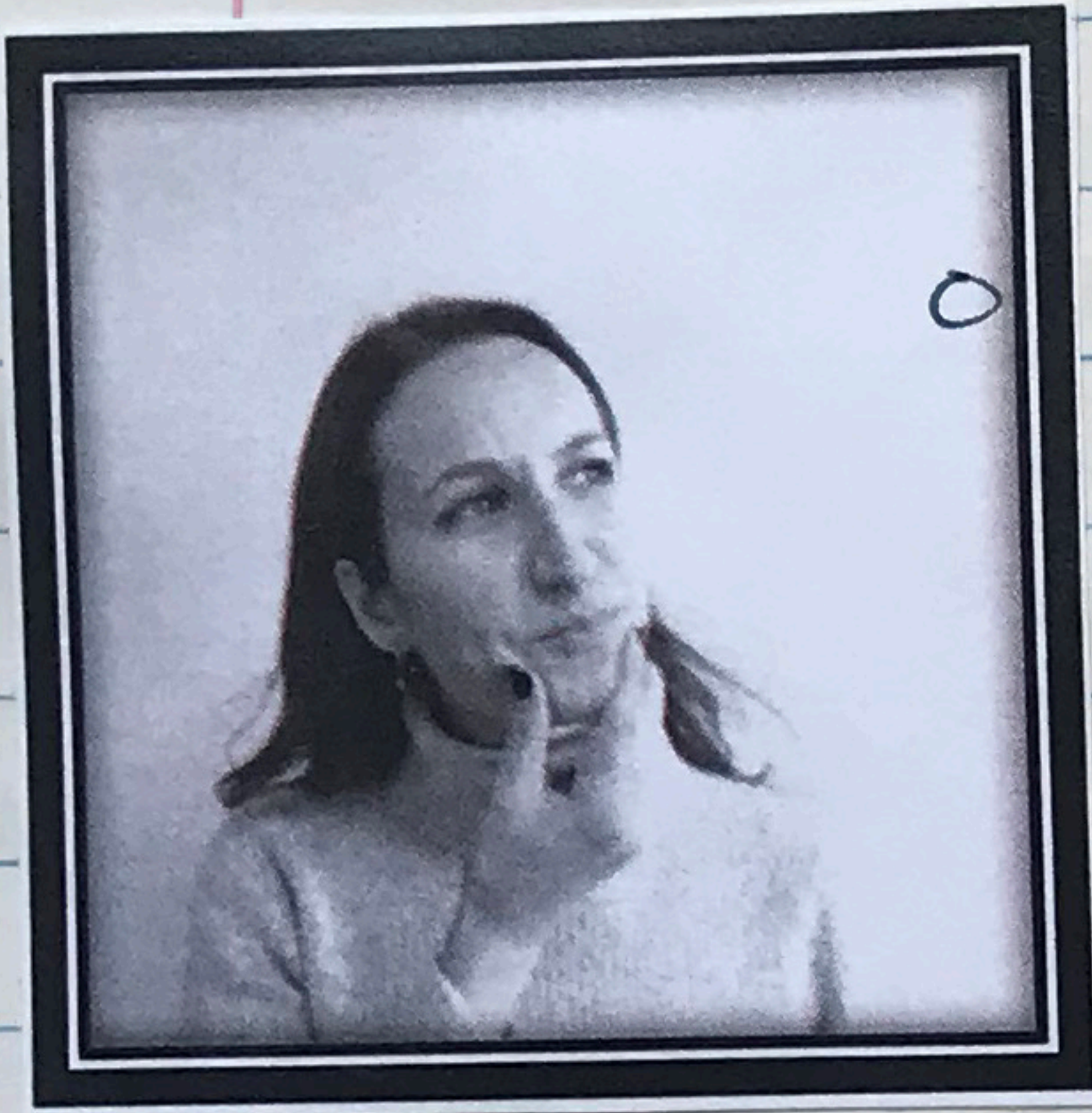


Interactive Student Notebooks

Hailey Yan
Nick Kruks
Katrina Crawshaw
Dane Sweeney

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WONDER



What are Interactive Student Notebooks?

What subjects can an ISN be used in?

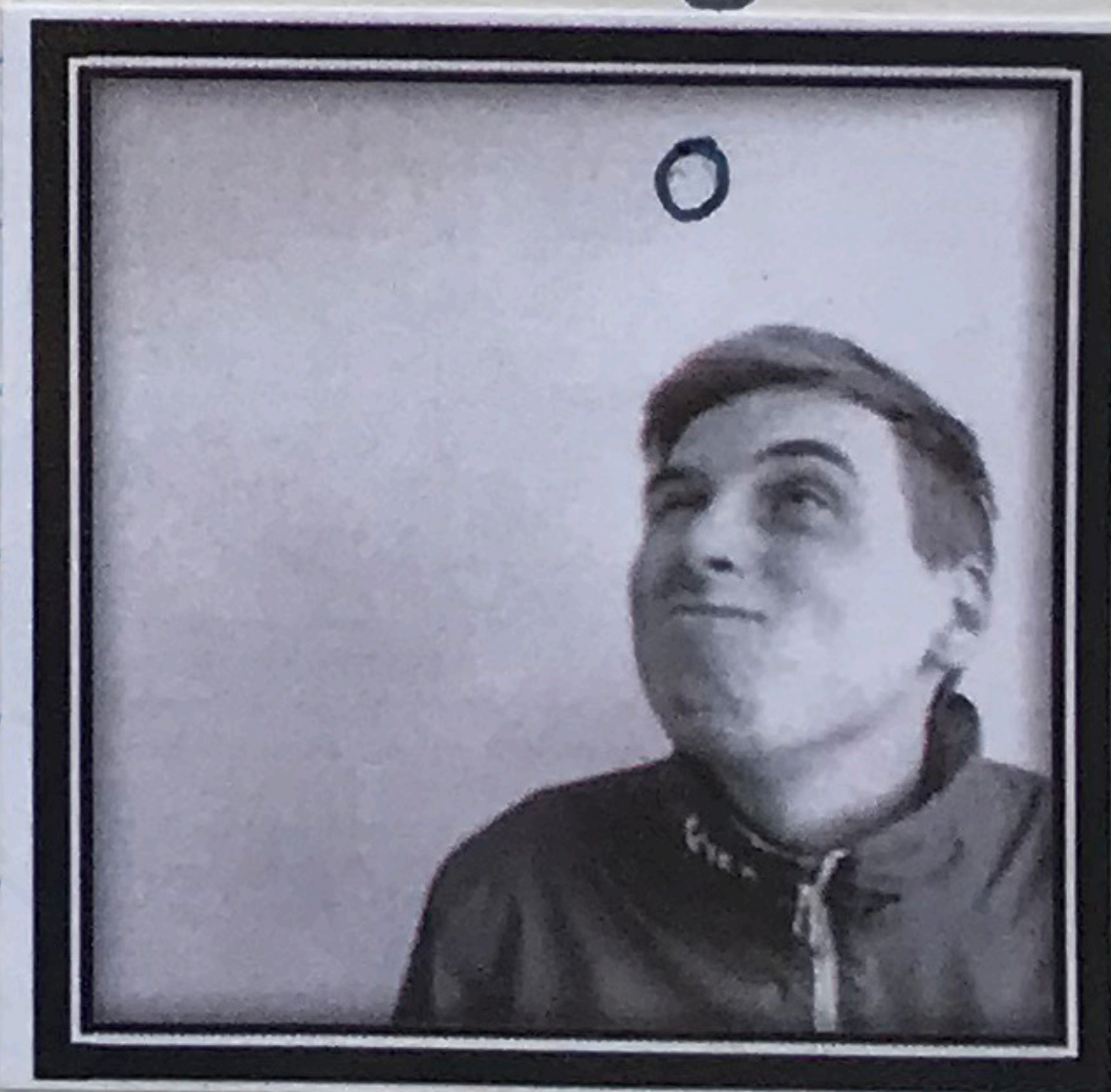


Do Interactive Student Notebooks help keep me organized?

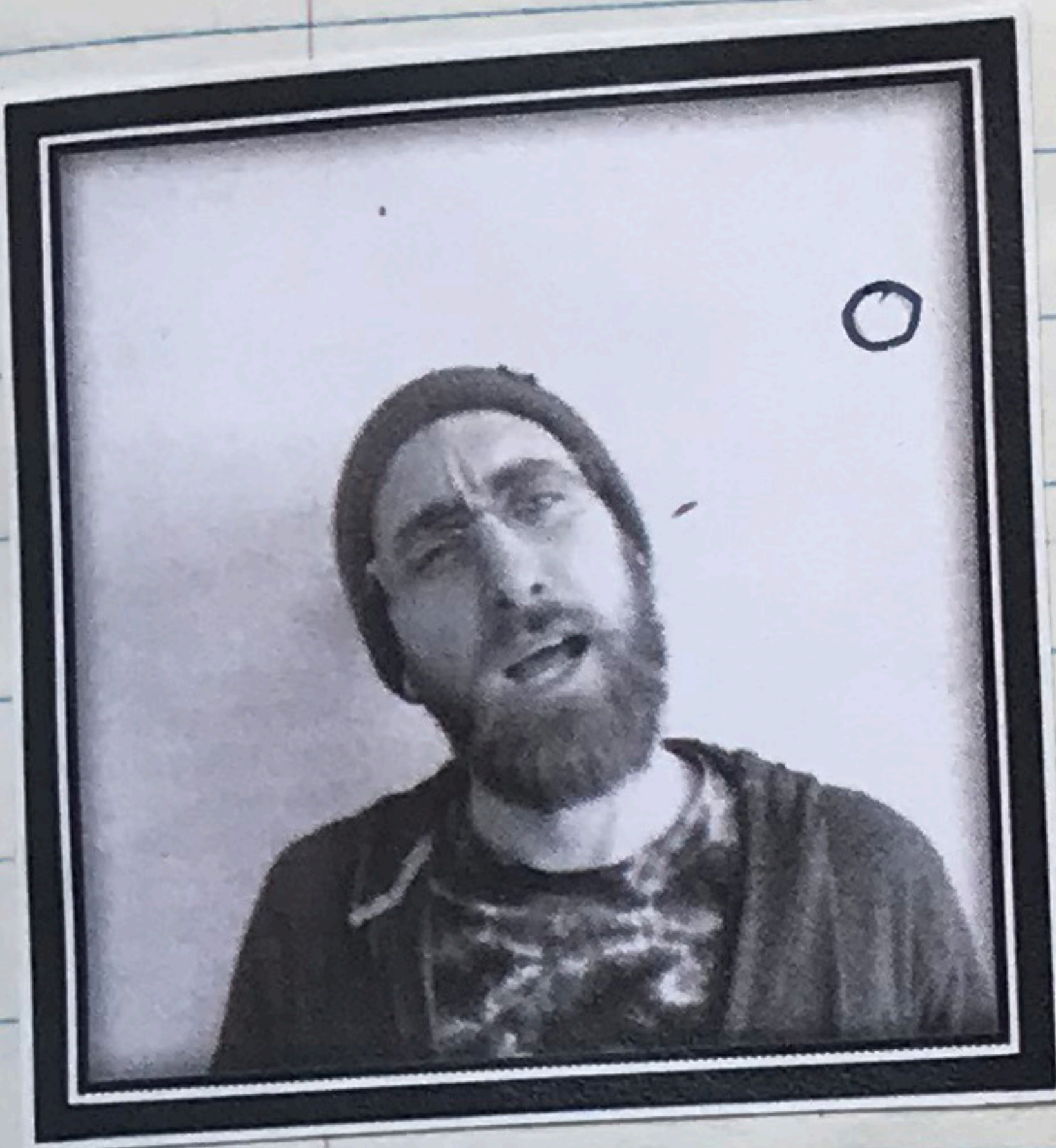
How can they be used to personalize student learning?



