

Perspective

Grades K-1

English Language Arts

A pun is a joke that is funny because a word has multiple meanings. For example, "the spider went to the computer to check his web site," is funny because web has two meanings. Understanding the pun depends on your perspective.

Listen to "The Hallow-Weiner" by Dav Pilkey and listen for the puns:

https://www.youtube.com/watch?v=g2QZl_nXZz0

- What puns did you hear? Why are they funny?
- What strategies did you use to figure out the meaning of the puns-context clues, word parts, or word relationships?
- What about Oscar's unique perspective was important in the story?
- How did the dogs' perspective of Oscar change from the beginning to the end of the story?

Write your own sentence, riddle, joke, or story using puns. Write your own sentence, riddle, joke, or story using puns.

Social Studies

Learning about traditions is a way we can gain new perspectives about a culture. Watch this illustrated video of a Cambodian folk song, and consider what perspective you gain about

Cambodian culture: <https://thekidshouldseethis.com/post/flower-dance-cambodian-folk-song-animation-music-video>

Now think of a song that has become a part of your traditions and consider what perspective it presents about your culture. Discuss with your family.

- What similarities do you find between the two songs?
- What differences do you find?
- How can music help you see things from a new perspective?
- What other traditions can help us learn about a new culture?

Science

Watch this video to see a year on Earth as seen from space:

<https://thekidshouldseethis.com/post/one-year-on-earth-seen-from-1-million-miles>

- How does Earth look different from space compared to when you are on Earth?
- How does the Moon look from Earth? What would it look like if you were an astronaut on the Moon?

- If you were close to the Sun, what would it look like? What does the Sun look like from Earth?

Some people say Earth is a marble in Space. This is called a metaphor (comparing a thing to something else it is not exactly like, but with which it shares a characteristic). Can you think of other metaphors for Earth, the Sun, or the moon?

Mindfulness

Things that impact our moods and attitudes can be influenced by our perspectives.

Watch this video about Mojo's perspective on a field trip his class is taking:

<https://www.youtube.com/watch?v=y2ePf66zne8>

- What type of mood was Mojo experiencing?
- How did Mojo's perspective influence his mood?
- What did Mojo learn about moods?
- What are some strategies Mojo could use to get in a better mood?

Can you think of a time when your mood changed as a result of changing your perspective?

Logic Puzzle

To solve these analogies, you will have to look at the shapes from a new perspective. In each puzzle the first two figures are related to each other in some way. Draw a figure that is related to the 3rd figure in the same way.

1. A blue circle is to a black circle, as a blue square is to ____.
2. Right is to Left, as Down is to ____.
3. An empty box is to a full box, as an empty bowl is to ____.
4. A small triangle is to a large triangle, as a small diamond is to ____.

Create a new shape analogy for someone else to solve.

Field Studies

Consider ordinary things from a new perspective. Watch this video of animals drinking water:

<https://thekidshouldseethis.com/post/animals-drinking-water-underwater-bucket-cam-field-lab-texas>

- How is the perspective different from what you would typically see if you watch animals drink water?
- What are some other activities that would look different if you viewed them in a new way?
- Make a simple drawing. Find a mirror and hold it so that you can view the drawing you made. How is this perspective different from looking at the drawing directly?
- What careers require workers to view things from multiple perspectives?

Research Explorations

There are many details all around us that we cannot see because they are too small for our eyes to perceive. Watch this video to see the details of a butterfly's wing:

<https://thekidshouldseethis.com/post/45801134976>

Let's go on a nature walk. Safely collect some items such as a leaf, rock, pinecone, flower, or bug. Examine them closely. If you have a magnifying glass, use it to see the tiny details of your items.

- What do you notice?
- What do you wonder?
- Describe what you see up close in your science notebook.
- How does your perspective change your observations during scientific exploration?

Math

Venn Diagrams are a tool for sorting. Objects can be sorted in a variety of ways based on your perspective. Make two large circles out of yarn so they overlap like this:

- Cut out assorted shapes in a variety of sizes.
- Color each shape using at least three different colors. You don't need to color all the same shapes the same color.
- Think about the attributes by which you could sort them (shape, color, size).
- Put one set of shapes into the left circle. Put a different set into the right circle.
- Do any of the shapes in each circle share a common attribute? If so, move them into the shared space in the middle.

Challenge: Once you sort them one way, try looking at them from a new perspective and re-sort them into new categories.

