STORIES:

TRANSFORMING EDUCATION FOR GIFTED LEARNERS

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FIRST THINGS FIRST

Did you figure out the secret message? (If not, try it now!)

Try it for yourself… Can you decode the secret message?

23 5 15 6 20 5 14 20 8 9 14 11 23 5 13 21 19 20, 1 12 15 14 5,

19 15 12 22 5 1 12 12 20 8 5 16 18 15 2 12 5 13 19 15 14 15 21 18 15 23 14.

2 21 20 20 15 21 7 8 5 18 3 8 1 12 12 5 14 7 5 19 4 15 19 5 5 13

20 15 14 5 5 4 13 15 18 5 13 9 14 4 19, 6 15 18

20 5 1 13 9 19 4 18 5 1 13!

This might help...

Plain:	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Cipher:	

SOLUTION

Plain:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cipher:	1	2	3	4	5					10					15					20						25

Try it for yourself… Can you decode the secret message?

23 5 15 6 20 5 14 20 8 9 14 11 23 5 13 21 19 20, 1 12 15 14 5,
WE OFTEN THINK WE MUST, ALONE,

19 15 12 22 5 1 12 12 20 8 5 16 18 15 2 12 5 13 19 15 14 15 21 18 15 23 14.
SOLVE ALL THEP ROBLEMS ON OUR OWN.

2 21 20 20 15 21 7 8 5 18 3 8 1 12 12 5 14 7 5 19 4 15 19 5 5 13
BUT TOUGHER CHALLENGES DO SEEM

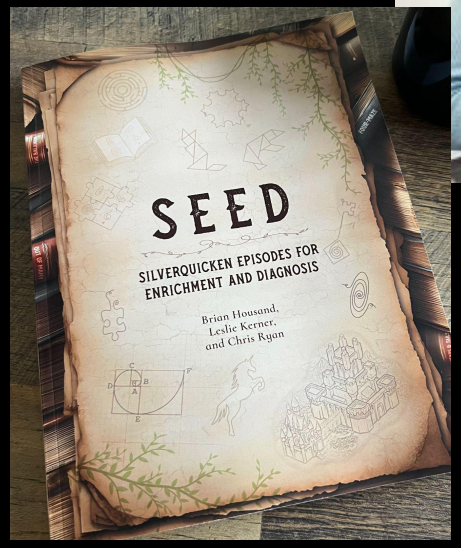
20 15 14 5 5 4 13 15 18 5 13 9 14 4 19, 6 15 18
TO NEED MORE MINDS, FOR

20 5 1 13 9 19 4 18 5 1 13!

TEAM IS DREAM!

QUICK INTRO: WHAT IS SILVERQUICKEN?

- **Story-based group challenges**
- Enrichment curricula
- **Problem- solving, creativity,** and **teamwork** skills
- **Productive struggle**
- **Classroom** programs, summer **camps**, and a new **teacher workbook (SEED), with co-author Brian Housand!**



AGENDA

- Stories Work (Neurobiology and Cognitive Psychology say so!)
- How Stories Work
- Try it!
- Write a Story for Your Lesson (Pro Tips included!)
- Q&A / Next Steps

TWO PASSAGES

Reading A

Lachryphagy, which derives from the Greek *lacrima* (meaning tear) and *phagos* (meaning "that one eats"), is a practice whereby one organism obtains nutrition from the tears of another. Several species of butterfly exhibit lachryphagous behavior with reptiles, specifically certain species of turtles and crocodiles, in order to ingest sodium and certain proteins that they cannot otherwise obtain from their fruit nectar-based diet. The turtle ingests sodium through its carnivorous diet, so its tears–which are continuously produced in the animals' lacrimal glands to keep dust and other irritants out–are a natural source of sodium. The butterfly lands in the turtle's eyes and proceeds to drink these salty tears, providing its body with a mineral essential to metabolism and egg production. This is a commensal relationship, in which one species (the butterfly) receives benefit while the other (the turtle) remains unharmed.

Reading B

"Woo hoo!" Aaliyah howls as she pilots her giant butterfly through the hot summer air. They have miles to go before she and Oliver meet up with their teammates back at the Silverquicken school, and they'll have to refuel soon. The passionfruit and acai nectar keeps the butterfly in flight, but doesn't enable the growth and development needed for this long flight.