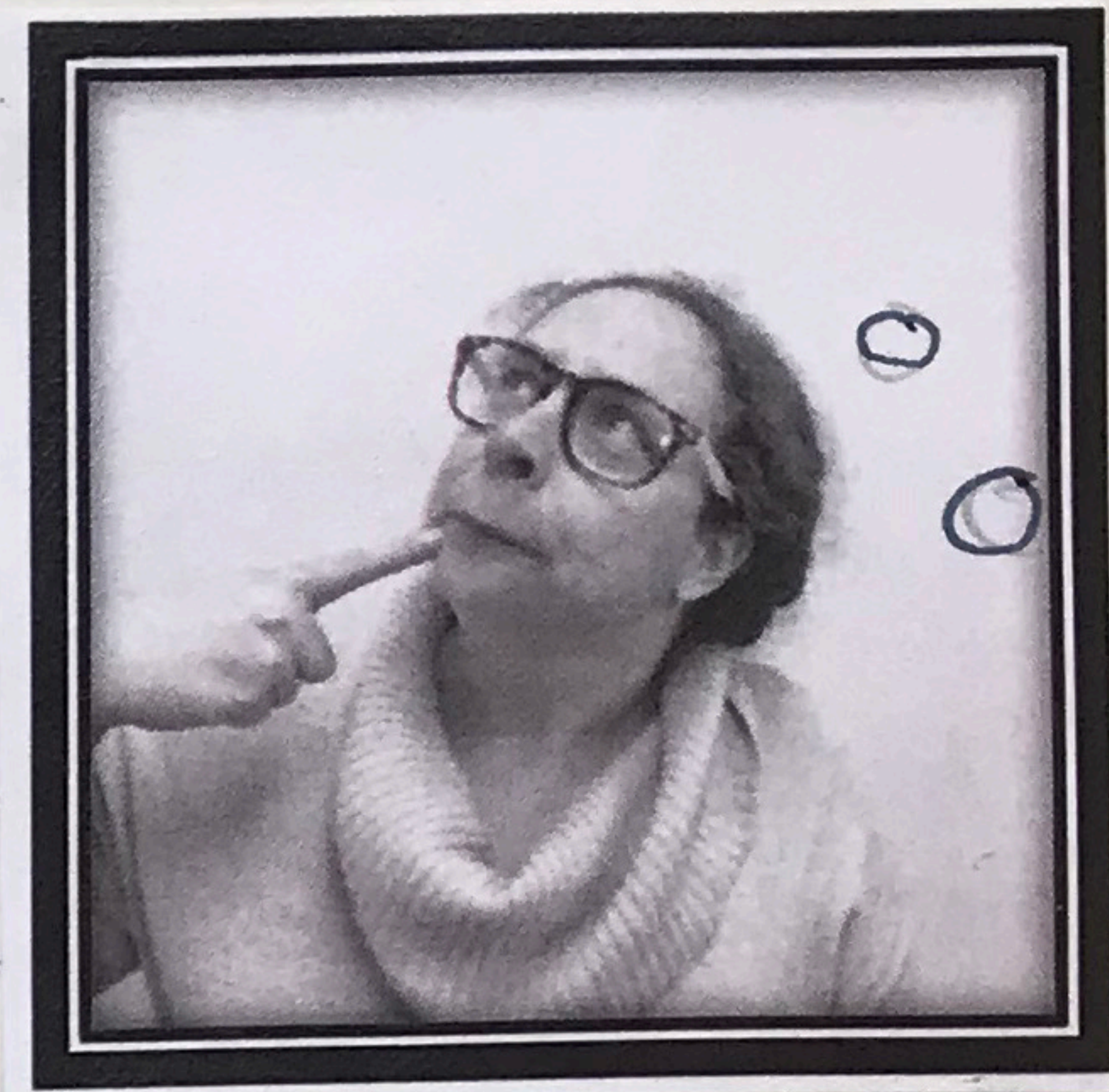
How can we make ISNs more accessible to all students?



WALL

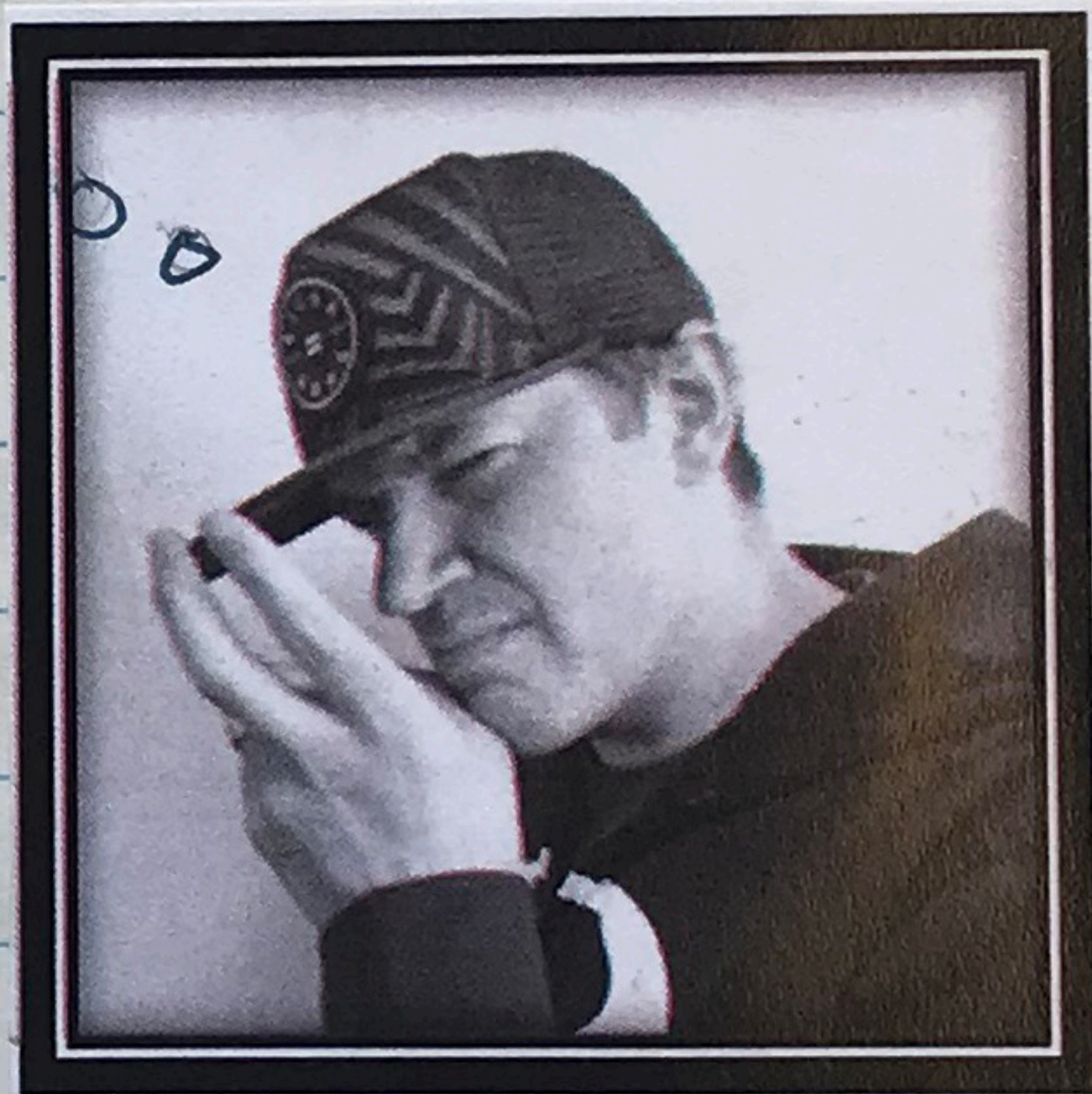


Can the teacher provide feedback on the notes?

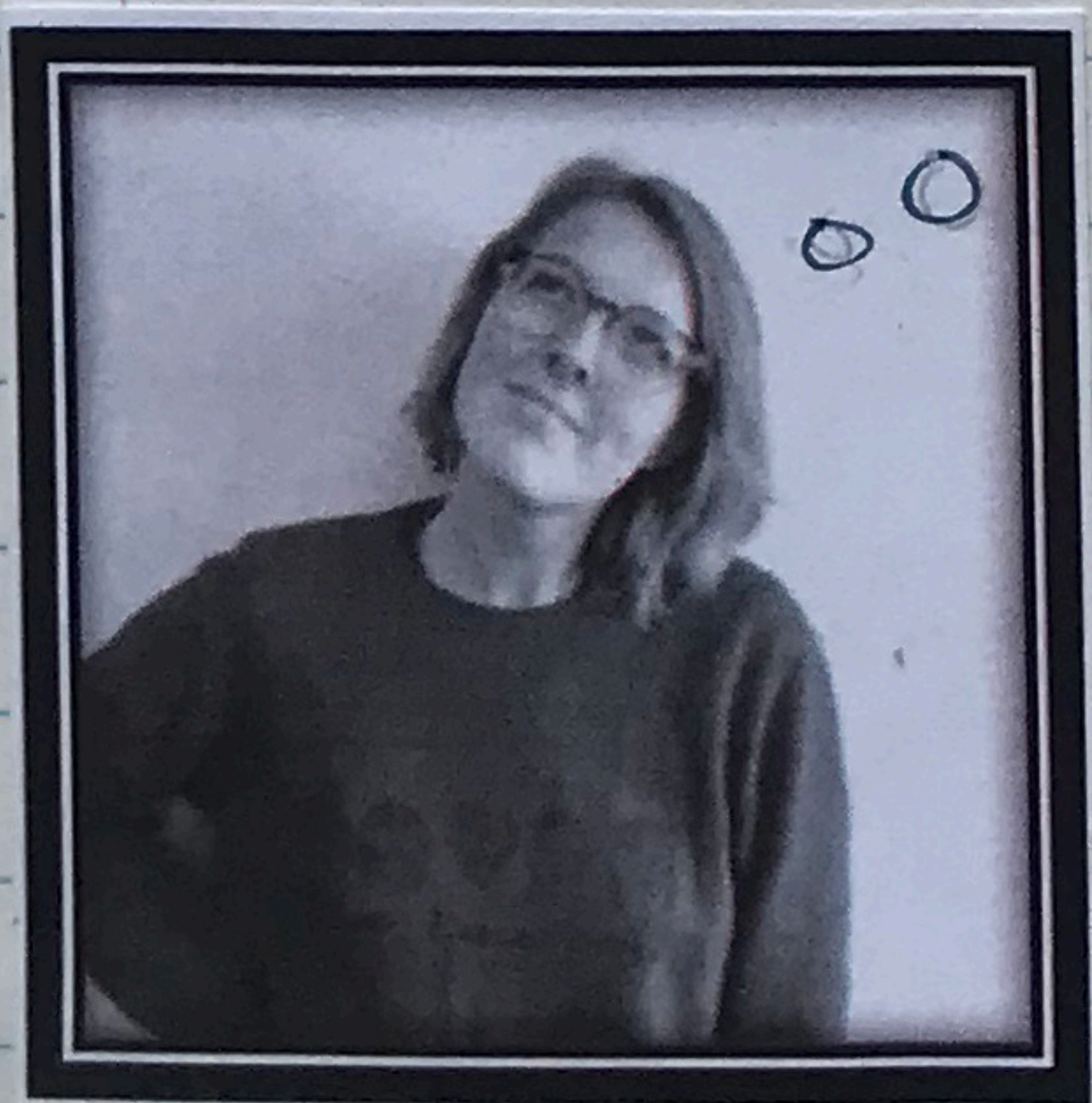


What's the balance between teacher-provided structure & student creativity?

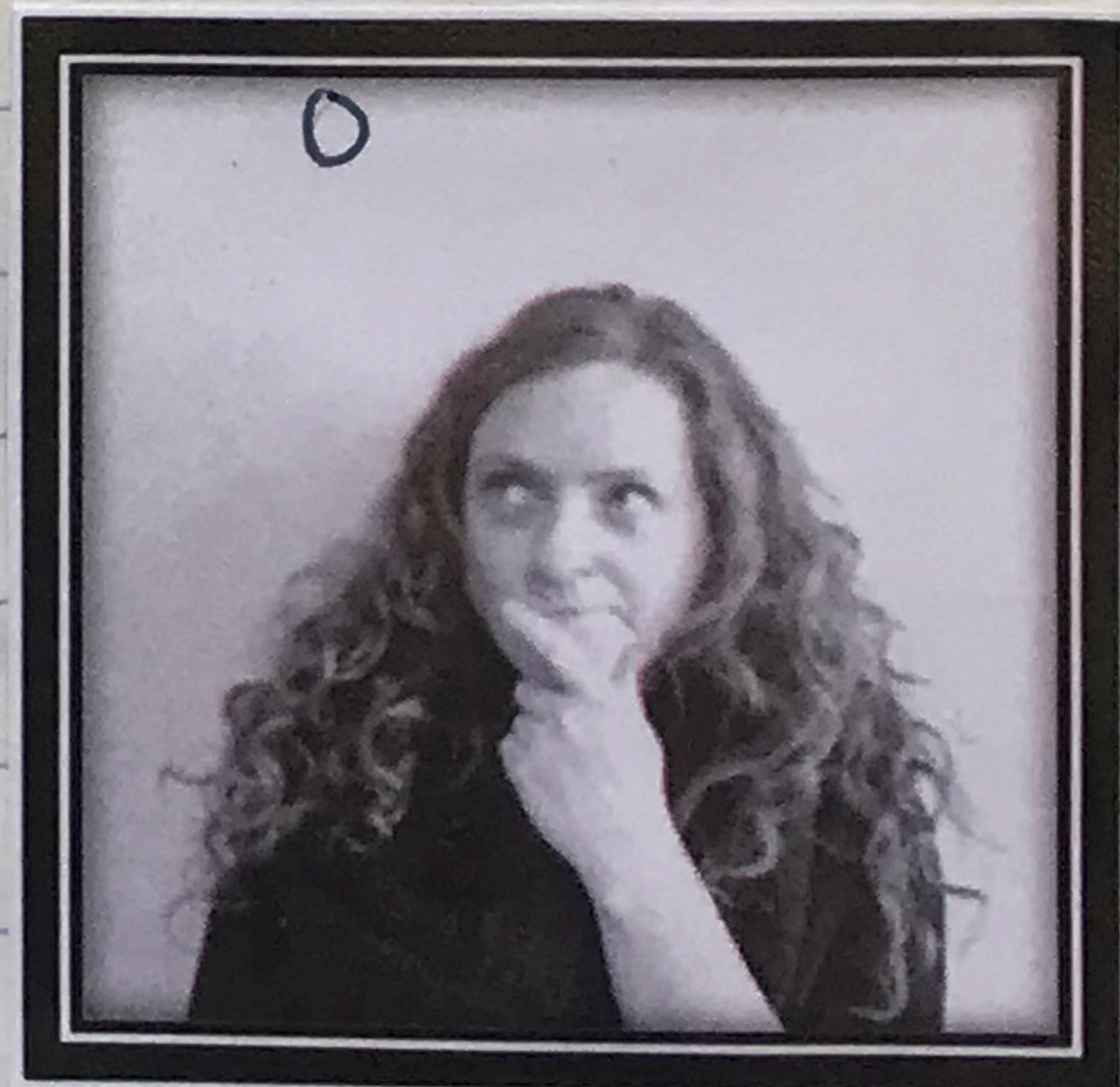
How can we include technology with ISNs?