Grades 2-3

English Language Arts

One way to gauge a character's perspective/ point-of-view is to think about what motivates or is most important to the character.

Become a "life coach" for one of the main characters in a book that you are currently reading or have read. Analyze the following areas that impact point-of-view, creating a "vision board" for the character with notes, pictures and symbols analyzing the following:

- age, race, and gender
- experiences, beliefs, and culture
- actions, thoughts, and words

This analysis can be used as evidence of the character's point-of-view and values.

Challenge: Create your own vision board, analyzing yourself according to the same criteria. Think about how you and the character are similar. Different?

What perspective are you coming from and what motivates you?

Social Studies

Important time periods and events throughout history involve many people - which means that the stories should be told from many different perspectives.

Choose a time period or event in our nation's history such as The Great Depression or Civil Rights

Movement. Listen to at least three narratives told from different perspectives regarding the time period or event. You can use these interviews from the Library of Congress and Civil Rights Digital Library to start:

- <https://bit.ly/39W9SVd>
- <https://bit.ly/2OAXsrG>
- <https://bit.ly/30h2lpX>

Create a triple Venn diagram (Ex: <https://bit.ly/30sHmr5>) comparing the point-of-view from which the story is told, the facts, experiences and feelings expressed in the stories.

What are commonalities that run through all three stories? What are the differences in perspective?

Science

The last time the United States experienced a total solar eclipse was on August 21, 2017. The ability to view any type of eclipse depends on your perspective, or where you are located, on Earth. A solar eclipse occurs when the moon is between the sun and Earth and blocks sunlight, which casts a shadow on Earth.

Who experiences solar eclipses? How often do they occur? Does everyone experience the same shadow?

NASA has more information here: <https://spaceplace.nasa.gov/eclipses/en/>

Video link to create your own solar eclipse viewer: <https://youtu.be/EM2pg-f6ORs>

Calendar of dates and sites for eclipse viewing:

<https://eclipse.gsfc.nasa.gov/SEdecade/SEdecade2021.html>

Mindfulness

This week you will create a gratitude photo album, slide show, or journal, taking pictures of simple things that you might often overlook, and instead looking at them through a new perspective - one of gratitude.

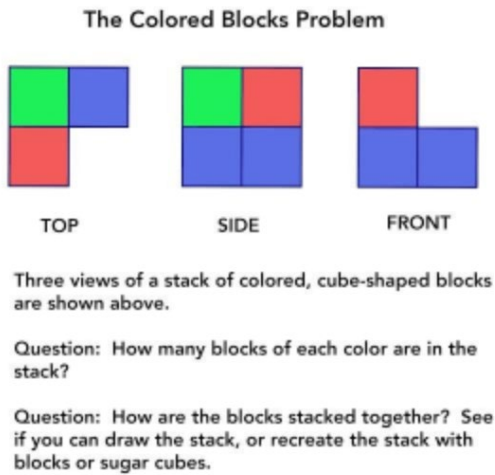
Each day your photos will focus on a different theme: food, family, the outdoors, toys, art, friends and music. At the end of the week, look through your pictures and create a photo album, slide show or

journal filled with the pictures you took of simple, everyday things that with a change in perspective, aren't so ordinary to you anymore.

Share the album with a family member or friend and explain why you're grateful for these things. Challenge them to look at things from a new perspective and create their own gratitude albums.

Logic Puzzle

The Colored Blocks Problem



Three views of a stack of colored, cube shaped blocks are shown above.

Question: How many blocks of each color are in the stack?

Question: How are the blocks stacked together? See if you can draw the stack, or recreate the stack with blocks.

Field Studies

Visit the Museum of Modern Art (MoMA) in Manhattan, N.Y., by clicking here:

<https://www.moma.org/audio/> and choose an art piece that you like.

Wait to read or listen to the explanation about the piece. Instead, look closely at the piece (zoom in if you're able) and do the following:

- List what you see with your eye.
- Next, list what you think might be happening based on what you've seen.
- Then list what you wonder, asking broader questions that push beyond what can be seen.

How has your perspective about the piece changed after analyzing it? Now, read about the art piece and listen to the explanation. How does this impact your perspective?

