/bird/ovenbird>

4-5 Math:

Link for more math puzzles: <https://www2.stetson.edu/~efriedma/published/cross2/index.html>

6-7 Logic Puzzle:

Answer: lime,line,fine,fire,wire\

6-7 Science:

Based on a lesson written by the Kentucky Farm Bureau

8-9 Mindfulness:

Use the link to learn more about Chief Seattle: <https://historylink.org/File/1427>

8-9 Math:

Link to create a hexagon on Desmos: <https://www.youtube.com/watch?v=l6brztHaKIA>

Use function notation to describe transformations that would create economically efficient honeycombs.

10-12 Logic Puzzle:

Solution: S is the father of T who is the sister of R, hence R and T are siblings. R is the brother of U, so R is male.
Therefore R is the son of S.

Try additional problems on Smartkeeda! https://www.smartkeeda.com/Reasoning_Aptitude/Verbal_Reasoning/Blood_Relations_Quiz/newest/all/passage/Blood_Relation_Quiz_4/page/2

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Interdependence NC Standards Alignment

Grade Span	English/ Language Arts	Social Studies	Science	Math
K-1	RI.1.5 RI. 1.6	K.G.1.3 K.G.1	1.L.1.2	NC.K.CC.5
2-3	RL.3.7	3.C&G.2.1 3.I.1.8 3.I.1.10 3.I.1.11	3.P.1.1	NC.3.MD.1
4-5	RL.5.7	5.C&G.2.2 5.C&G.2.1	5.L.2.3	NC.5.OA.2
6-7	RL.6.3	7.E.1.1 7.E.1	6.E.2.4	NC.7.RP.3
8-9	RI.9-10.8	FP.C&G.3.4 CL.C&G.4	8.L.3.2	NC.M2.IF.2
10-12	RL.11-12.6	CE.E.2.2	Bio.2.1.3	DCS.GT.1