What am I interacting with?



Is it very complicated to include ISNs in my class planning?



Hilroy

Rationale

ISNs provide a way for students to keep detailed notes and reflections on class materials within one book. They can be used for any subject, because they are highly adaptable. They range anywhere from a simple lined book wherein students can paste handouts and write their own connections, to blank books for diagramming and drawing. How this looks in each grade is highly dependable on the students' abilities and motivation to get creative. We suggest that younger grades will generally require a more structured approach, with specific layouts and handouts organized by the teacher. As students mature and desire more autonomy, ISNs can become a tool for them to personally connect with classroom learning. For visual learners, this provides an opportunity to get creative and link learning to art. For students who crave organization, ISNs allow them to keep all handouts and materials in one neat book.

Relevant subjects and areas:

- ⇒ **Math:** ISNs can be used to replace textbooks; the handouts and student notes inside of their ISN can be used as a tool for tests
- ⇒ **Science:** students can draw their own diagrams, mimic famous scientific notebooks (like that of Jane Goodall), write hypotheses and theories, etc.
- ⇒ **Art:** students can use their ISNs for daily art challenges, wonderings, sketches, connections to course materials, etc.
- ⇒ **English:** students can track draft changes and progress, collect poems and their connections, and engage in literacy through images and art
- ⇒ **ELL students:** provides an opportunity to make learning highly visual

AND SO MUCH MORE!

Lapbook

Name

No.

LAPBOOK Example



Can be used for a **RANGE** of topics like Math, Science, and Social Studies.

Can be used for **STUDENT LED CONFERENCES**

Teachers can scaffold students' learning so that they can create their own lapbook for an independent **PERSONAL** project. **↳** Can showcase their learning in a **GALLERY WALK** at the end of the project.



Smaller unit
Isn't - rather
than for the
whole year.

LAPBOOK:
an organizational tool
that breaks a unit up
into smaller pieces
(i.e. **SUBTOPICS**)
recorded in **MINIBOOKS**,
typically inside of a
file folder.

What are

theses?

???

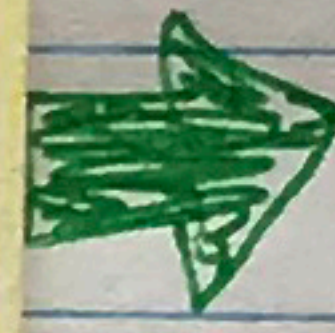
Notebook

Jotebook

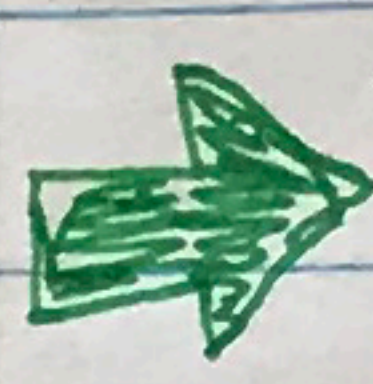
Journal

→ All of these...

- can be used for
- can help guide
- Keep everyone on the same
- help focus students' learning




organization and student led conferences





assessment and conferences - hard to lose the pieces

- * Used throughout an activity
- * Record predictions, questions, observations, and conclusions
- * Information based - notes for class and answering questions
- * Diagrams and figures.

- * Hybrid of the two 
- * Used throughout an activity.
- * Record predictions, questions, observations, conclusions, ideas, and reflections.
- * Information based with a focus on personal reflections.
- * Drawings, sketches, samples, figures, and diagrams.

- * Used after an activity
- * Record reflections, thoughts, wonderings, and opinions.
- * Personal in nature.
- * Drawings, sketches, and samples.

All of these... 

- can be used for organization and assessment 
- can help guide student led conferences
- Keep everyone on the same page - hard to lose the pieces
- help focus students' learning

What do
ISN's
look like for...

Primary

Intermediate

Middle

- ~ heavily scaffolded with continued structure
- ~ handouts where students fill in the blanks, add colour, etc.
 - ↳ possibly a few folded inserts
- ~ teachers regularly check ISNs for content
 - ↳ do students have everything?

Primary
Intermediate
Middle

- ~ scaffolded to some structure
 - ↳ students begin to choose content/layout (option exists for students to follow teacher organization or to follow criteria in their own way)
- ~ handouts with some personal expression
 - ↳ possibly some folded inserts
- ~ teacher checks content/organization less frequently (i.e. weekly instead of daily)

Intermediate

Middle

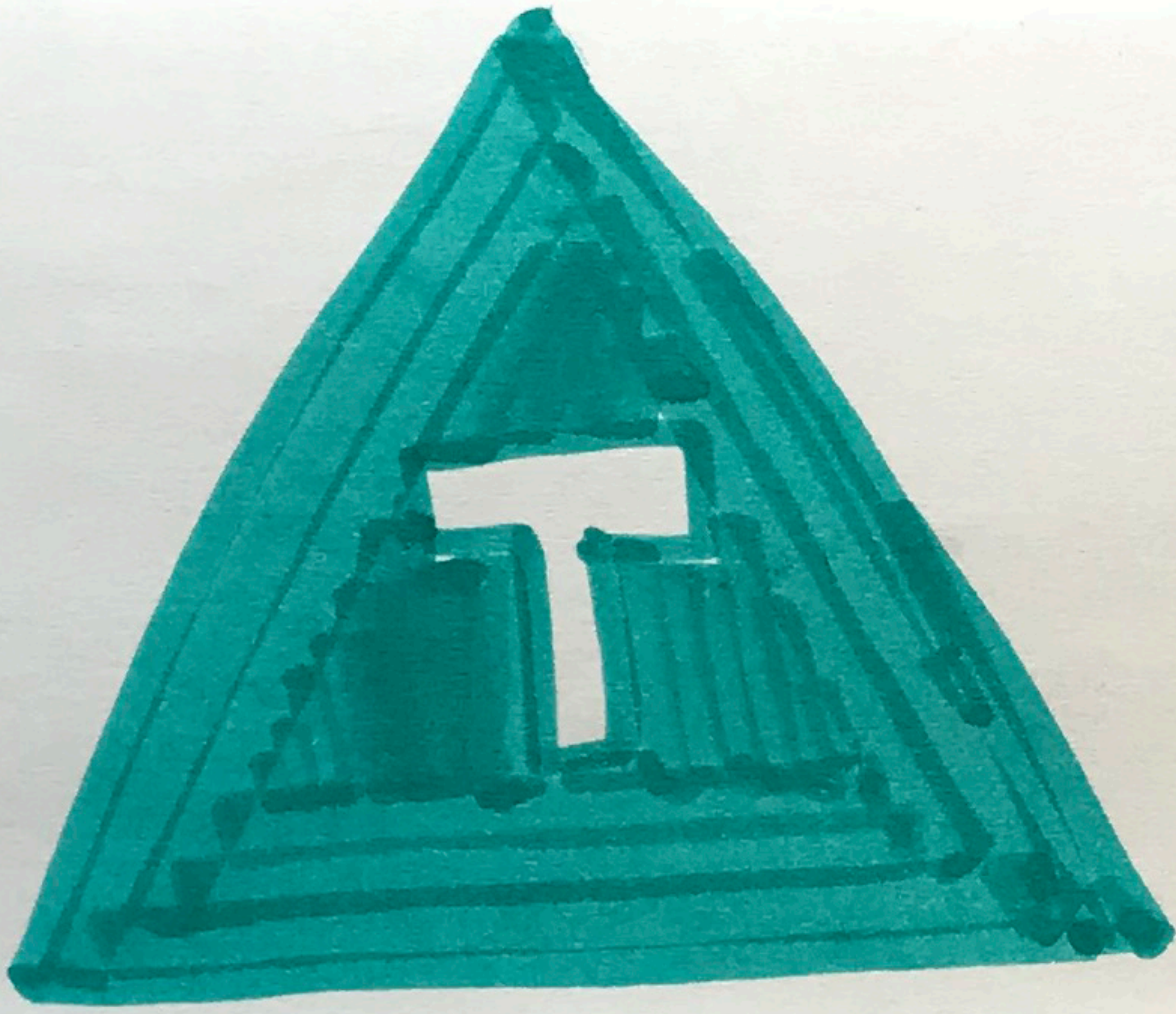
- ~ Scaffolded with gradual release of most structure (more freedom on formatting)
- ~ More personal expression of students' learning
 - ↳ possibly more folded inserts
- ~ Students occasionally check each others content/organization with teacher circulating to see who needs more support