Research Explorations

Optical illusions are images that use color, light, and pattern to "trick" our brain's shortcuts. Our eyes take in light and special cells that communicate to our brain to tell us what we are seeing. For this to happen quickly, scientists say our brains take "shortcuts." Optical illusions occur when our brains can't quite make sense of what is happening. Therefore we see movement when there isn't any, or colors that aren't really there.

Art is one way to create an optical illusion. Perspective art is a type of art that, while 2D, appears to get closer to you or farther away. Create your own perspective art using this link to learn several easy ways to do so: <https://www.youtube.com/watch?v=WXlg8bgQeqU>

See more optical illusions: <https://bit.ly/2CFyTHN>

Math

Perspective means seeing something from a certain point of view. Numbers can be used to express your point of view, but it's also important to consider what the numbers represent. Consider this scenario:

Jamal and his little sister Kyndra have screen time each Sunday evening before bed starting at 7pm. Last Sunday, Jamal spent $\frac{1}{2}$ his time watching a movie, and the other half on his iPad. Kyndra spent $\frac{3}{4}$ of her free time on her iPad, and $\frac{1}{4}$ of her time watching her favorite show. The next day, Kyndra and Jamal are arguing about who spent more time on their iPads.

Mom confirms that Jamal spent more time on his iPad. But how could this be? Jamal only spent $\frac{1}{2}$ of his screen time on the iPad and Kyndra spent $\frac{3}{4}$ of her time. Under what circumstances would $\frac{1}{2}$ be more than $\frac{3}{4}$? What are other examples where $\frac{1}{2}$ is more than $\frac{3}{4}$?

Grades 4-5

English Language Arts

Perspective is impacted by many things such as age, gender, race, experiences, beliefs and culture. A narrator's or speaker's point of view influences how events are described.

Choose two novels you've already read, or two that you'd like to read, that take place during the same historical time period, such as The Great Depression, World War II or the Civil Rights movement. Analyze the age, gender, race, experiences, beliefs and culture of the narrator of each story.

Using your notes, create a historical mural created through the eyes of the narrators of each story. The completed mural should include both perspectives about the time period in which the stories are set and should capture both the differences and similarities in perspective.

Social Studies

Read about the life of American Indian groups in North Carolina before and after European exploration: <https://www.ncpedia.org/american-indians/before-europeans>

After reading, "step inside" the perspective of an American Indian living in NC **before** the Europeans arrived. Place yourself within this context and "become" this person as you write, reflecting upon the following questions: What can you see or notice around you? What might you know or believe? What might you care deeply about? What might you wonder about?

Complete the same reflective writing exercise from the perspective of an American Indian in NC **after** the Europeans arrived, asking the same questions from this new perspective. Compare the two perspectives. How are they similar? Different? Create an image to represent each perspective.

Science

Rainbows are circles? Yes! From our perspective we see an arch because the ground absorbs the bottom half of the circle of light. However, rainbows are not the only phenomenon that occur naturally in the sky. Sun Dogs, or parhelion, occur in winter when the sun's light refracts off ice crystals. Have you seen a sun dog?

Learn more about sun dogs here: <https://wonderopolis.org/wonder/what-is-a-sun-dog>. Ask if anyone in your family has ever heard of sun dogs? If not, explain what you've learned to them. While the word "rainbow" can be traced back to the Old English "renboga" (rain + bent or arch), it is not certain where the term "sun dog" came from.

Create a story to explain the term from the perspective of a scientist who is seeing one for the first time.

Mindfulness

Gratitude is the expression of appreciation for what one has. Recognizing that something has value separate from monetary worth sometimes requires a change in perspective.

Journal through photos this week, using the perspective of gratitude. Each day your photos will focus on a different theme: energy, people, nature, play, beauty, comfort and music. At the end of the week, look through your pictures of simple, everyday things that, with a change in perspective, aren't so ordinary to you anymore.

Create a presentation of photos and include a poem that captures how this exercise changed your perspective. Share your presentation with a family member or friend, explaining why you're grateful for these things.

Logic Puzzle

Three cars (pink, blue, and red) drive on a highway twisted into a Mobius strip, as shown below. If each car stays in its lane and if they all drive exactly the same speed, what will happen? Will the cars meet each other?



Three cars (pink, blue, and red) drive on a highway twisted into a Mobius strip, as shown below. If each car stays in its lane and if they all drive exactly the same speed, then what will happen? Will the cars meet each other?



