# Interdependence

## ENGLISH LANGUAGE ARTS

A diagram is a labeled drawing. The words and pictures are interdependent to help the reader understand the information.

Use the diagram and article to learn about a honeybee: https://www.enchantedlearning.com/subjects/insects/bee/Honeybeecoloring.shtml

- Write down three interesting words. Ask an adult if you need help pronouncing them.
- What information can you learn from the diagram that you cannot learn from the article?
- How do the diagram and article work together?

Choose something you understand well, like your pet or a toy, and draw and label a diagram. What is important to include?

## SOCIAL STUDIES

People depend on the land. The landforms and water around us influence our ability to grow food, build towns, travel, and find fresh water. People affect landforms too.

Watch this video to learn about basic landforms: https://www.youtube.com/watch?v=KWTDmg8OI_Y

Think about where you live. Make a list of landforms near your home. Ideas include mountains, hills, rivers, the ocean, lakes, valleys, and islands.
- How do these landforms affect the people who live there?
- How do the people affect the landforms?

Pretend you are one of the landforms. Write a letter to people explaining how they help you and harm you. Explain your job on Earth.

## SCIENCE

Plants and pollinators are interdependent. Pollinators are animals that drink nectar from plants. When they drink nectar, they move pollen allowing fertilization and the production of seeds for new plants. Pollinators need the nectar and/or pollen for food. Plants must have pollinators. Pollinators must have plants.

Visit a garden, field, or park near your home where there are many plants. Closely observe the plants for pollinators for 20-30 minutes. Keep tally marks for all the different kinds of pollinators you see: bees, butterflies, ants, hummingbirds, beetles, and others.

Record your observations in a science notebook. Create labeled diagrams or describe in words the plants and the pollinators that you see. What do your observations tell you about pollinators in your community?

## MINDFULNESS

Understanding interdependence can help us find connections between what has happened, how we respond, and how things might look different in the future.

Think of a time when you felt wronged by a situation, event, or person. How did you feel in your body? What emotions can you connect to those feelings?

Now consider how you handled that situation. What did you do? How did it make you feel?

Watch this video about square breathing: https://www.youtube.com/watch?v=YFdZXwE6fRE
- How do you feel after practicing square breathing?
- How might this type of breathing help you calm down when you feel stressed?

## LOGIC PUZZLE

Sam, Annah, Garrison, and Camille all have some money.
- Sam has 5 dimes.
- Annah has the coin of which 4 equal one dollar.
- Garrison has 10 cents more than Annah.
- Camille has 5 cents less than Sam.

- How much money do they each have?
- Order the amounts from most to least.
- If they added their money together, how much would they have?

## FIELD STUDIES

Plants and animals (including humans) are interdependent. Watch this video to learn the ways they depend on each other:
https://www.youtube.com/watch?v=YGxzFBRBwp

- What surprised you in this video?
- What would you like to learn more about?
- Think about your own relationship with an animal or plant. How are you interdependent?

Pick one of the relationships you noticed in the video and create a comic strip featuring two things that depend on one another. It can be a serious or humorous (funny) comic.

## RESEARCH EXPLORATIONS

Bees are an amazing pollinator and a perfect example of interdependence with plants. Honeybees are also interdependent on each other in their hives. One bee cannot live without all the other bees.

Watch this video to research how bees use pollen:
https://www.youtube.com/watch?v=sAKkjD3nEv0

Some people are scared of bees, but we also depend on them on Earth. Watch this video to research why we need bees:
https://www.youtube.com/watch?v=c963NhkfNY0

Use your research on bees to make a Public Service Announcement that convinces people to be nice to bees. Use details from this exploration to support your arguments.