Middle

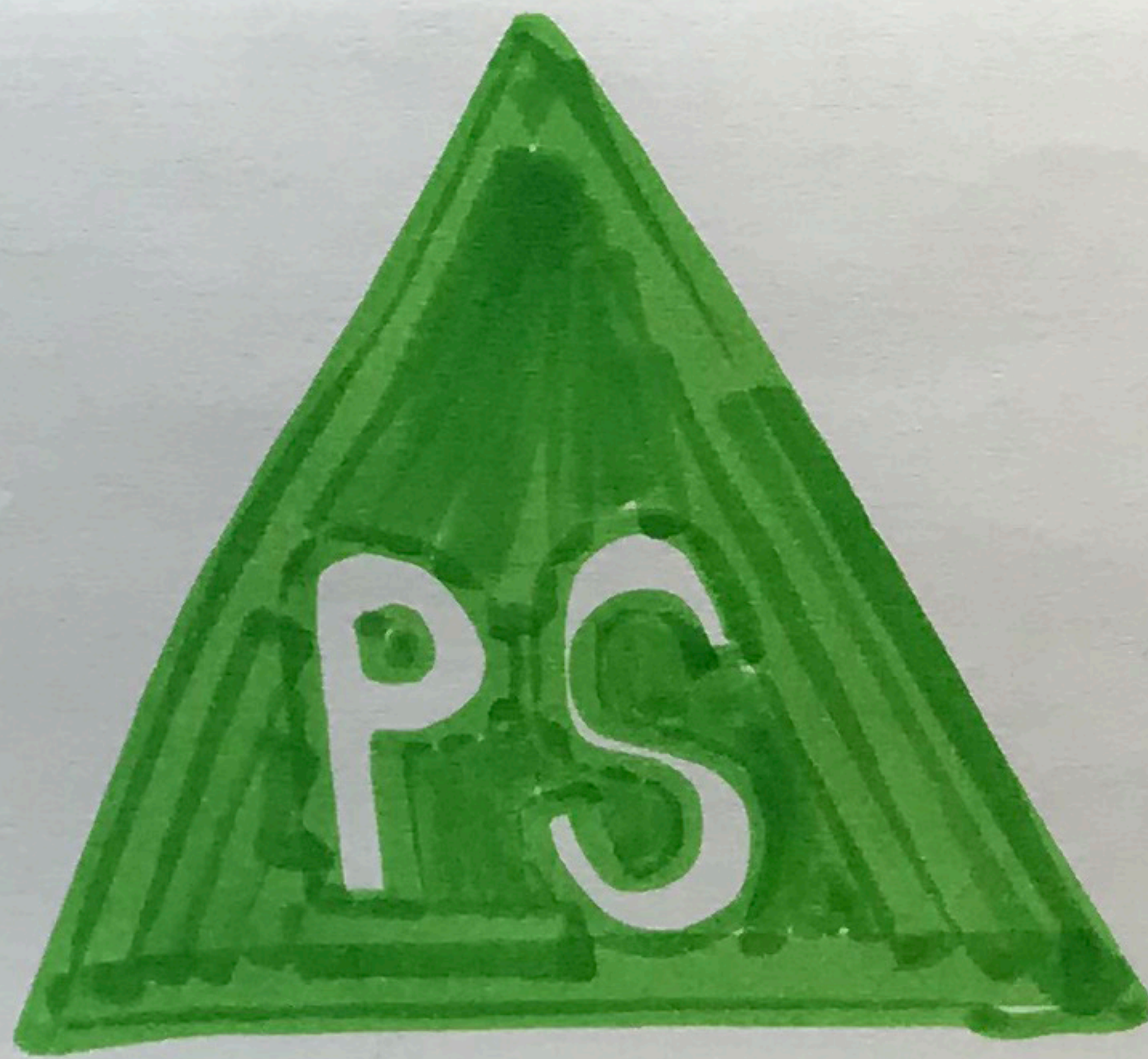
Connections to the



Communication



Thinking



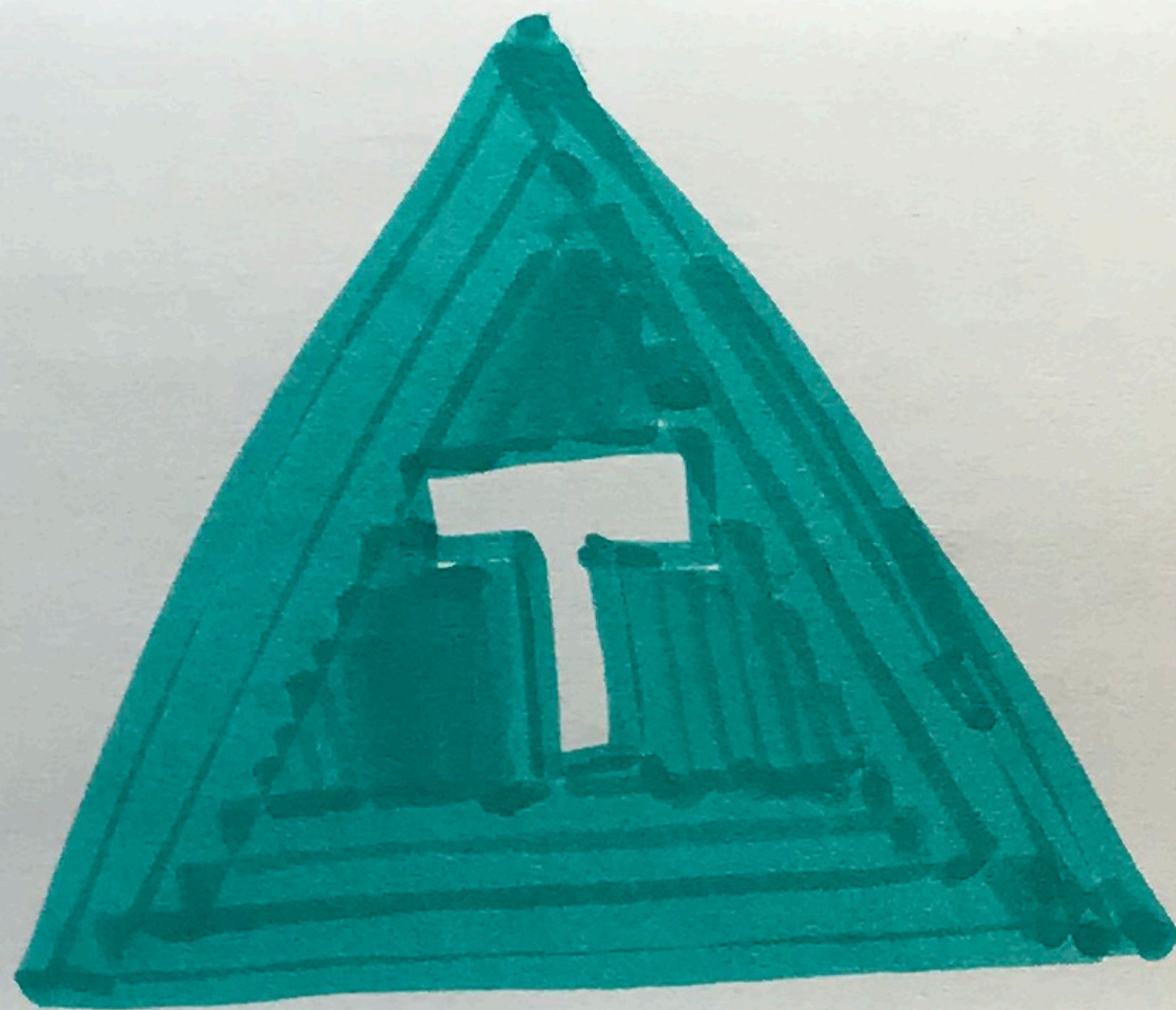
Personal & Social

Core Competencies

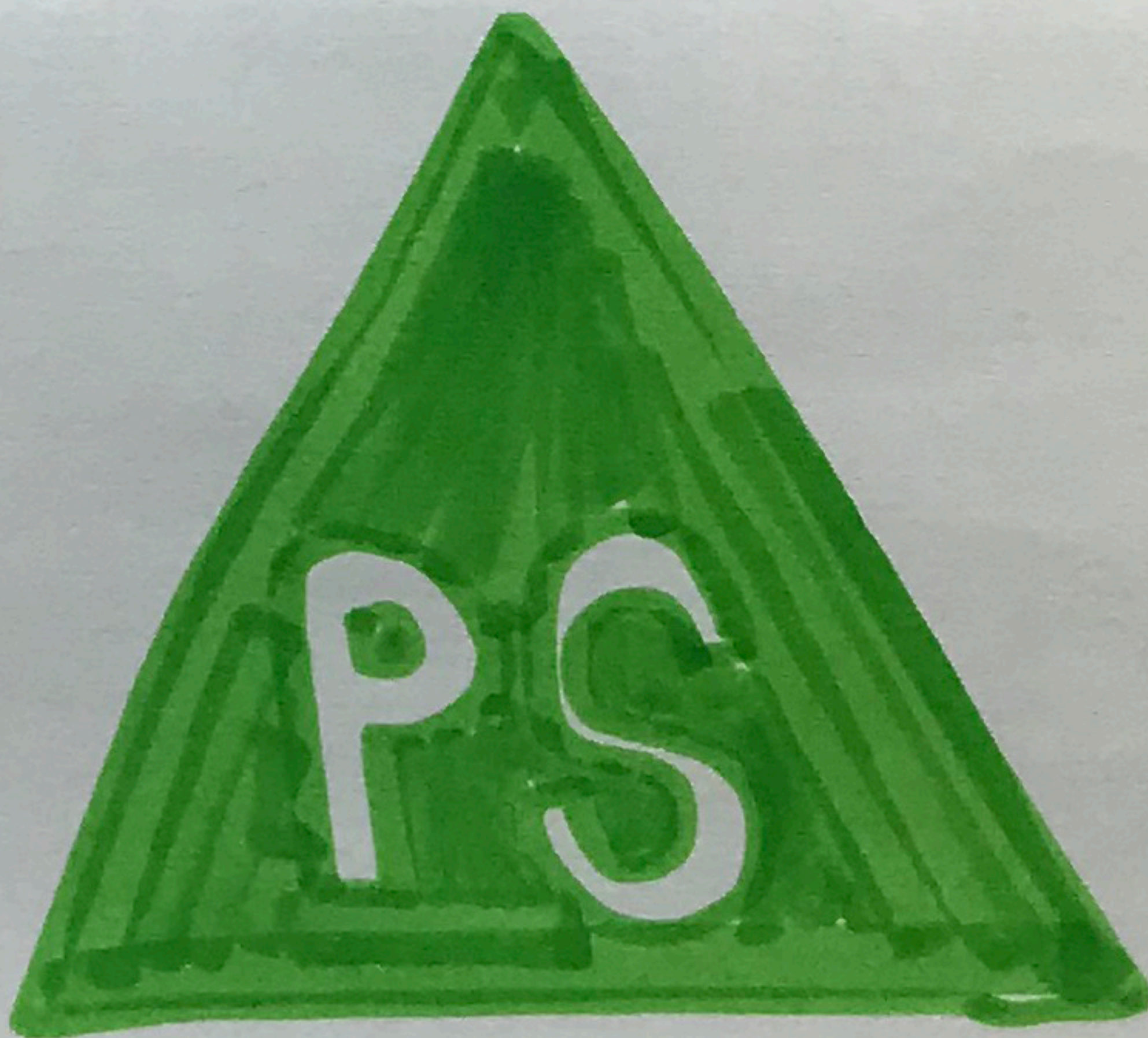
Connections to the

- I can present my ideas and questions clearly in an organized way.
- I can reflect on and explain my learning.
- I can actively listen and make connections.
- I can work with my classmates.

Communication



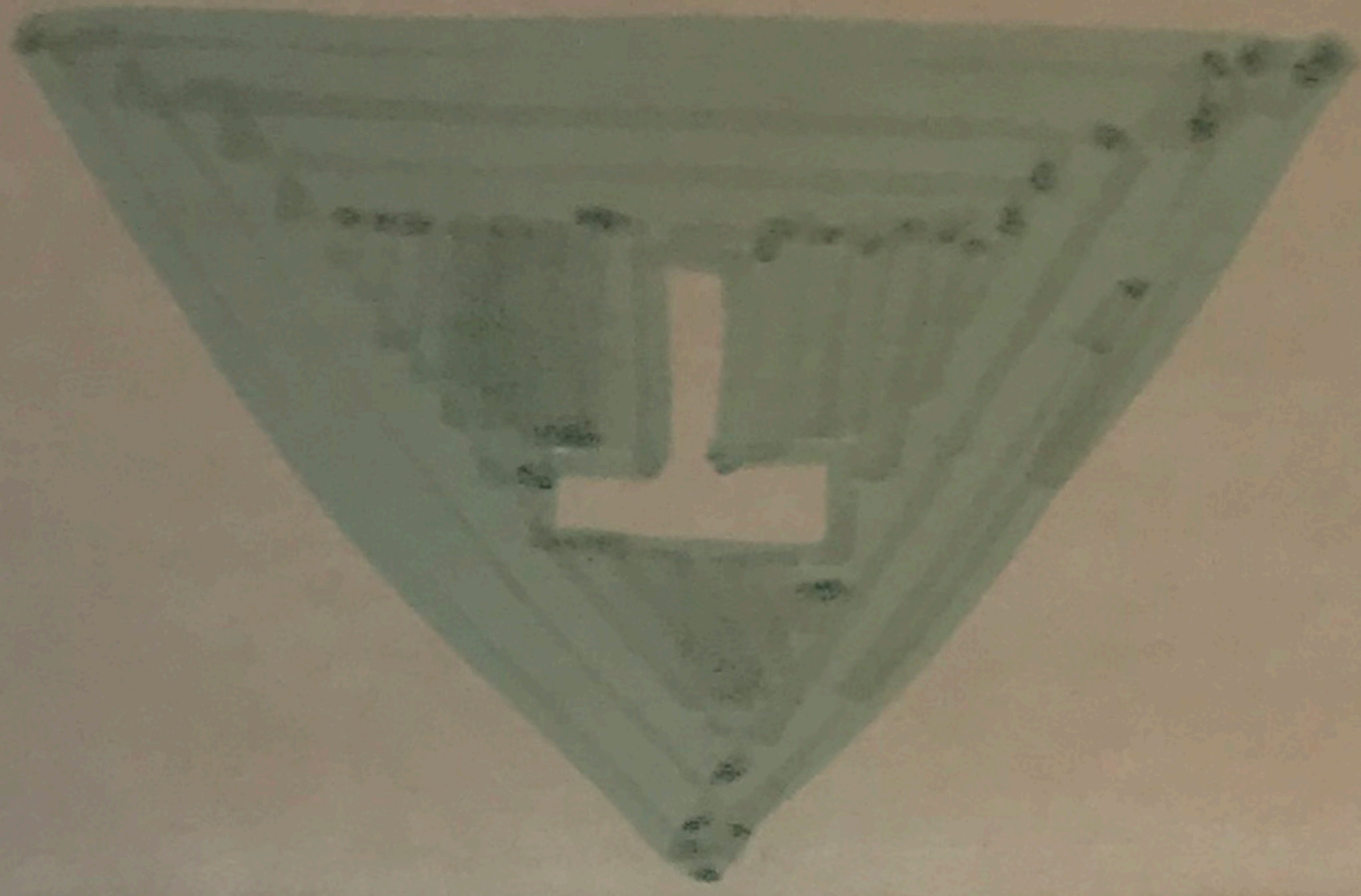
Thinking



Personal & Social

Core Competencies

Connections to the



- I can explore and ask questions to generate new ideas.
- I can try different ways of doing things.
- I can persevere when developing new ideas.
- I can question and investigate situations and ideas.