Field Studies

Visit Tate Gallery in London and choose an artist or style of art that you would like to learn more about:
<https://www.tate.org.uk/kids/explore>

Before reading or listening to the explanation about the art piece you have selected, look closely at the piece and do the following:

List what you see or can observe with your eye. Record what you think might be happening based on what you see. Then list what you wonder, asking broader questions that push beyond what can be seen.

How has your perspective about the piece changed, after analyzing it? Now, read about the art piece and listen to the explanation. If you are able, see what you can learn about the artist as well. How does this impact your perspective?

Research Explorations

Our individual perspectives shape our opinions and how we view the world. However, our perspective can create bias. For instance, people often confuse "correlation," a relationship or connection between two variables and "causation," one thing caused another.

Example: Every time I flipped a quarter with my right hand, it landed on heads. Does this mean flipping the quarter with your right hand caused it to land on heads? What if I told you I only flipped the quarter once? Is that convincing? What if it happened 1,000 times? More convincing?

Experiment with your own bias: According to the Kids Count Data Center, 57% of "Young Children" are not in school. What is a positive statement/perspective you can make about this data? Negative? Which perspective do you most agree with? Why?

Math

The Museum Problem

The diagram below shows the floorplan of an art museum. Two guards stand in corners of the room (where the red dots are). What part of the room can't the guards see from where they stand? Assume they can see 360 degrees around but (obviously) not through walls.



Is it possible to place the two guards so that they can see the entire museum? If so, where should they stand?

Grades 6-7

English Language Arts

Select a novel or short story to read. While you are reading, analyze what different characters do, say, and think throughout the text to determine how the author has developed and communicated his/ her unique perspective.

Track the characters using a chart. Label the columns: character, character's perspective, and how the author develops that perspective. After you have collected this information and analyzed it, evaluate what techniques the author used to develop different perspectives.

Was it effective? Why or why not? Explain in a short essay.

Social Studies

Sometimes our perspective on historical figures changes over time. For example, North Carolina Governors Zebulon Baird Vance and Charles Brantley Aycock were both popular and successful governors. Both have many schools named after them, you can visit both of their childhood homes as state historic sites, and Vance even has a county named for him.

In the 21st Century, however, they are not always viewed favorably. Many citizens have advocated for their names to be removed from monuments and schools. Research why the perspective on these two individuals has shifted over time.

Could individuals we honor today be considered inappropriate for honor in another hundred years? Record a podcast discussing this controversy and how perspectives shift over time.

Science

Imagine you are a farmer who grows large crops of corn to sell. You must decide if you will use insecticides, herbicides, and fertilizer to address issues such as pests, weeds, and soil infertility. Keep in mind the impact of your choices. Read to see how common these practices are in the United States:

<https://bit.ly/3eTfRe0>

If you choose to use these products, what will happen to these chemicals when it rains? Could your neighbors be impacted? If your crops fail, how will people shopping for fresh corn be impacted?

Make a diagram or chart recording the different stakeholders involved and their opinions on how corn is grown. Which stakeholder's perspective should be followed, if you are prioritizing the health of humans as your deciding factor?

Mindfulness

Artist Alex S. MacLean takes photos from a different perspective. As a pilot MacLean spends a lot of time looking at the world from the air. Watch this video about MacLean's work: <https://bit.ly/2CE4ARV>

See more of his artwork: <http://www.alexmaclean.com/>

After viewing MacLean's artwork, decide what you like or do not like about it. Why do you think MacLean chose to express himself in this way? How does the perspective change MacLean's art?

Take a picture or draw a picture from an unusual perspective. You could get super close or very far away. You could take the picture from above or below the item. Just be sure it is not the way your normally look at the object. Put your art somewhere to remind you to look at things from all perspectives.

Logic Puzzle

What makes a maze difficult to solve? Is it possible to look at a maze mathematically or is it dependent on the perspective of each person?