## MATH

Explore the interdependence of patterns using a bag of colorful candies like m&ms or jelly beans.
1. Count how many candies you have in all.
2. Sort the candies into piles by color. How many are there of each color?
3. Create a pattern with two colors. How many candies did you use?
4. Create a pattern with three colors. Can you create more than one pattern with three colors?
5. After you have created patterns, how can you quickly determine the number of candies in each pattern? Is one counting strategy faster than another?
6. How can you use patterns to help you count?
7. Where else in life do you see patterns?

Share with a friend how parts of a pattern are interdependent.

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## TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

**GRADES 2–3**

# Interdependence

## ENGLISH LANGUAGE ARTS

Using a picture book of your choice, choose a page that has an amazing illustration. Cover up the words. Ask a friend or family member to tell you what's happening in the story at that point. Record what they say. Compare and contrast what they told you with the actual text.

With another family member or friend, read aloud the text on the page, but don't show the illustration. Instead, have them create the illustration. Compare and contrast their illustration with the one in the book.

Reflect upon how specific aspects of illustrations contribute to what is conveyed through the words in a story. How are the two interdependent?

## SOCIAL STUDIES

Interdependence is a state of mutual dependence, each element being equally important. Citizens should contribute politically, socially and economically to their community. Find examples of these contributions at this website: **https://www.uscis.gov/citizenship/learners/citizenship-rights-and-responsibilities**.

How are these contributions interdependent? Brainstorm your own list of ways citizens can contribute to their community politically, socially and economically.

Create an active citizen campaign poster or video demonstrating what it means to contribute to the community and how all the contributions of all citizens are interdependent.

## SCIENCE

Time keeping dates back about 10,000 years. Read about what caused people to have a need for keeping time and what role forces and motion have in a clock: **https://kids.britannica.com/students/article/clock/605080**

In this video, you will see the inner workings of clocks in action: **https://easyscienceforkids.com/clocks-time-video-for-kids/**

Make a list of forces and motions you saw. Is it all gravity? Think about what the gears and pendulums do. Notice how they work together for the clock to work, like a "chain reaction". 

Find objects in your home and practice creating your own chain reaction. Setting up dominoes to fall and hit one, then the next, is one way. What are other ideas you can think of?

## MINDFULNESS

Many people believe in a connection between the energy of the mind and body. Find a quiet spot to lie down comfortably, or sit-up if you prefer.

1. Start by focusing on your feet. Gently tighten the muscles in your feet and toes, hold for a few seconds and then release.
2. Then, move your focus to your calf muscles, tighten and release.
3. Continue this process all the way up your body. Repeat, if you like, for more relaxation.

Focus on how your body parts and energies are connected and interdependent. How do you feel? Did you notice a change in your thoughts, body or energy pre- and post- meditation?

## LOGIC PUZZLE

Solve these Emoji Math Equations from NASA!

Each line of the puzzle depends on how you solved the line before.

https://www.nasa.gov/audience/foreducators/iss-emoji-math-puzzle.html

Create your own emoji math puzzles for friends and family to solve!

## FIELD STUDIES

Interdependence is the degree to which two entities depend on each other.

Let's take a trip to the site of two red ovenbirds' nest and see how birds design, engineer and build their nests to meet their needs and how their nesting is interdependent on both biological and environmental factors: https://bit.ly/PBSovenbirds

- What type of weather are the ovenbirds dependent upon for their nest building?
- Why do the ovenbirds need to closely monitor the size of their nest as they build it?
- Describe the internal structure of the ovenbird dome. What is its major purpose?
- How is the concept of interdependence demonstrated?
- Share what you have learned with a friend or family member.

## RESEARCH EXPLORATIONS

Let's build a water clock!

While it might not be a good idea to get most clocks wet, this clock depends on water to work! A water clock depends on the speed of the inflow (water coming in) or outflow (water going out) of water to measure time.

There are a variety of ways to build a water clock:

https://youtu.be/boUl8MEaFWM

https://www.steampoweredfamily.com/activities/water-clock-stem-activity/

Create your own water clock. Use materials you have researched, or experiment with your own variation of materials. How can you alter the materials so that the water flows faster? Slower? Can you repeat the process with the same outcome for speed of water flow?