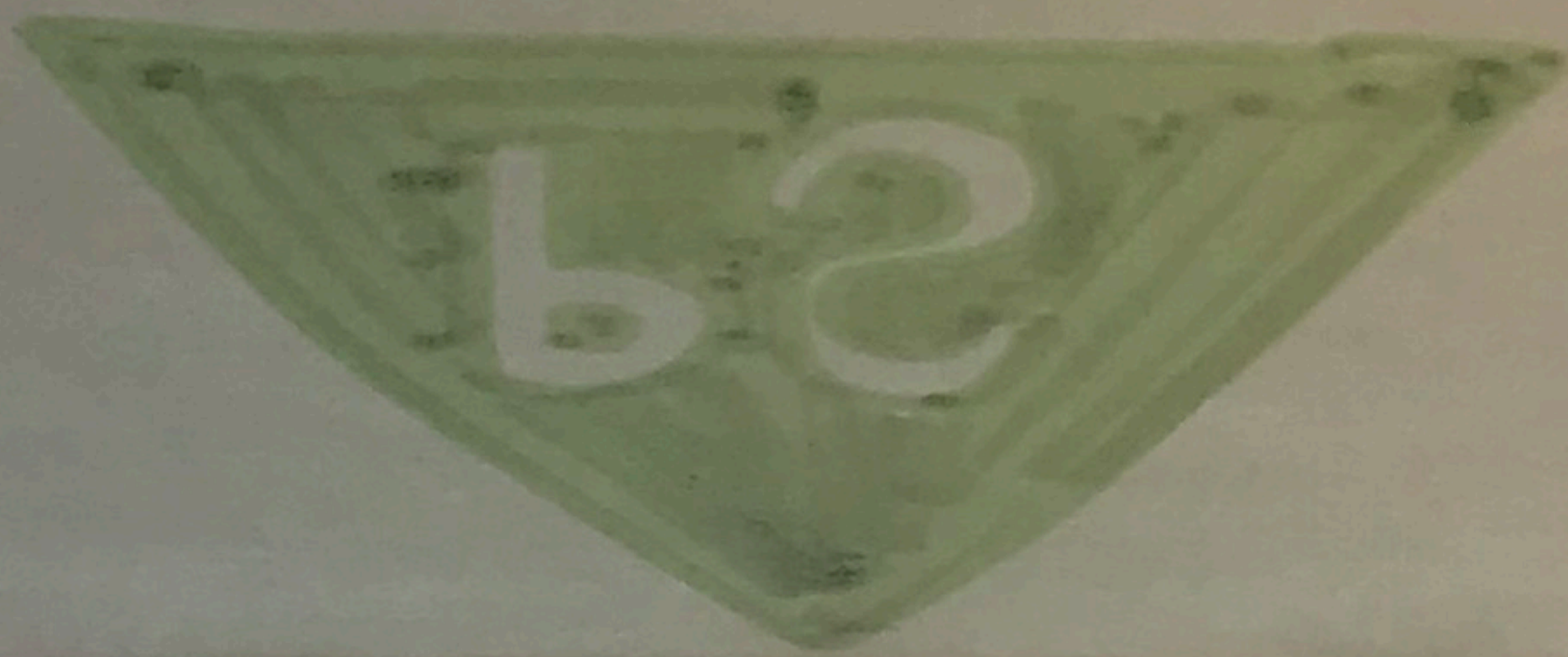
Personal & Social

Core Competencies

Connections to the

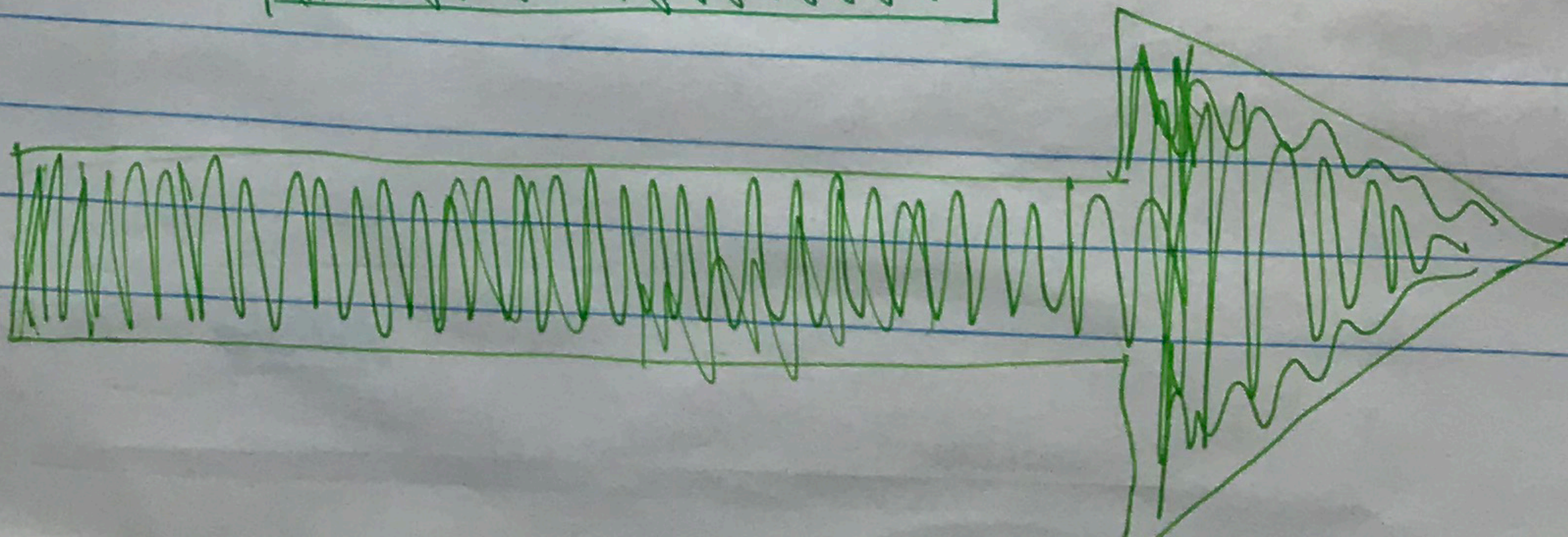
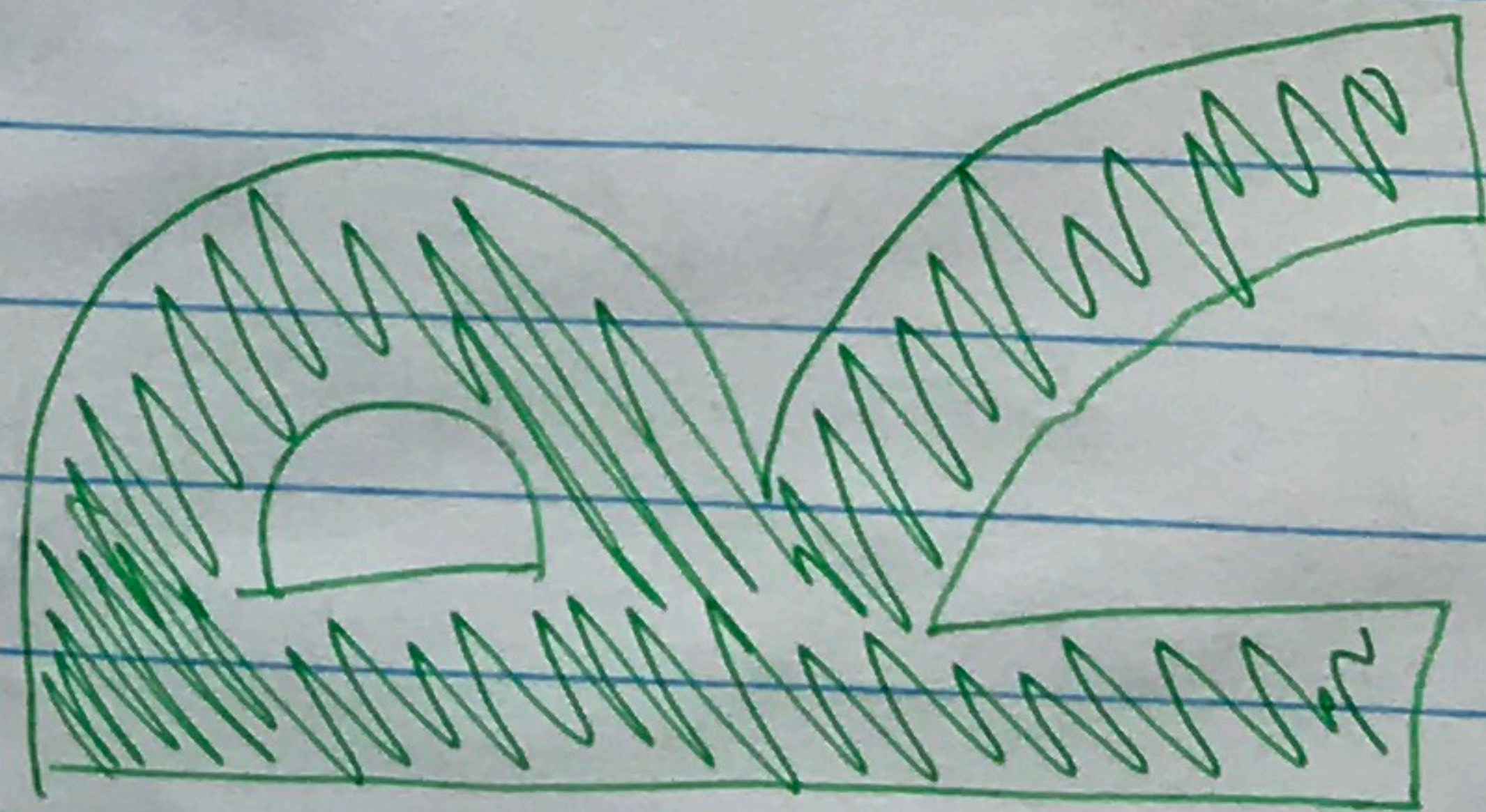
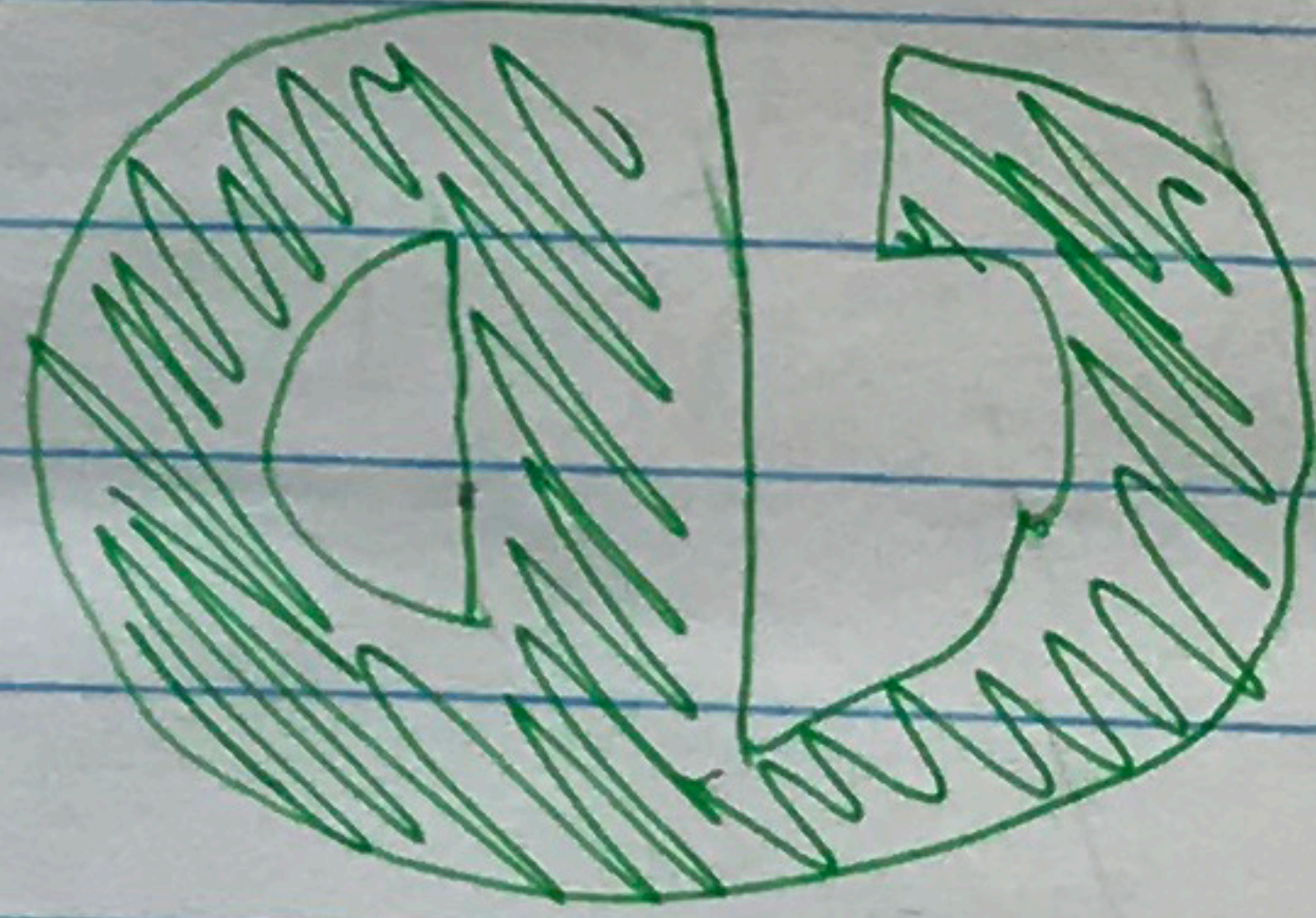