The eye can easily become lost in a set of parallel passages. Are you looking down on the maze, solving it by eye? With a pencil? What if you're walking around inside the maze? Try this one:

<https://bit.ly/3hwKBmP>

Now make your own maze using the online coding program, Scratch: <https://scratch.mit.edu/>

For help, try the video at this link: <https://bit.ly/3eSQucu>

Can't get enough of mazes? Check out 9 of the "Most Impressive Mazes You'll Find Around the World:" <https://www.rd.com/culture/impressive-mazes/>

Field Studies

When we look up in the clear night sky, we see stars, airplanes, maybe the moon, planets, possibly the International Space Station, and sometimes meteors (e.g., shooting stars). What would Earth look like if we had a different perspective? Study these photos:

- Historical photos: <https://go.nasa.gov/3hkpe8q>
- Satellite image: <https://epic.gsfc.nasa.gov/>
- Live from the International Space Station: <https://www.youtube.com/watch?v=EEIk7gwjgIM>

What do you notice from the images? What surprises you? Can you see landforms? Weather systems? Can you tell where one ocean ends, and another begins?

Reflect on these questions as you write a poem or create a piece of art to share what you have noticed about changing your perspective of the night sky to include Earth.

Research Explorations

How has space flight changed the men and women who have taken this unique journey? Listen to former NASA astronaut and NFL linebacker, Leland Melvin, talk about how going to space changed his perspective on life: <https://youtu.be/Ie-UZ5MR7F4>

Read the testimonials from NASA scientists about how man's journey into space has changed their perspectives and influenced their careers:

<https://earthobservatory.nasa.gov/features/EarthPerspectives>

Create a children's book which tells the story of seeing Earth from space and the difference it makes in people's perspectives on life. Include illustrations in your children's book that will be sure to engage the reader.

Math

Watch the video to learn how to create a perspective drawing with one vanishing point. Practice drawing prisms from different angles:

https://www.youtube.com/watch?v=zrLBNYA_KNE&feature=emb_logo

Once you have practiced drawing, plot the points $(-3,4)$, $(-3, 10)$, $(-8, 4)$, and $(-8,10)$ on a coordinate grid. Use the x-axis as the eye-level line and use the origin as the viewpoint. Use your new skill to create a perspective drawing for the rectangle you plotted.

Reflect the original rectangle over the y-axis and the x-axis to create more perspectives. How are your drawings similar? Different? Add to your drawing to create a piece of art.

Grades 8-9

English Language Arts

When analyzing literature, consider the difference in point of view and perspective. Point of view is the narrator's position in the story while perspective is the lens or attitude through which we see things.

Read "The Gift of the Magi" by North Carolina native William Sydney Porter, who wrote using the name O'Henry: <https://www.classicshorts.com/stories/magi.html>

Use a Venn Diagram to compare and contrast what either Delilah or Jim knows, thinks, and feels to what you know and feel as the reader. To support your thinking, include text evidence.

- How do these different perspectives (i.e., that of the character and that of the reader) affect the mood of the text for the reader?
- Was the author successful at creating suspense or humor? Explain.

Social Studies

Primary documents help us to better understand different perspectives in history. Complete this lesson published by the New York Times in collaboration with the Smithsonian's National Museum of African American History and Culture. Through a series of artifacts and primary documents (the essay), consider the perspective of the individuals who were enslaved. In your journal reflect on the questions that are asked in the lesson.

Lesson: <https://drive.google.com/file/d/1N0n02yHUe5EOwt2KTsoh8K5mfirbLX3z/view?usp=sharing>

Primary sources needed to complete the lesson:

<https://drive.google.com/file/d/1RWWg1U40XwBISJOE4vHI0lqXTBOX29VI/view?usp=sharing>

Science

A study in 2017 in a rural county in Alabama showed 35% of septic systems were failing and 15% of these homes were straight piping raw sewage into streams, creeks, or ditches. Raw sewage contains pathogens that contaminate local ecological systems and sickens humans and animals.

A homeowner can receive a hefty fine for purposefully dumping raw sewage, but fixing a failing septic system can cost more than \$20,000. For most Americans, this is not an affordable cost, which is why they may risk a fine.

Research this situation. Propose a solution to the problem so that water quality can be preserved without bankrupting citizens. Prepare a presentation to a stakeholder who can help to implement your plan.

Mindfulness

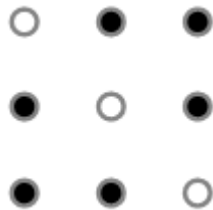
Gratitude journals are a great tool to help you keep track of the good things in your life. Journaling can give you a new perspective on what is important to you and what you truly appreciate in your life, and it is very easy to do. The difference between a mindful gratitude journal and just journaling is the focus on gratitude.