Just then Aaliyah sees it: a massive turtle sunning itself on a log. Oliver, a nervous flyer who has been white-knuckling the whole ride, yelps as Aaliyah steers the butterfly sharply down toward the river.

"What are you doing?! I thought we needed fuel!" he yells, panicked.

"That's what we're doing!" she replies, as she expertly pulls up on the antenna, slowing the creature down for a soft landing right on the edge of the turtle's eye.

Oliver's breathing calms as the insect bends and gently takes a long, refreshing drink of the turtle's tears. "Oh, right! The salt station! That's how the butterfly gets stronger. I've never actually seen it in action!"

"Yes, the salt and protein in the turtle's tears nourish our butterfly. It's a beautiful relationship because it doesn't hurt him, but it's life-giving to our friend here!" Aaliyah smiles as she marvels at the wonders of nature.

STORIES CAPTIVATE, INSPIRE, AND MAKE INFORMATION STICK!

- Several neuroscience studies[1] show that story comprehension activates brain regions involved in motor and sensory functions; in essence, the listener's brain is activated in the same regions as if they were experiencing the story themselves.
- The brain releases excess dopamine when experiencing or hearing a story of an emotionally-charged event, making it easier to remember the event with greater accuracy.[2]
- Narratives with dramatic arcs cause an increase in cortisol and oxytocin, which increases memory of the event / narrative.[3]

[1]Including, but not limited to studies such as: Stephens, Silbert, and Hasson, 2010; Rizzolatti & Craighero, 2004
[2]Clos, Bunzeck, Sommer, 2019, Journal of Neuroscience
[3]Wagner, Echterhoff, 2018, Frontiers in Human Neuroscience

STORIES MAKE US MORE EMPATHETIC

- Brain science supports this too:
  - Narratives with dramatic arcs cause an increase in cortisol and oxytocin, and the latter has a positive correlation with feelings of empathy.[4]
  - Readers who experience stories with more semantic, phonetic, and grammatical foregrounding (i.e., more detailed and attention-grabbing stories) had more empathy than those without foregrounding.[5]
- As does cognitive psychology:
  - Fiction is "the mind's flight simulator," providing space to identify with characters whose goals and desires are different from our own.[6]

[4]Paul J. Zak, 2015, *Cerebrum*
[5]Eva Maria Koopman, 2015, *Psychology of Aesthetics, Creativity, and the Arts*
[6]Keith Oatley, 2008, University of Toronto

STORIES HAVE BEEN AROUND SINCE THE DAWN OF TIME...

SO WHY DON'T WE USE THEM TODAY?

Why don't we still do it?

Required curricula in core subjects

Required standards

Assessments and other requirements

No time or energy to create stories!

We come from diverse histories/ backgrounds

Learners have different interests

IT'S NOT ALL-OR-NOTHING!

Not everything needs to be taught through story, but a short preface/intro can provide the right "hook" for a challenging lesson.

Engage, inspire, motivate	Provide an immediate, personal relevance or "why"
Activate emotional connection	Enable teamwork, support, and ability to communicate
Allow learners to set aside fears, baggage	Create safe space to tackle novel / challenging problems

LET'S TRY IT!

SILVERQUICKEN DAILY PUZZLE

RUNAWAY EGG

LOGIC WEDNESDAY

Jojo and Connor were so winded, they weren't trying to speak anymore as they crashed through the undergrowth, racing between the trees after the golden egg. The egg ran quickly and sometimes disappeared for seconds, but the boys always managed to catch another glimpse of its shiny metallic shell.

"Close... the... gap!" panted Jojo. Connor nodded, and the boys gave it their all. "Almost... there!" said Connor. The egg was just ahead. Then it darted out into a clearing and seemed to vanish in the bright sun. There was a shriek and a hiss and the sound of snapping jaws.

Blinking, Connor and Jojo emerged from the woods. The egg had stopped cold. Around it were four predators. Not thinking, Connor jumped in front of the egg, waving his hands. Then he said, "Uh, Jojo, a little help?" The other boy seemed to be talking to the trees.

