

ADVANCED LEARNING LABS

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

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES
10-12

Interdependence



ENGLISH LANGUAGE ARTS

"This planet is an exquisitely arranged and interconnected system. What's controlled in one place is going to have consequences in another place. Our job as gardeners is to try and figure this out no matter how small our allotted space might be. Discipline has to be the watchword for our controlling hands. It means not gardening without thinking of the garden as a habitat: for mice, for squirrels, for bees and wasps. For other living creatures beyond ourselves."

– Marjorie Harris In the Garden

Evaluate the impact of language as it relates to her audience and purpose. Design two-column notes. Write what the author SAYS in the left column and explain what the author MEANS in the right column.

Write a journal entry on how this quote contributes to your understanding of self within a larger interconnected system.



SOCIAL STUDIES

Globalization allows businesses and organizations to market their goods to other countries around the world. It has also created a dark side of trading: the illegal use and sale of goods. In 2019, US Customs processed \$2.7 trillion in illegal imports, equating to 35.5 million entries and more than 28.7 million cargo containers. The most common goods imported were watches, apparel, and handbags.

Using this information, create a news article or news report warning tourists about the dangers of illegal trading. <https://www.cbp.gov/trade/priority-issues/ipr>. Select FY 2019 Seizure Statistics Report at the bottom to see the latest report.

Details should include the pros and cons of globalization, the sale of fake goods, and a solution to curb illegal trading.



SCIENCE

The mutually beneficial relationship between two animals for various reasons is called symbiosis. Three types of symbiosis are:

1. Commensalism - an association between two organisms in which one benefits and the other derives neither benefit nor harm.
2. Parasitism - one organism lives in or on another organism that can cause harm
3. Mutualism - beneficial to both organisms involved

Read this National Geographic article for more insight on symbiotic relationships: <https://bit.ly/3fRh5bj>

Create a PowerPoint presentation about symbiosis. The presentation should include:

- Definitions
- Pictures of each symbiotic relationship
- Explanation of how the relationship is symbiotic
- The effects each relationship has on the ecosystem



MINDFULNESS

Mindfulness is the ability to be fully present, aware of where we are and what we are doing. During these stressful times, it is important to focus on self-care as well as those we depend on in our life.

Take a moment to practice mindfulness and gratitude with your family or someone close to you. Sit together in a comfortable space and position and mute anything that may make a sound. Think about something you are grateful for and share with your family. Then turn to the person beside you and share one compliment about them. That person, in turn, shares something and a compliment, and so on until everyone has had a turn.

Spend some time talking about the effect this activity had on you and your family.



LOGIC PUZZLE

Logical reasoning tests consist of words, diagrams, or numbers that follow a given sequence. Identify the pattern among the given figures and determine the one that will fit the sequence.

Solve this familial relationship problem:

1. $F + G$ indicates F is the brother of G;
2. $F - G$ indicates F is the sister of G and
3. $F \times G$ indicates F is the father of G

Which of the following means that R is the son of S

1. $S - T \times R + U$
2. $U - R + T \times S$
3. $T + S - U \times R$
4. $S \times T - R + U$



FIELD STUDIES

MN COVID-sitters was established by a group of medical college students looking to help others in response to COVID19. The program matches students with health-care professionals in the Twin City metropolitan area. As of now, they have babysat for 248 families, completed 148 errands, and took care of over 38 furry friends. For them, it really takes a village.

Have you noticed people helping others in your neighborhood during COVID-19?

- Make a list of the innovative ways people are helping each other in this time of social distancing.
- How would you improve or expand their service?

What can you do to assist your community?

Develop a plan of action to share with your peers and community leaders.



RESEARCH EXPLORATIONS

Seeing the Power of Interdependence

Watch the video to see how a young college student transitions from independent to interdependent through no choice of his own: <https://youtu.be/6JmkBW8Rb6A>

What is Leber's Hereditary Optic Neuropathy (LHOC)? <https://ghr.nlm.nih.gov/condition/leber-hereditary-optic-neuropathy>

Put yourself in Jeremy's shoes. Answer these questions:

- What would affect you the most?
- On whom would you depend?
- How does your condition affect those around you?



MATH

A vertex-edge graph is formed when points (vertices) and connections between the points (edges) connect.

<https://www.khanacademy.org/computing/computer-science/algorithms/graph-representation/a/describing-graphs>

Golden Air is flying extra nurses to hospitals across the U.S.

Mon: N.C. → D.C.; F.L. → T.X.

Tues: N.Y. → A.Z.; F.L. → D.C.

Wed: N.C. → T.X.; A.Z. → F.L.; N.Y. → D.C.

Thurs.: A.Z. → N.C.; N.Y. → D.C.

Fri: T.X. → N.Y.; F.L. → A.Z.

1. Create a vertex-edge graph of their flight path.
2. How does your graph explain how hospitals and airlines are interdependent?



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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