Gratitude journaling is best when you only do it a few times each week. Before you begin journaling, take time to think about what you are grateful for. Start with just one to three things each time you journal. Really go into depth instead of trying to make a long list. Be sure to include why you are grateful. Reflect on what your life might be like without the blessings you are writing about.

Logic Puzzle

Minarets are towers from which Muslims are called to prayer. The oldest minaret dates back to 724 and was built in Tunisia in North Africa. Minarets in the utopian downtown of New Istanbul were built to be so beautiful that it was the law that from every minaret, every other minaret may be seen. When the downtown was small this was relatively easy.

Here is the problem for you to solve: <https://bit.ly/3fVfkVF>



As the city grew, the building of the minarets became more complicated. You can see an incorrect way to place eight minarets. Can you find one of two correct placements of the minarets?

Create a placement design for 10 minarets in a 20 x 20 grid. What is the maximum number of minarets you can place?

Field Studies

Prior to the Renaissance, European paintings were symbolic rather than realistic. Important figures were shown as larger than others. Starting in the 1400s, artists began using perspective to create an illusion of space and depth.

There are several kinds of perspective:

- **Linear** - using converging lines and vanishing points that make objects appear smaller the farther away from the viewer they are.
- **Aerial** - painting things in the distance with a lighter or cooler hue.
- **Foreshortening** - making an object recede into the distance by shortening its length.

Create two drawings or paintings of the same subject. Create one trying to use the technique of perspective and one without perspective. For additional information, visit this link:

<https://bit.ly/2CXwbNS>

Research Explorations

Forced perspective is an illusion used to make an object seem farther away, closer, larger, or smaller than it actually is. Search Google images for some forced perspective images. Were you able to determine how the illusions were created?

Check out this video for the mathematics behind forced perspective:

https://www.youtube.com/watch?v=pl4ah_HvWkg

Watch to see how to use forced perspective to create a scene from *The Hobbit*:

<https://www.wired.com/2012/12/how-to-make-a-hobbit-with-forced-perspective/>

Research different ways to create a forced perspective illusion and use your research to create several photos. Create a gallery of forced perspective art to share with others.

Math

Veronica is making patchwork cushions. She uses material cut into triangles and squares in the pattern shown in the picture. The back of the cushions are made of plain material and are not patchwork.

Veronica makes many other sizes. For a visual of Veronica's cushions, use this link:

<https://bit.ly/2OL6XF5>

Write a function to help Veronica determine the number of triangles she needs for different sizes of cushions. Explain how you figured it out. Write a function to help Veronica decide the number of squares for different sizes. How does your function model the cushions Veronica is making? Create a function with a different structure. The new function should give you the same result but should be written in a different format.

Which function best models Veronica's cushion-making situation? Explain your reasoning.

Grades 10-12

English Language Arts

Choose a selection written by a British author after 1950. Highlight words in the text that engage you in different ways, including words that create vivid imagery or make you want to read more.

Write a letter to your English teacher about these word choices and how your perspective of the text would be different if the author had chosen other words.

How did these word choices contribute to the meaning of the text? What language did you find particularly engaging? What made this language engaging?

Would the meaning of the text change if you rewrote it from your perspective by replacing the previously selected words with modern or slang verbiage?

Social Studies

Create a comic based on your analysis and perspective of the importance of a conflict or compromise in American History.

Select a conflict or compromise from American History. Be sure to examine primary sources such as oral histories or historical documents to help make your comic historically accurate.

A great resource for primary sources is the Library of Congress - <https://www.loc.gov/>

Your comic strip should contain:

- 4-6 panels
- Explicit statement of the conflict or compromise you are researching.
- Statement of how this conflict or compromise has shaped American politics, economics, or culture.
- A Works Cited page that includes at least 2 primary sources.

Science

Research the importance of the ant population in a local ecosystem.

- How have they sustained themselves over time?
- Why are they an important contributor?
- What is your perspective on the importance of the ant population?

Write a speech or song from the perspective of an ant, persuading others of its importance in the local ecosystem. Be sure to include how you have contributed to the stability of your ecosystem and kept your ecosystem stable over the centuries.

For fun – a typical day on the Smithsonian Entomology Ant Cam:

<https://www.ustream.tv/recorded/61345262>

Mindfulness

Create your own “My Perspective Map.” Use this as a graphic tool to help understand what shapes you as an individual.

1. Write your name in the center of a sheet of paper and circle it.
2. Answer these questions by writing around your name on the paper:
 - o Who am I?
 - o What describes me?
 - o How do I portray myself to others?
 - o What do others think of me?