Right in front of Jojo, the grass peeled back like a carpet, revealing four weapons lying in the earth: a Pitch-

fork, a Spray bot

od, and a Net on a pole. "You're the best," Connor hollered, still waving his hands. "Toss me one of those!" Jojo leaned over the dirt and murmured, "Which weapon do we use against what? And when? There's a Cobra, a Hawk, a Venus flytrap, and a Badger." The dirt trembled as earthworms emerged, arranging themselves into wriggling letters.

		PREDATORS				ORDER			
		BADGER	COBRA	HAWK	VENUS FLYTRAP	FIRST	SECOND	THIRD	FOURTH
WEAPONS	NET								
	PITCHFORK								
	ROD								
	SPRAY BOTTLE								
ORDER	FIRST								
	SECOND				✓				
	THIRD								
	FOURTH								

IN THE GRID ABOVE, USE CHECKMARKS TO SHOW WHAT GOES WITH WHAT. CROSS OUT POSSIBILITIES USING X'S.

HINT: CLUE #1 TELLS YOU TO DEFEND AGAINST THE VENUS FLYTRAP SECOND. THAT'S WHY THE CHECKMARK IS THERE. ALSO NOTICE THAT YOU NOW KNOW A LOT MORE: NO *OTHER* PREDATOR GOES SECOND, AND THE VENUS FLYTRAP IS *NOT* FIRST, THIRD, OR FOURTH! SHOW ALL THIS WITH X'S.

The Words of the Earthworms:

Use a different weapon against each predator.
Use them one at a time, in a particular order.

1. Defend against the Venus flytrap second.
2. Don't use the Rod fourth.
3. Defend against the Badger third.
4. Use the Spray bottle against the Hawk.
5. Don't use the Pitchfork third.
6. Use the Net first.
7. Don't use the Pitchfork against the Cobra.

SILVERQUICKEN

Story brings learners into the action that contextualizes the puzzle/activity

Story continues in the border of the puzzle! Gives a bit more context and visual interest

DEBRIEF - RUNAWAY EGG

- How did that go? How did it feel?
- How did the story help you get ready to solve the challenge?
- How did the story help you keep going if / when you were confused?
- What else did you notice about the experience?


YOU
can do it
too!

USE A LITTLE STAGECRAFT!

- **Location** - create a designated “story area” (e.g., rug, nook)
- **Lighting** - adjust the lighting (e.g., lamp, fairy lights, colored bulb)
- **Sound** - use a distinct cue (e.g., chime, snap, bell, clap) to begin
- **Music** - establish theme music or tune to build anticipation
- **Props** - use special objects to bring students into the story world

CREATE A FIND A STORY TO STEP INTO

Let's try it together!

WRITE YOUR OWN ADVENTURE

	CHARACTER	SETTING	GOAL	OBSTACLE
1	Unicorn	Water Falcon Field	Find the lost Amorphegg	The forest paths keep changing
2	Librarian	Mountaintop	Heal the injured unicorn	There's a huge serpent in the Lake
3	Silverquicken Student	The Stables	Capture the enemy intruder	There's a landslide
4	Gryphon	The Forest	Decipher a secret code	Dark water is rising all around you
5	Shopkeeper	Island in the Lake	Find your way out of the hedge maze	You're captured by a dragon
6	Giant Eagle	Underground Labyrinth	Repair the broken robot	You get locked in a room
7	Ogre	The Library	Fix the glitchy SQ technology	You run into quicksand
8	Silverquicken Mentor	The Wood Shop	Hide the book of SQ secrets	Your Mount turns into an enemy
9	Gnome	The Sky	Defend the castle from a raid	You wake up from the dream world
10	Detective	The School Grounds	Get past the guard to the SQ treasure	Flames are falling from the sky

ARTIFACT 14.5

WRITING A STORY - PRO TIPS!

- **Choose character(s)** as your protagonists(s)
- **Have a goal** for the character(s)
- **Create an obstacle** that gets in the way of the goal
- Figure out how the character(s) can **overcome the obstacle** to reach the goal!
- **Start in the middle** of the action with the characters, e.g., "Connor spun around as he heard a crash from behind the tree..."
- **Use "Yes, *and...*" and "But *then...*"** statements to expand your story.

You can also use AI to draft your story!

Just prompt it with the character(s), goal, obstacle, and resolution.

QUESTIONS AND RESOURCES

- How might you take some of these ideas back to your school?
- What concerns do you have?
- What resources would be helpful?
- Other thoughts?

Get these slides here!