**The Art of Comprehension Part 1 Notes**

1. Welcome to the Art of Comprehension, a presentation based on the book of the same name authored by Trevor Bryon. We will be exploring visual art and texts to foster comprehension, conversation and confidence. There are activities found throughout this presentation that can be used with large groups.

2. The Art of Comprehension is published by Stenhouse. It is an easy read with many visuals and classroom applications.

3. Hi! We are Erin O’Connor and Alicia Foy from the Bureau of Standards and Instructional Support at the Florida Department of Education. Our role as Fine Arts and Content Area Literacy specialists are to collaborate with partners across the state to bring awareness of Fine Arts and content area literacy. Today we will be bringing awareness to integration of visual arts and literacy.

4. Our objectives are to:

* Understand comprehension similarities between visual art and literacy
* Review integrated visual arts and K12 ELA anchor standards
* Apply similar comprehension skills needed for art and reading comprehension
* Utilize Bryan’s frameworks with an art piece

5. This slide contains two of Tyler and Likova’s quotes:

*“inspiration can turn almost any occupation in life into an avocation, a source of satisfaction in achieving life goals”*

*“inspiration may be viewed as a potent aspect of human experience in linking art and science”*

These neuroscientists are completing research on the role of visual arts in enhancing the learning process. They have been working on studies of art, creativity and learning.

Tyler and Likova state, “Learning in the domain of visual art, is reliant on a complex system of perceptual, higher cognitive, and motor functions with strong potential for cross-cognitive transfer in learning and creativity” (2012). It is the cross-cognitive transfer that we will be focusing on through art and ELA.

6. Listen to the reading passage on pages 1-5 Dragons Love Tacos: <https://www.youtube.com/watch?v=7ItaYeSJQX4> Next, complete a quick draw within 2 minutes that explains the main idea of pages 1-5.

7. The art piece on this slide from the Dragons Love Tacos book shows a blue dragon with an orange head and wings holding an invitation that says: You’re invited. Taco party for Dragons! The dragon has circled a date on the calendar in red pen.

Complete a post-it jot that explains the main idea of the art work.

Notice any similarities in thought processes you found when completing the quick jot and quick draw.

8. When comparing art with literacy, there are many similarities. Both engage the person and require processing of prior experiences and relationships to the world. Both can spur on the imagination and facilitate perspectives from different views. By doing the quick draw you experienced some of the similarities. The brain is required to work in a similar way when trying to understand what the author or artist is conveying. Both require a higher level of critical thinking and connection making.

9. In the three boxes on the left of the slide, all of the visual arts standards that relate to literacy from Kindergarten to grade 12 are listed. The box on the right shows the K-12 anchor reading standards. LAFS.K12.R.3.7 is the Florida literacy standard that requires a student to integrate and evaluate content presented in diverse media and formats. The K-12 anchor reading standards chosen for this presentation are:

R1.2 Central Idea, supporting details and ideas

R1.3 How and why individuals, events, and ideas develop and interact over the course of a text.

R2.6 Point of view or purpose shapes the content and style of a text. [CLICK}

**R3.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.**

R4.10 Read and comprehend complex literary and informational texts independently and proficiently.

10. Many of the skills needed for comprehension in art are:

* Decoding
* Previous experience
* Determining tone; mood
* Making connections
* Understanding use of symbols
* Finding the theme

Many of the skills needed for comprehension in literacy are:

* Decoding
* Previous experience
* Determining tone; mood
* Making connections
* Understanding use of symbols
* Finding the theme

11. *“The need for inspiration is something that is well understood by the best teachers, who have the knack of conveying it to their students”* (Tyler and Likova, 2012)

Inspiration comes from multiple sources, much of it through comprehension of visual and literary arts; taking the piece and applying it to our own perspectives. Great teachers can assist students with understanding and application to achieve inspiration.

12. Large Group Art Appreciation Activity “Snowball Fight”

Analyze the art piece on the next slide.

* On a piece of paper, write down your thought, idea, hashtag, motto, takeaway, about the piece of art.
* Wad up the paper into a snowball
* As a group, make a circle or divide into sides
* Have a snowball fight
* Each person picks up a snowball and reads what someone else wrote about the art

This activity makes it easy for everyone to have a voice with anonymity since no one is reading their own thoughts. The ideas of others bring multiple opportunities to discuss different viewpoints.