After your map is complete ask the following:

1. What could change on my map?
2. How much control do I have over these changes?
3. How might changes on my map affect decisions I make in life?

Record your answers in a journal.

Logic Puzzle

A Ping Pong Ball in a Hole

Your last good ping pong ball fell down into a narrow metal pipe, embedded in concrete, one foot deep.

How can you get it out undamaged, if all the tools you have are your tennis paddle, your shoelaces, and your plastic water bottle, which does not fit in the pipe?

Field Studies

Many consider the life and work of designer Eva Zeisel captivating.

Use her motifs and patterns as inspiration to design your own tessellating pattern using a potato stamp and acrylic paint. Follow the directions from the Smithsonian Design Museum here:

<https://s.si.edu/2CuKhXd>

After completing your potato art, answer the following:

- How do you feel about Eva's perspective when you think of tessellating patterns and usefulness of her artwork?
- What does this pattern and your color selection say about your perspective?

Research for more information about Eva Zeisel and her artistic perspective through the Museum of Modern Art: <https://www.moma.org/>

Research Explorations

Look for things that are of interest to you – figurines, pages from an old book, rocks, etc. Create your own "World In A Box" of things that symbolize your unique perspective. All you need is a box, glue, tape, and interesting odds and ends. This link provides examples: <https://hirshhorn.si.edu/explore/a-world-in-a-box/>

On an index card answer the following questions:

- Why did you include the items that you selected?
- Analyze these items. What do they tell you about your perspective of things that are important to you?
- What does this perspective tell you about yourself?

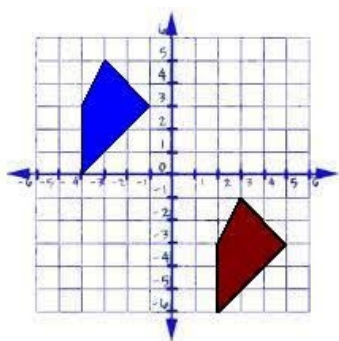
Tape your index card on the back of your box for future reference, and share with someone what you learned about yourself during this project.

Math

Perspectives can change in mathematics, through transformations. We will begin with parallelogram ABCD with coordinates A(4,-4), B(8,8), C(15,3) and D(8,-1). Consider the following transformations and predict how the lengths, perimeter, area and angle measures will change:

1. A rotation of 270° counterclockwise about the origin.
2. A dilation of scale factor 5 about the origin.
3. A translation to the right 6 and down 4

How does your perspective change with each transformation? Which transformations preserved the size and/or shape, and which did not? Generalize: Which types of transformation(s) will produce congruent figures?



Reference Guide

2-3 Logic Puzzle:

Solution: If we assume that the blocks are stacked without any glue, then this is the configuration of the blocks, with 3 blue, 1 green and 1 red.

If we assume that the blocks are fastened together in some way, then we don't need one of the blue supporting blocks from the bottom layer.

4-5 Logic Puzzle:

Solution: The blue car and red car will crash into each other. They are in the same lane going in opposite directions. The pink car is safely in the other lane.

One way to see this is to cut the two lanes apart. You end up with a single strip of paper, but this time it is twisted twice, so it is no longer a Mobius strip. (It has 2 sides rather than 1.) You can see from the photo that the red and blue cars are on one side of the strip, heading toward each other.

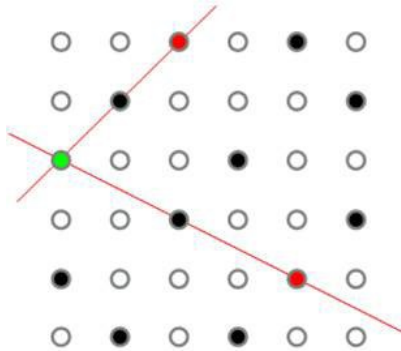
4-5 Math:

Answer: https://drive.google.com/file/d/13csWWKfqDkr_NvB2d8-yW3-3kpEyBi8m/view?usp=sharing

Source: <https://www.1001mathproblems.com/search/label/2D%20spatial%20reasoning>

8-9 Logic Puzzle:

Solution:



10-12 Logic Puzzle:

Solution: All the tools are random things that are not going to help you. All you have to do is pour some water into the pipe so that the ball swims up on the surface.