## MATH

People depend on time each day. Show this by creating an hour-by-hour schedule of your day. Try converting your daily schedule to metric time.

https://academickids.com/encyclopedia/index.php/Decimal_time

| Metric/Decimal Time | Standard Time |
|---|---|
| 10 hours per day | 24 hours per day |
| 1 metric hour | = 2.5 normal hour |

What math knowledge did you depend on to convert these measurements? Which way of keeping time do you prefer? Why?

Show your schedule to family members and ask their preferences.

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**GRADES 4–5**

# Interdependence

## ENGLISH LANGUAGE ARTS

Words and music are vital in creating tone and mood. This interdependence is evident in books on tape, podcasts and movies.

Using a book you just finished reading, or one you're reading currently, match two big events from the story with background music to capture the tone/mood/importance of the events you chose.

Create two pages/slides, one for each event. Each page/slide will have the following: title of the book, brief description of the event and its importance, title of the music you chose and explanation of why you chose it. Choose a cool background/visual to represent the setting during that moment, as well.

Share your creation with family and friends.

## SOCIAL STUDIES

Interdependence is a state of mutual dependence, with each element being equally important. Analyze the rights and responsibilities of United States citizens in relation to the concept of "common good" according to the U.S. Constitution using these two sources: https://www.britannica.com/topic/common-good

https://www.uscis.gov/citizenship/learners/citizenship-rights-and-responsibilities

Create a chart listing the characteristics of all three elements: rights, responsibilities and common good. How are they similar? Different?

How do these relate to the following quote: "*The true measure of any society can be found in how it treats its most vulnerable members.*" - Mahatma Gandhi. How do these elements relate to the concept of interdependence?

## SCIENCE

Interdependence in your yard: How are plants and animals interconnected?

Make a terrarium: https://www.theecologycenter.org/making-a-terrarium/

Observe over the next days and weeks. What are some examples of interdependence in your little ecosystem?

Create a poster/plaque as found in museums to teach viewers about what they can observe. Create other terrariums on paper, or with non-living objects to represent other types of ecosystems. Add these, with plaques, to your museum of ecosystems. Give your museum a name. Invite friends and family to view.

## MINDFULNESS

Many people believe in a connection between the mind and body, saying the two are interdependent. Think about a worry you have and create a simile or metaphor to describe the feeling. Examples: My shoulders are as tight as a guitar string, or my mind is a pinball machine.

Find a quiet spot to lie down or sit-up if you prefer. Start by focusing on your feet. Gently tighten the muscles in your feet, hold for a few seconds and release. Continue this process all the way up your body. How do you feel?

Create a new simile to describe your mind and body post meditation. Examples: My shoulders are as loose as a Shar Pei's skin and my mind is a quiet meadow.
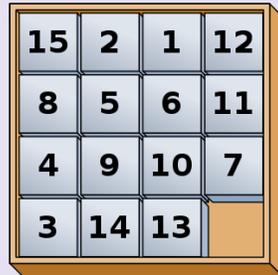
# LOGIC PUZZLE

**15 Puzzle**

Arrange tiles consecutively from 1-15. Tiles can only SLIDE (up and down, left and right).

You can find a virtual version here:

**https://lorecioni.github.io/fifteen-puzzle-game/**

You can also make your own using 15 squares cut and numbered. Arrange in a 4 by 4 grid. Puzzle pieces cannot slide outside the grid.

| 15 | 2 | 1 | 12 |
|---|---|---|---|
| 8 | 5 | 6 | 11 |
| 4 | 9 | 10 | 7 |
| 3 | 14 | 13 | |

You can also create an 8 Puzzle the same way, using a 3 by 3 grid instead.