13. This slide is a picture of Mark Messersmith’s *Scenic Anxieties.* His website is <https://markmessersmith.com/home.html>

14. This activity is a reading comprehension jigsaw and is part 1 of a 2- part activity.

A large group will need to be divided up into smaller groups. Each smaller group will receive the same text passage to read. There are 5 different passages to be distributed among the small groups. Fiction, Social Studies, Science, Math, Engineering. Each table receives the same article. All the same passages join together to discuss their ideas, focusing on the list below to create a chart or write on back of laminated page for each of the content area criteria:

* Symbolism
* Engagement/ Prior Knowledge
* Relate to self/world
* Mood
* Theme

Groups will share out their findings from each of the different passages. High school level text passages from each of the content areas listed have been shared at the end of these notes.

15. Part 2:

Five different art pieces are distributed to the large group, giving each small group the same piece of art. Groups discuss their ideas, focusing on the list below to create a chart or write on back of laminated artwork for each for each of the content area criteria:

* Symbolism
* Engagement/ Prior Knowledge
* Relate to self/world
* Mood
* Theme

Groups will share out and notice similarities between the reading and art comprehension jigsaw activities. Copies of the artwork examples have been shared at the end of these notes.

16. Trevor Bryon created a framework that can be applied to art and literacy comprehension. His framework for analyzing an artwork includes listing at least 20 things seen in the image and determining the mood of the artwork. Finding the cause of the mood and symbolism will help in determining the theme. Thinking about what happened prior to, what is happening now, and what might happen in the future from the art piece helps a viewer develop a deeper understanding when making critical connections.

All of these steps can be readily applied to comprehending a reading passage or when composing a written piece.

17. This slide introduces Trevor Bryan and his students at Elms Elementary School in Jackson Township, New Jersey working through the frameworks in a short 5-minute video. <https://florida.pbslearningmedia.org/resource/cc13.pd.ela.artcomp/art-of-comprehension/>

**Permitted use:** Stream, Download and Share

Media Credits:

Classroom Close-up, NJ is co-produced by NJEA and NJTV.

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18. Looking at Mark Messersmith’s *Scenic Anxieties* art piece on slide 19, work through the frameworks.

* List at least 20 things in image
* Determine mood
* Determine what is causing the mood
* Determine the theme
* Find symbols
* Determine time frames
* Make connections if…..then, if….when, if….why

How could the frameworks be extended into writing and speaking activities with students in the classroom?

19. This slide is a picture of Mark Messersmith’s *Scenic Anxieties* to be used with slide 18*.* His website is <https://markmessersmith.com/home.html>

20. Reflection Quick Think/Share

* In *Dragons Love Tacos*, what similarities did you find between art and listening comprehension in the quick draw/quick jot activity?
* What similarities did you find between art comprehension and reading comprehension in the jigsaw activities?
* How will you use the frameworks strategy with your classes?

21. Citations:

Bryan, T. (2019). *The art of comprehension*. Portsmouth, NH: Stenhouse Publishers.

Tyler, C. & Likova, L. (2012, February 8). The role of the visual arts in enhancing the learning process. *Frontiers in Human Neuroscience.* Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3274761/>

22. Thank you for your time and participation today!

Please contact Alicia Foy Content Area Literacy/Gifted Specialist at [Alicia.Foy@fldoe.org](mailto:Alicia.Foy@fldoe.org) and

Erin O’Connor Fine Arts Specialist at [Erin.O’Connor@fldoe.org](mailto:Erin.O’Connor@fldoe.org)

23. [www.fldoe.org](http://www.fldoe.org)

Examples of artwork samples for jigsaw activity on slide 15:



**The Art of Comprehension Part 1 Excerpts**

**Science excerpt from *A Short History of Nearly Everything***

Chapter 1 How to Build a Universe

NO MATTER HOW hard you try you will never be able to grasp just how tiny, how spatially unassuming, is a proton. It is just way too small.  
  
A proton is an infinitesimal part of an atom, which is itself of course an insubstantial thing. Protons are so small that a little dib of ink like the dot on this i can hold something in the region of 500,000,000,000 of them, rather more than the number of seconds contained in half a million years. So protons are exceedingly microscopic, to say the very least.  
  
Now imagine if you can (and of course you can't) shrinking one of those protons down to a billionth of its normal size into a space so small that it would make a proton look enormous. Now pack into that tiny, tiny space about an ounce of matter. Excellent. You are ready to start a universe.  
  
I'm assuming of course that you wish to build an inflationary universe. If you'd prefer instead to build a more old-fashioned, standard Big Bang universe, you'll need additional materials. In fact, you will need to gather up everything there is--every last mote and particle of matter between here and the edge of creation--and squeeze it into a spot so infinitesimally compact that it has no dimensions at all. It is known as a singularity.  
  