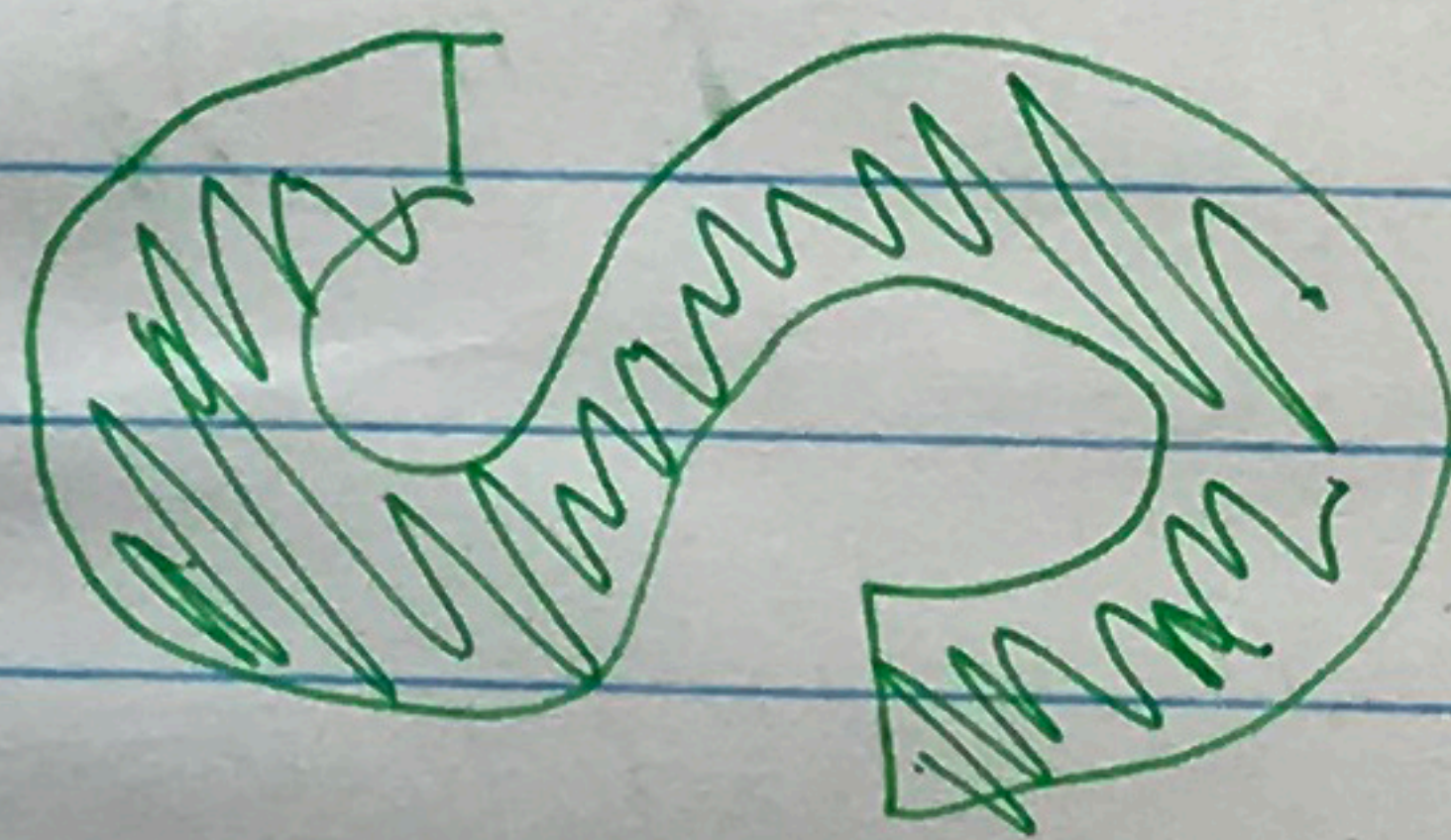
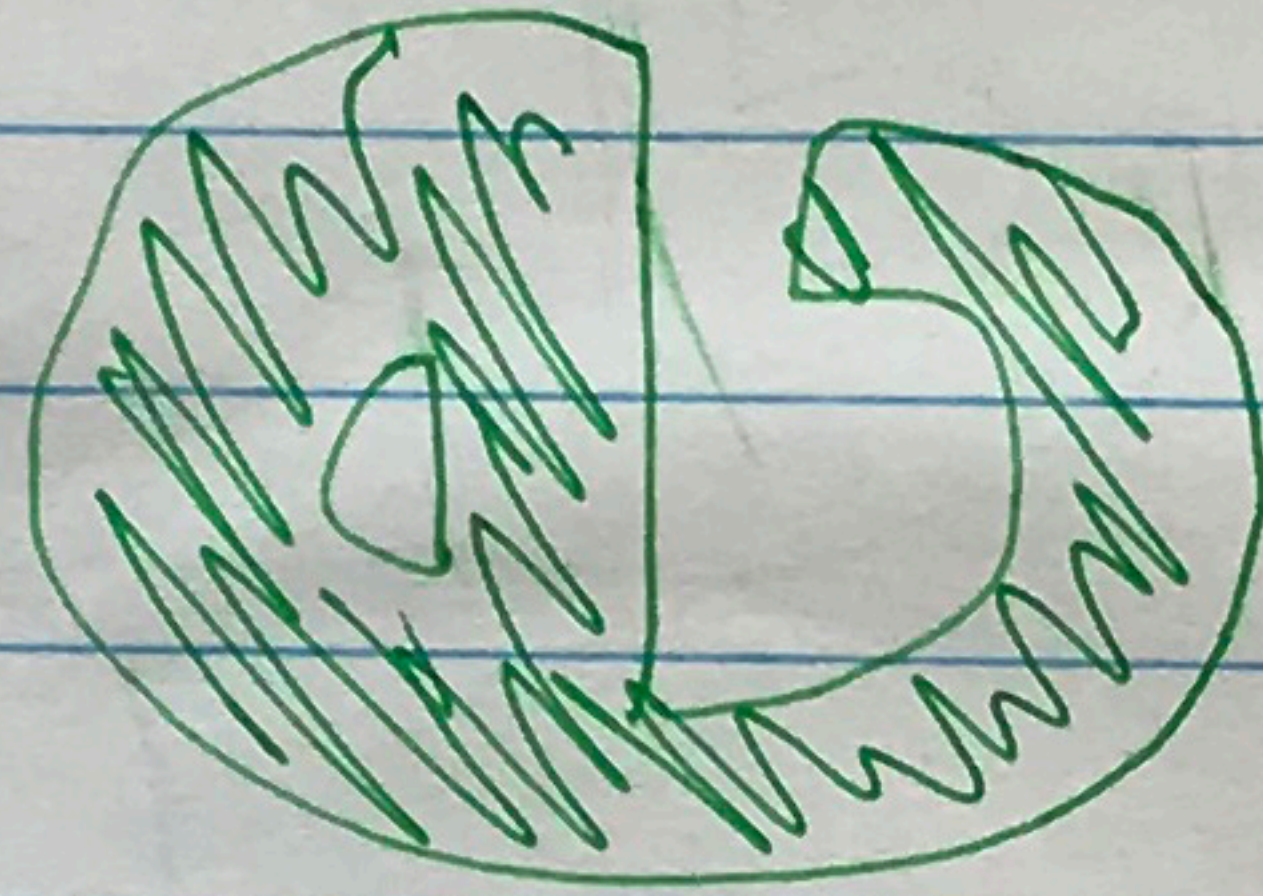
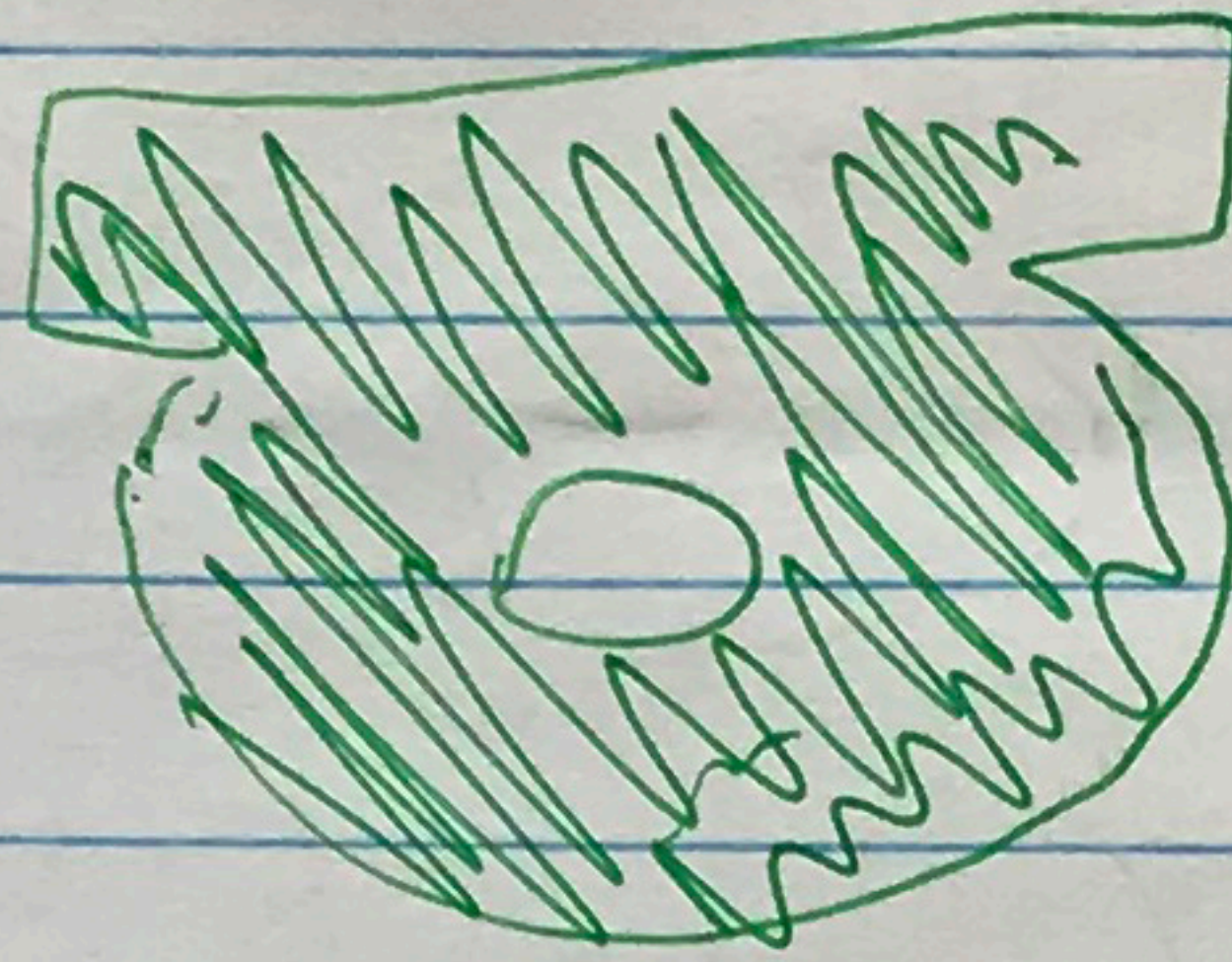
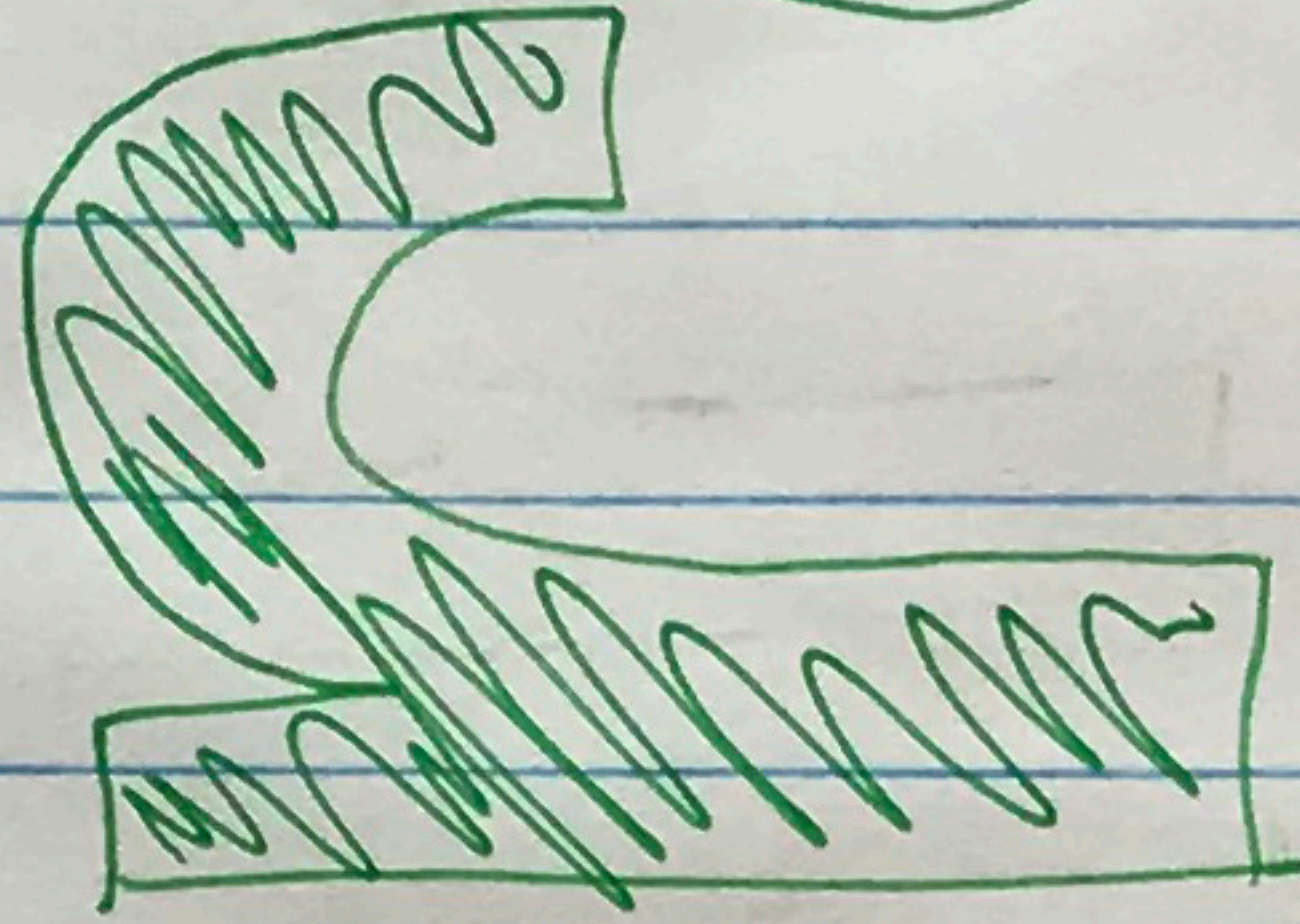
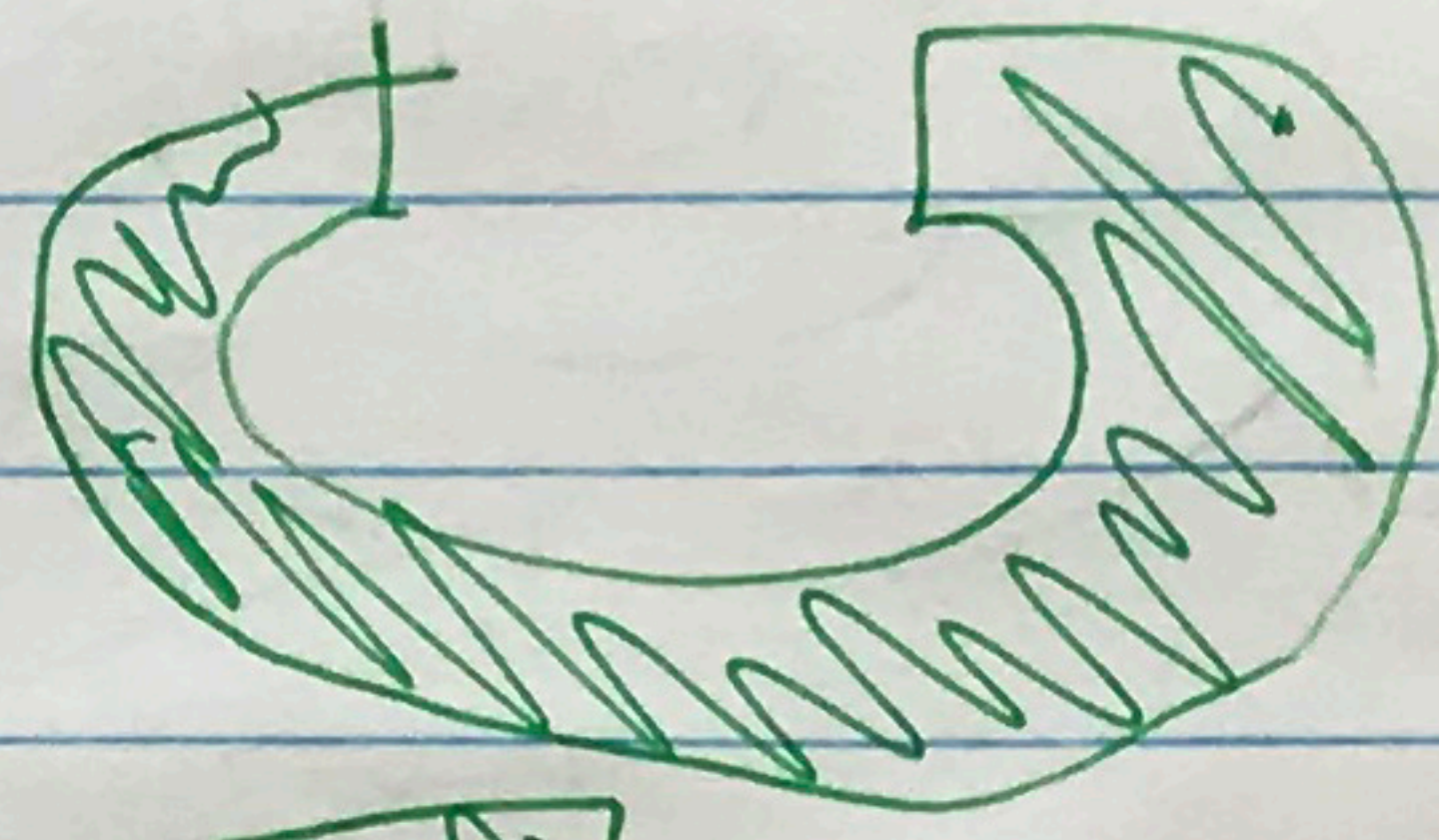
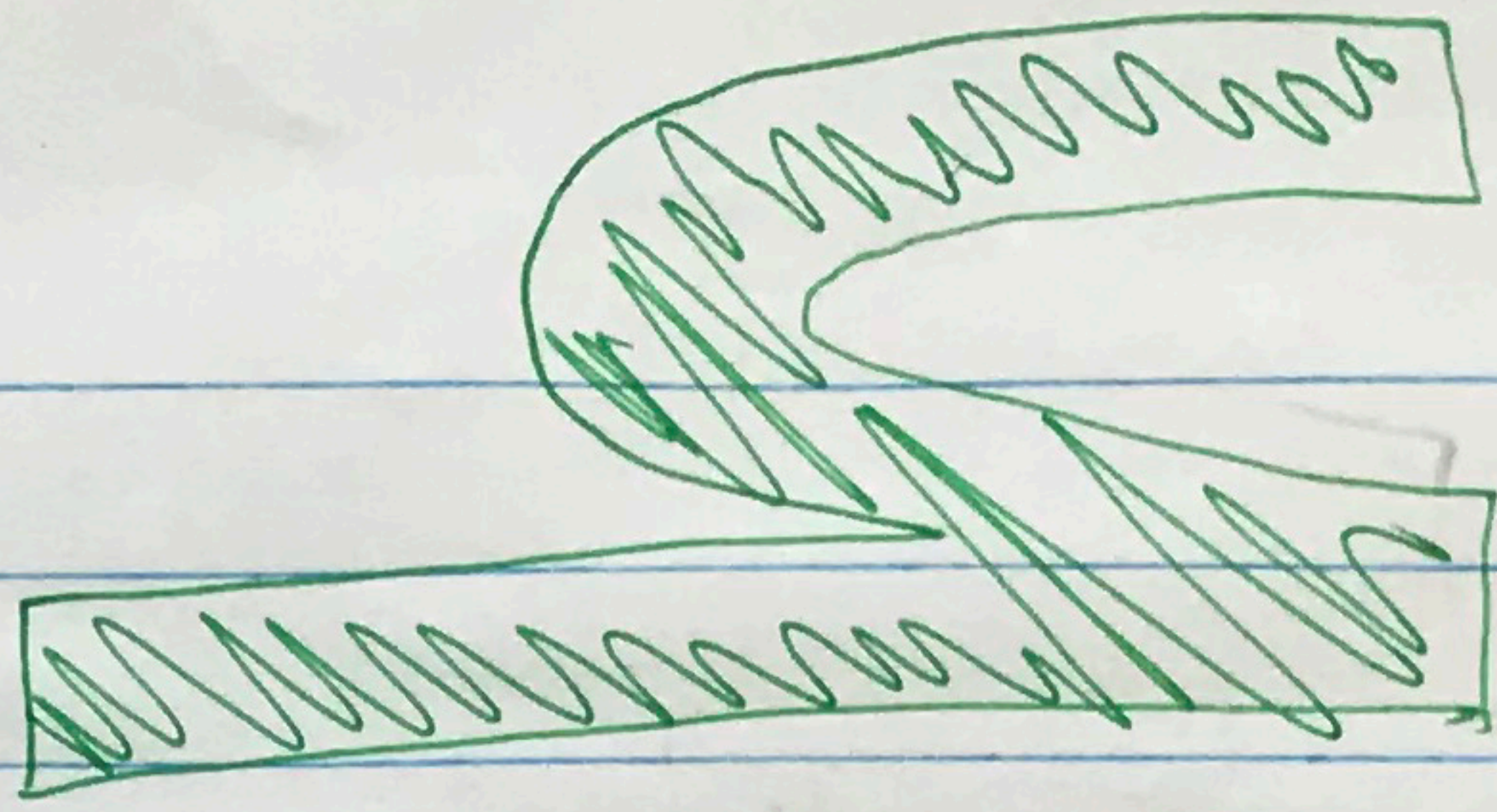