# FIELD STUDIES

Interdependence is a mutual reliance and connectedness. Visit the Random Acts of Kindness website and read about the studies showing the mutual connection between health and kindness: **https://www.randomactsofkindness.org/the-science-of-kindness**

Become a "doctor of kindness" and create a "kindness prescription" for yourself, listing random acts of kindness that you could perform for your friends, family and others. As you do, keep a "medical journal" of how it makes you feel and reflect upon your own health.

Share your "research" with others and ask them to do the same. How are mood, health, anxiety and energy interdependent and how are they affected by the kind acts we do?

# RESEARCH EXPLORATIONS

Many feel that our society is interdependent, and the onset of COVID-19 shed light into just on whom we depend and in what ways we need to strengthen that interdependence.

Read this opinion article from the Seattle Times: **https://www.seattletimes.com/opinion/when-the-pandemic-passes-we-must-not-forget-those-who-helped-us-through/**. Think about the jobs they consider "essential." Consider the changes they mention that have taken place and still need to take place.

Discuss the changes your family has noticed since COVID-19. Think about what it means to be an "essential worker." Who are they?

What have you discovered is "essential" to you? Your family? Your town? What are the positives in this example of interdependence? What are some negatives?

# MATH

How is a math equation interdependent?

**Cross-Math**

| | × | | − | | = | 10 |
|---|---|---|---|---|---|---|
| − | | × | | × | | |
| | × | | + | | = | 6 |
| ÷ | | − | | − | | |
| | + | | − | | = | 3 |
| = | | = | | = | | |
| 1 | | 5 | | 7 | | |

Try solving this math puzzle. You know what the equation equals, but to solve you have to put in the missing factors, addends, minuends, subtrahends, dividends, and divisors.

Try making your own "Cross-Math" puzzle equations.

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

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**GRADES 6–7**

# Interdependence

## ENGLISH LANGUAGE ARTS

Jataka Tales are stories that have been told in South Asia for more than 2000 years. They are meant to teach the values of honesty, morality, and self-sacrifice, but are told in an amusing way.

Read the Jataka Tale "Interdependence:" https://docs.google.com/document/d/1oUeS5CBEV858ywesH5r3sdU2oTjtyy6eB983l5cCnLI/edit?usp=sharing

Explain how the tale unfolds in a series of events. How do the characters react or develop as the plot comes to a conclusion?

Create a timeline of events from the tale. On the lines between each event, explain how one event leads to another.

What is the moral of this story?

## SOCIAL STUDIES

The 18th-19th Century Triangular Trade was an example of several countries/regions being interdependent on one another. Follow the link to learn more about the Triangular Trade: http://abolition.e2bn.org/slavery_43.html. How did this trade impact the lives of the enslaved Africans? Who benefited directly from the work done by the slaves? Who benefited indirectly from the work done by the slaves?

Research further to determine how the Triangular Trade impacted the U.S. colonies. How did NC benefit from this trade? What crops or manufactured goods were a part of this exchange? How did the competition for resources affect these economic relationships?

Design a presentation in a format of your choice, showing how NC was impacted by the Triangular Trade.

## SCIENCE

Agriculture and the environment are interdependent in several areas: soil conservation, water quality and conservation, food safety, wildlife protection, integrated pest management, and wetlands. Research one of these areas to determine how farmers are practicing land management in your local area. Possible sources of information are local farmers, agriculture extension agents, vocational agriculture teachers, district soil conservation offices, NC Department of Agriculture and Consumer Services, etc.

After you have completed your research, develop some recommendations for safeguarding the environment based on what you have learned.

Now investigate how historical farming practices were different. How did they impact the land? How did this impact settlement?

## MINDFULNESS

Interdependence is the connection of humans and nature as well as the connection to other people. Think about your pencil. Think about all the people who had a part of creating it.
- How did you come to own it?
- How was it created?
- Who made the items that helped create your pencil?

Think about the wooden part of the pencil. Where did it come from? What went into making the metal part of the pencil? Can you envision it being molded in a factory? What about the graphite and the eraser? Think about how the pencil traveled.