In either case, get ready for a really big bang. Naturally, you will wish to retire to a safe place to observe the spectacle. Unfortunately, there is nowhere to retire to because outside the singularity there is no where. When the universe begins to expand, it won't be spreading out to fill a larger emptiness. The only space that exists is the space it creates as it goes.  
  
It is natural but wrong to visualize the singularity as a kind of pregnant dot hanging in a dark, boundless void. But there is no space, no darkness. The singularity has no "around" around it. There is no space for it to occupy, no place for it to be. We can't even ask how long it has been there--whether it has just lately popped into being, like a good idea, or whether it has been there forever, quietly awaiting the right moment. Time doesn't exist. There is no past for it to emerge from.

And so, from nothing, our universe begins.  
  
In a single blinding pulse, a moment of glory much too swift and expansive for any form of words, the singularity assumes heavenly dimensions, space beyond conception. In the first lively second (a second that many cosmologists will devote careers to shaving into ever-finer wafers) is produced gravity and the other forces that govern physics. In less than a minute the universe is a million billion miles across and growing fast. There is a lot of heat now, ten billion degrees of it, enough to begin the nuclear reactions that create the lighter elements--principally hydrogen and helium, with a dash (about one atom in a hundred million) of lithium. In three minutes, 98 percent of all the matter there is or will ever be has been produced. We have a universe. It is a place of the most wondrous and gratifying possibility, and beautiful, too. And it was all done in about the time it takes to make a sandwich.

Bryson, B. (2003). A short history of nearly everything. Retrieved from <https://www.bookbrowse.com/excerpts/index.cfm/book_number/1216/a-short-history-of-nearly-everything?#excerpt>

**Social Studies excerpt from The Learning Virtutes**

Jin Li grew up in China during the Cultural Revolution. When the madness was over, the Chinese awoke to discover that far from overleaping the West, they were “economically destitute and culturally barren.” This inspired an arduous catch-up campaign. Students were recruited to learn what the West had to offer.

Li was one of the students. In university, she abandoned Confucian values, which were then blamed for Chinese backwardness, and embraced German culture. In her book, “Cultural Foundations of Learning: East and West,” she writes that Chinese students at that time were aflame — excited by the sudden openness and the desire to catch up.

Li wound up marrying an American, moved to the States and became a teacher. She was stunned. American high school students had great facilities but didn’t seem much interested in learning. They giggled in class and goofed around.

This contrast between the Chinese superstudent and the American slacker could be described with the usual tired stereotypes. The Chinese are robots who unimaginatively memorize facts to score well on tests. The Americans are spoiled brats who love TV but don’t know how to work. But Li wasn’t satisfied with those clichés. She has spent her career, first at Harvard and now at Brown, trying to understand how Asians and Westerners think about learning.

The simplest way to summarize her findings is that Westerners tend to define learning cognitively while Asians tend to define it morally. Westerners tend to see learning as something people do in order to understand and master the external world. Asians tend to see learning as an arduous process they undertake in order to cultivate virtues inside the self.

You can look at the slogans on university crests to get a glimpse of the difference. Western mottos emphasize knowledge acquisition. Harvard’s motto is “Truth.” Yale’s is “Light and truth.” The University of Chicago’s is “Let knowledge grow from more to more; and so be human life enriched.”

Chinese universities usually take Confucian sayings that emphasize personal elevation. Tsinghua’s motto is “Strengthen self ceaselessly and cultivate virtue to nurture the world.” Nanjing’s motto is “Be sincere and hold high aspirations, learn diligently and practice earnestly.”

When Li asked Americans to randomly talk about learning they used words like: thinking, school, brain, discovery, understand and information. Chinese, on the other hand, tended to use phrases common in their culture: learn assiduously, study as if thirsting or hungering, be diligent in one’s learning.

In the Western understanding, students come to school with levels of innate intelligence and curiosity. Teachers try to further arouse that curiosity in specific subjects. There’s a lot of active learning — going on field trips, building things. There’s great emphasis on questioning authority, critical inquiry and sharing ideas in classroom discussion.

In the Chinese understanding, there’s less emphasis on innate curiosity or even on specific subject matter. Instead, the learning process itself is the crucial thing. The idea is to perfect the learning virtues in order to become, ultimately, a sage, which is equally a moral and intellectual state. These virtues include: sincerity (an authentic commitment to the task) as well as diligence, perseverance, concentration and respect for teachers.