Communication



- I can share my feelings.
- I can set goals and use strategies to accomplish them.
- I can celebrate my growth.
- I can show respect, kindness, and support to others.

Core Competencies



Educators are always searching for ways to increase the academic achievement of students. Through the inclusion of interactive student notebooks (ISNs) in students' daily work activities, teachers are able to help their students to improve on their own performance and learning. Research in this field is relatively new and initial outcomes are pointing in a positive direction.

A recent study conducted by Newson (2019), has shown a statistically significant increase in post test scores when incorporating an ISN in class. During a 2016-17 Biology class, Newson divided 184 Biology students in Northwest Mississippi into two groups. A pretest was given, revealing students baseline achievement scores. Then students were divided into two groups, and one was provided with the ISN. Over the course of a year the students were retested part way through and at the end. The group that used the ISN showed statistically significant improvement in assessment scores compared to the control group. Similar to this study, Brown (2018) studied the effect of ISN on student achievement scores in grade 9 Biology. Brown specifically looked at how ISNs benefit student achievement scores by empowering students to gather and organize their information within the ISN. Some students did push back against being provided assistance in organizational techniques. However, over the course of the study these students changed their perspectives and increased their buy-in. A pretest-post-test was used as a comparison to test the effectiveness between two student populations. While both achievement scores improved, those who included ISNs in their work showed greater improvements.

A study conducted by Soto (2017) involved implementing ISNs with English language learners (ELL) in science. Soto's hypothesis was aimed to see if ISNs could help close the achievement gap between ELL and students classified as being proficient in English. The ELL were provided with the ISN framework and then had their academic performance evaluated through unit tests, pre and post interview questions, article summarization and vocabulary assignments. Over the course of the year, their results were compared to their English peers. The results showed ISN can lead to higher achievement scores for ELL by helping them develop English language proficiency faster.

Walden and Crippen (2009) state that an effective way to organize ISN class activities is through the use of 'IN, THROUGH, AND OUT' activities. IN activities are designed to scaffold discussion and prompt questions and gain student's previous knowledge about a topic. THROUGH activities is the teacher directed lessons, lab experiment, or any learning activity. Finally, the OUT activity is a space for student reflection on the lesson, making connections to other learnings, questions they still have or new ones that the lesson prompted. Structuring a lesson this way is beneficial for increasing student's meta-cognition, demonstrate their learning, engage more with their learning, and helps students to visualize and express their understanding and wonderings. Self-reflection is a very powerful feature of ISNs. It allows students to identify areas they still have misunderstandings, while also prompting them to create personalized connections to the class. Mason and Bohl (2017) had similar structures for their lessons. They encourage the use of KWL tables. Where students write they know before the lessons, what they are wondering about, and finally what they learned. Again this emphasis self-reflection and prompts students to be creative and always ask questions.