Create a timeline or concept map to understand all the people who helped get your pencil to you.

As you go about your day think about all the people who helped shape the things around you.

# LOGIC PUZZLE

I am a fruit.

Change one letter and I am a long narrow mark.

Change another letter and I am dry weather.

Change a further letter and I am a domestic appliance.

Change one final letter and I am thin metal.

What was I and what did I become?

# FIELD STUDIES

While there is some debate about all the factors that make Earth a friendly home for us, all scientists agree that without water and an energy source (the sun), humans would not survive here. This is not true interdependence, however, because while humans need water and energy, the Earth does not need us to exist.

It has long been of interest, however, to wonder if there is life on other planets. Science fiction books and movies love to explore this theme. As NASA and other space agencies send probes to farther and farther destinations, everyone waits to find out if water, for example, has been found.

Explore this idea in the format of your choice. Write a short story about a planet where it and its inhabitants are truly interdependent OR research what has been discovered so far about the possibility of life on other planets.

# RESEARCH EXPLORATIONS

People and soil have been interdependent since the beginning of time. Soil influences our air quality, regulates temperatures, and helps get rid of waste. Humans could not survive without soil. You can learn more about the human benefits of soil here: **https://www.soils4teachers.org/soil-and-environment**

Farmers know better than anyone about the importance of soil health. Use the links from the USDA website to learn more about how farmers conserve our soil: **https://bit.ly/3hjCCts**

Create a flyer for your neighbors on how they can protect the soil in your area. Include why it is important, data to support your claim, and suggestions on the types of plants that can be used, as well as how to prevent erosion.

# MATH

The interdependence of populations makes it important to keep track of the different populations in a given region. Grasshoppers are food for mice which are food for bald eagles. It is important to understand the population of grasshoppers if we want to continue to see a rise in the bald eagle population.

Use the directions on the linked site to use the Mark and Recapture technique to determine the population of a species: **https://www.panthercountry.org/userfiles/267/Classes/608/Population%20Densisty%20Labs%20-%203%20Total%20Labs.pdf**

How did your sample populations relate to the actual population?

Create a line plot of each of your sample populations. What does the center and spread tell you about the actual population?

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**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.
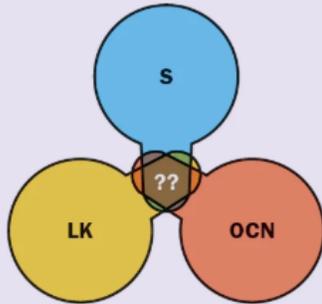
## MINDFULNESS

*"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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# 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 curve 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 x G indicates F is the father of G

Which of the following means that R is the son of S
1. S – T x R + U
2. U – R + T x S
3. T + S – U x R
4. S x 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?

North Carolina Department of
**PUBLIC INSTRUCTION**

AIG
ALL DAY, EVERY DAY

# 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**

# ADVANCED LEARNING LABS

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

## TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

**GRADES K–12**

# Interdependence
## NC Standards Alignment

| Grade Span | English/ Language Arts | Social Studies | Science | Math |
|---|---|---|---|---|
| **K-1** | RI.1.5 <br> RI. 1.6 | K.G.1.3 <br> K.G.1 | 1.L.1.2 | NC.K.CC.5 |
| **2-3** | RL.3.7 | 3.C&G.2.1 <br> 3.I.1.8 <br> 3.I.1.10 <br> 3.I.1.11 | 3.P.1.1 | NC.3.MD.1 |
| **4-5** | RL.5.7 | 5.C&G.2.2 <br> 5.C&G.2.1 | 5.L.2.3 | NC.5.OA.2 |
| **6-7** | RL.6.3 | 7.E.1.1 <br> 7.E.1 | 6.E.2.4 | NC.7.RP.3 |
| **8-9** | RI.9-10.8 | FP.C&G.3.4 <br> 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 |