Brooks, D. (2013, February). The learning virtues. *The New York Times.* Retrieved from <http://www.nytimes.com/2013/03/01/opinion/brooks-the-learning-virtues.html>

**Engineering excerpt from Plant Protectors: Cutting the Cord**

…munching on your apple, you reach home and grab your e-reader-of-the-future from a sunny windowsill. Its casing — everything except the screen —might glitter faintly in the bright light. You settle down to read your favorite novel — or maybe your textbook — happy to see that the battery is fully charged.

Those tiny, sparkly dots are no ordinary glitter. They are miniature solar cells. Each converts a small amount of sunlight into electricity that travels along a network of wires, eventually reaching — and recharging — the device’s battery. This unit needs no cords, no power plants — just light.

This cordless future might soon become reality thanks to Greg Nielson at Sandia National Laboratories in Albuquerque. As a microsystems engineer, he uses microscopic parts to create new products or systems.

Nielson focuses on applying his skills to harnessing solar energy. “The amount of power we can get from sunlight far exceeds any other energy source available,” he explains, “and that includes coal, natural gas, oil, nuclear and wind.”

Panels made of solar cells that convert sunlight into electricity are not new. But traditional solar panels are bulky and require large amounts of extremely pure silicon, a costly material used in many electronics. The size of these solar panels and solar cells can limit the number of places they can be used. And as silicon hogs, they tend to be very expensive.

That got Nielson wondering: What if he could make solar cells smaller? Could they still generate enough electricity to be useful?

Over the past six years, his team has worked to answer those questions. The result is “solar glitter.” These tiny cells are both thinner and smaller in diameter than traditional cells that convert sunlight into electricity. In fact, solar glitter is so much smaller that Nielson estimates the tiny cells use about one-thousandth the amount of silicon of a traditional, larger cell to generate the same amount of power.

Pretty amazing. But if they’re so small, how do they absorb enough sunlight? The secret lies in tiny lenses that sit just above the miniature solar cells, focusing the sun’s rays onto the glitter. If you have ever used a magnifying glass to focus light into a pinpoint, you can imagine how this works. (Fortunately, solar glitter doesn’t catch fire!)

Nielson imagines a world in which solar glitter powers everything from cell phones and laptops to lights. Tiny smatterings of solar glitter could be built into some types of glass, allowing windows to collect solar energy without obscuring your vision. Going camping? A tent covered in solar glitter could power lights for reading or keeping away the boogeyman after late-night ghost stories. For the glittered tent to work, scientists will need to find a battery or some other means to efficiently store the sun-generated electricity until night falls. But Nielson is confident that problem will be addressed once widespread solar power becomes a reality.

One thing that especially excites this engineer is the prospect of getting low-cost electricity to people around the world. Millions of people live in homes with no electric power. Solar glitter could allow these people to have light at night without relying on dangerous indoor oil lamps or wood-burning fires. Glitter solar cells might even power computers, which could bring a modern education to kids who currently learn in open-air schoolrooms that lack electricity. Hospitals and refrigeration for life-saving vaccines could one day be powered by the tiny cells.

“Being able to provide low-cost energy that [doesn’t hurt the] environment, around the world, that is just extremely exciting to me,” says Nielson. “It will be like the next energy revolution.”

Stevens, A. (2012). Planet protectors. *Science News for Students*. Retrieved from <https://www.sciencenewsforstudents.org/article/cool-jobs-planet-protectors>

**Fiction excerpt from *How Children Succeed: Sebastian’s Blunder***

Sebastian Garcia couldn’t figure out where he’d gone wrong. One minute he was up by a bishop and a pawn, in good position, feeling strong, looking to start off the 2011 National Junior High Chess Championships with a victory. And the next minute he was in deep trouble, his advantage squandered, his king scurrying across the board like a frightened little mouse, fleeing his opponent’s rook. A few moves later, when his defeat was complete, Sebastian limply shook hands with the boy who had beaten him, a sandy-haired kid from a central Ohio suburb, shuffled his way through the cavernous convention center ballroom where a thousand heads were bowed over chessboards, and slunk back to Union B, the windowless conference room down the hall that was his chess team’s temporary home. Sebastian, a short, stocky, quiet Latino with round cheeks and a thick bristle of black hair, was in the sixth grade at Intermediate School 318 in Brooklyn, and two days earlier, along with sixty teammates and a handful of teachers and parents, he had traveled eleven hours in a chartered bus to Columbus, Ohio, for a few days of competitive chess. His weekend was not off to a good start.

The ritual for students on the IS 318 team was that, win or lose, after each game they would come back to the team room for a post-mortem with the school’s chess teacher, Elizabeth Spiegel. Sebastian slouched into Union B and approached the small table where Spiegel, tall and slender, sat behind a chessboard.

“I lost,” he announced.

“Tell me about your game,” Spiegel said. She was in her mid-thirties, dressed all in black, her pale skin made paler by the contrast with her brightly dyed hair, which changed hues somewhat from season to season. For this tournament, she had chosen the deep vermilion of red velvet cake. Sebastian dropped into the chair opposite her and handed her his chess notation book, where he’d scrawled all sixty-five of his moves as well as all of his opponent’s.

The other guy was simply better than him, Sebastian explained. “He had good skills,” he said, a little plaintively. “Good strategies.”

“Well, let’s see,” said Spiegel, and she took the white pieces and started re-creating the game on the board between them, making each of Sebastian’s opponent’s moves while Sebastian, as black, replayed his own moves. Sebastian and the Ohio boy had both begun by bringing out a couple of pawns, and white quickly developed his knights, a standard opening called the Caro-Kann, which they’d gone over in chess class back in Brooklyn dozens of times. And then the Ohio boy had pulled one knight back to an unexpected square, so that both of his knights were attacking a single black pawn. Sebastian, nervous, moved another pawn up to defend, but he had stumbled into a trap. His opponent quickly swooped a knight down to capture the defending pawn, and just four moves into the game, Sebastian was down a piece.

Spiegel stared at Sebastian. “How long did you spend on that move?” she asked.

“Two seconds.”

Tough, P. (2015). How children succeed. Houghton Mifflin Harcourt: Boston. Pp. 1-2. Retrieved from <https://www.lafontaineacademy.org/wp-content/uploads/2015/10/Extract-from-How-Children-Succeed.pdf>

**Mathematics excerpt from Shuffling Shenanigans**

When Persi Diaconis was a kid, his favorite hangout was the magic store. He and his friends goofed around, practiced their tricks and longed for the books and tools. Then one day, in walked the world’s greatest living magician. Diaconis, a thirteen-year-old whippersnapper, decided to show off his card tricks. The great magician, Dai Vernon, was so impressed that he decided to teach the teenager a few new things. Each time the pair met in the shop, Vernon taught Diaconis a bit more. And within a year, Vernon offered to take Diaconis on the road with him. Diaconis didn’t think twice. He packed his bag, met Vernon on the corner and became a professional magician at age 14.

As Diaconis learned the card tricks, he found himself asking questions. How many different ways can you arrange the cards in a deck? What if you ignore the number and suit and only consider card color – then how many different ways can you arrange the deck? Vernon taught Diaconis a sneaky trick to deal the cards out to four players while making sure that all the aces would end up in his own hand. Then Diaconis wondered how he could do the trick with *five* players. To answer questions like those, Diaconis eventually realized, he needed mathematics. So he went back to school. Now he’s a mathematician at Stanford University and one of the world’s greatest experts in probability, the study of chance. But he hasn’t left his magic days behind. Even today, he says, much of his research is motivated by questions about shuffling cards. “Sometimes it’s a little embarrassing,” he says.

**A trick explained**

In 1992, Diaconis and his friend Dave Bayer of Columbia University finally answered a question that had bugged Diaconis since he was a kid: How many times do you need to shuffle the cards in a deck to make sure they’re all mixed up?

It all got started when Bayer saw Diaconis perform a magic trick. Diaconis started with a deck of cards with each suit in perfect order, ace through king. He handed the deck to someone in the audience. Cut and shuffle the deck three times, he said, and then look at the top card without showing anyone.

“I’m sure you’ll agree that no living human could know the value of that card,” Diaconis declared grandly.

Then Diaconis asked the audience member to insert that card anywhere in the deck and cut and shuffle it a final time.

Finally, he spread the cards face up in a wide arc on the table, stared for several long moments, and plucked out the right card.

“How did you do it?” Bayer asked in amazement.

Diaconis winked at Bayer and, since he was a friend, explained how it worked – once the two were alone. Diaconis put the deck in order again and cut the deck and shuffled the cards once. Then he spread the cards out on the table, face up.

“Look at just the hearts,” he said. Because the cards were in order to begin with, Bayer could clearly see rising sequences of hearts, such as 3, 4, 5, 6, with cards from other suits mixed between the sequences. And if he looked at just the clubs, the diamonds or the spades, ignoring the other suits, he could see the same thing.

Rehmeyer, J. (2009). Shuffling shenanigans. *Science News for Students*. Retrieved from <https://www.sciencenewsforstudents.org/article/shuffling-shenanigans>