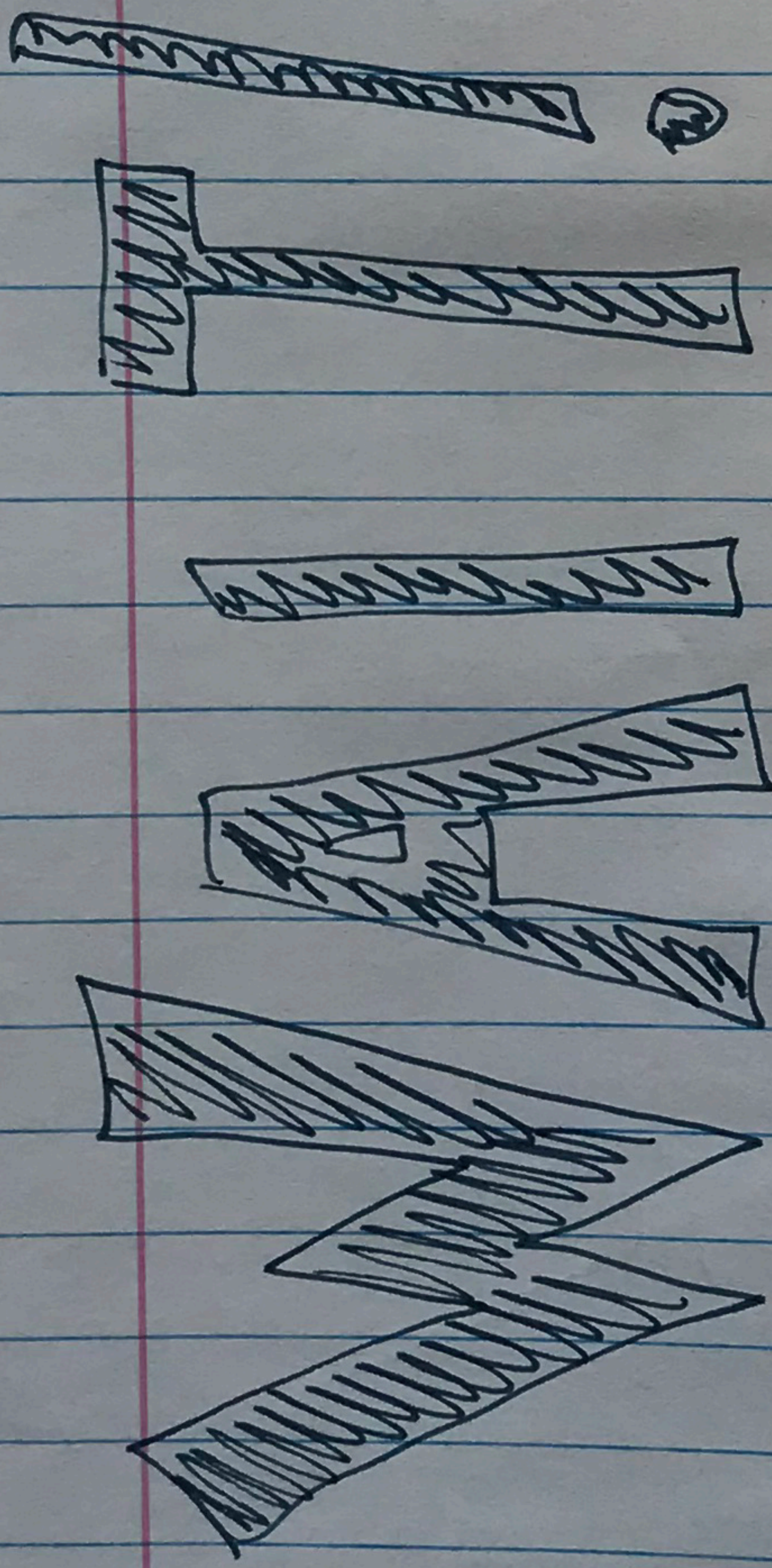
Interactive student notebooks have shown to significantly increase student's academic growth. ISNs provide many other benefits to learners. Students increase their organizational skills, discover personalize learning styles, and learn to express and synthesise their learning and growth. ISNs are great tools to empower students to become content creators with regards to their own learning. Students are not the only ones who benefit from ISNs. Teacher can use ISNs to assess student work, improving their ability to see students learning. This can help teachers tailor future lessons and course work around student needs and interests.

While initial ISN inclusion appears to be promoting positive academic improvement in a variety of subject areas, there needs to be continued research into this area of student growth. ISN are still in an early stage of incorporation into the classroom. Through continued research and promotion of the benefits of ISN, positive social change can be achieved, while closing achievement gaps. ISNs are a great tool to promote student ownership of their own learning, promote cross-curricular learning, and can increase student engagement in class.

PIPOOS

Breaks down topics into manageable chunks

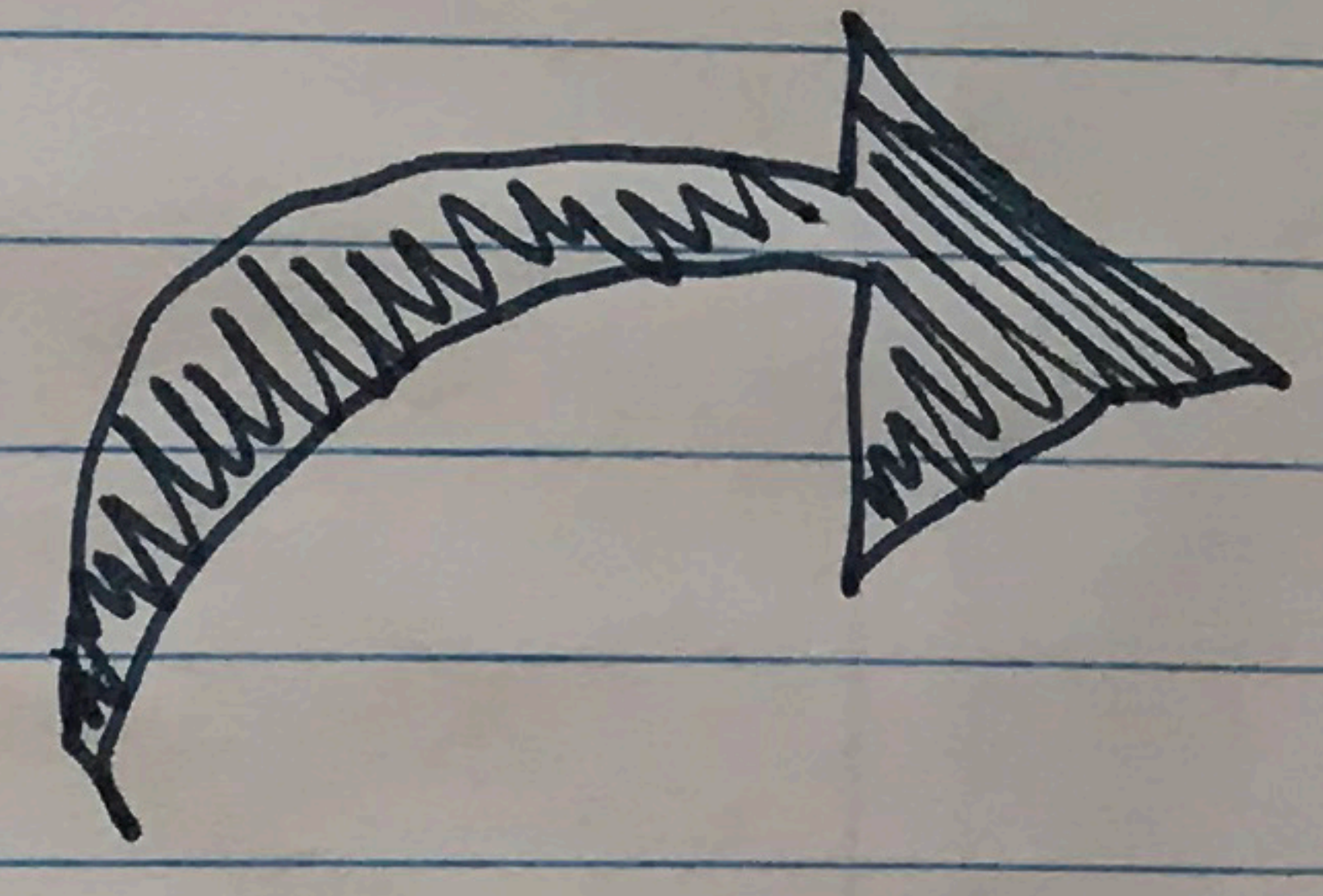
- Process of learning and creating



before

Considerations

application...

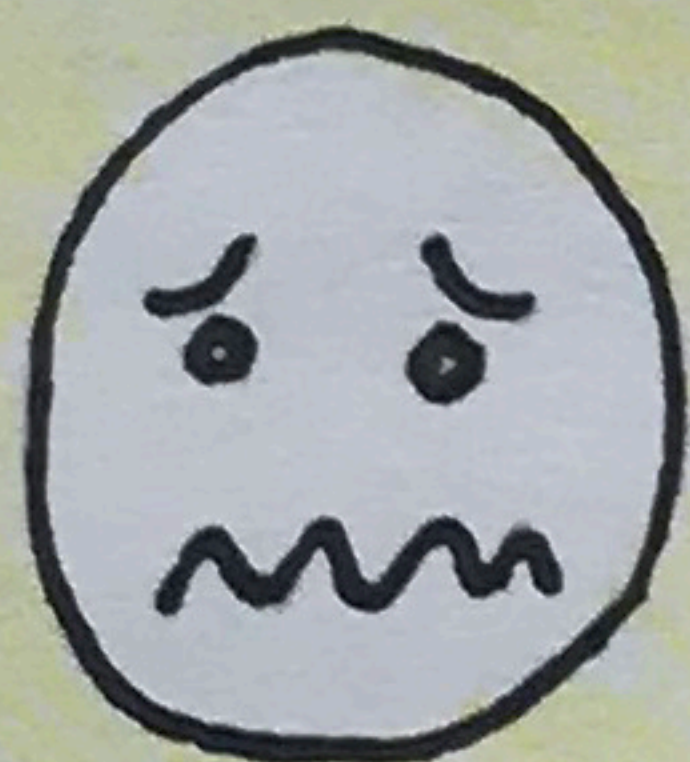


CONS



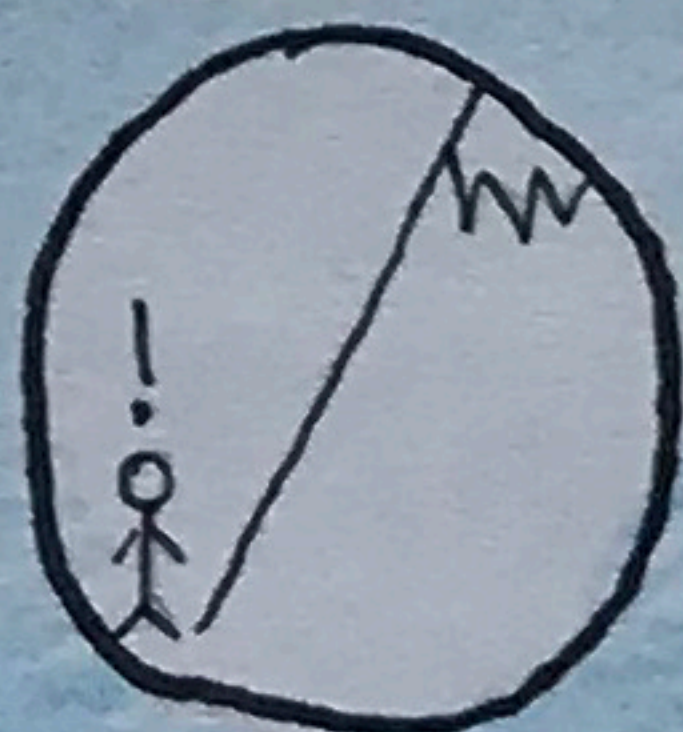
class & prep time

non-visual learners



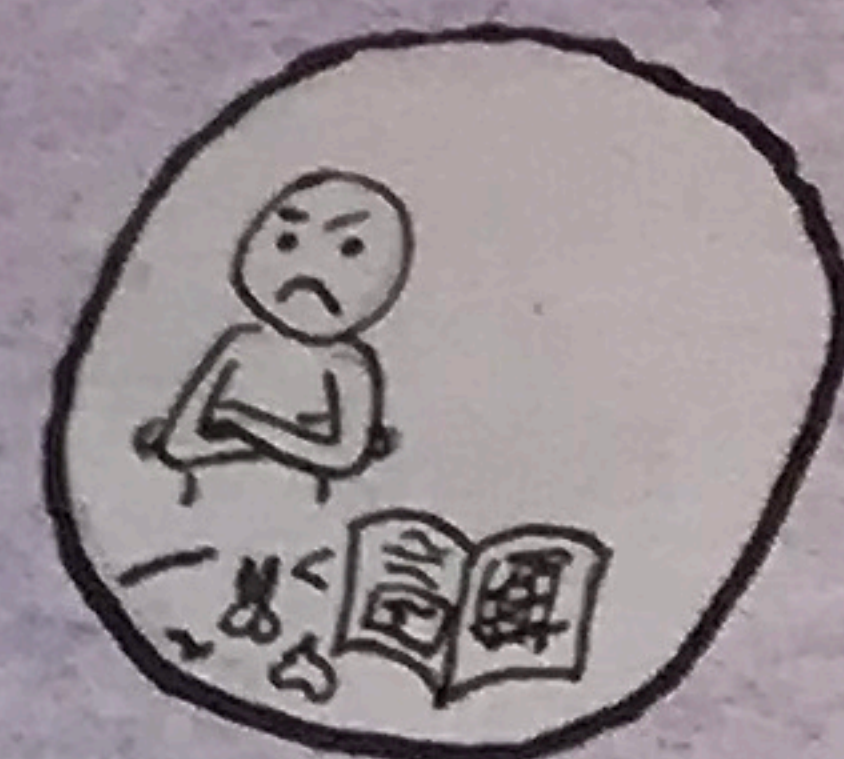
can cause anxiety

new or absent students




physical & cognitive barriers

doesn't appeal to all learners

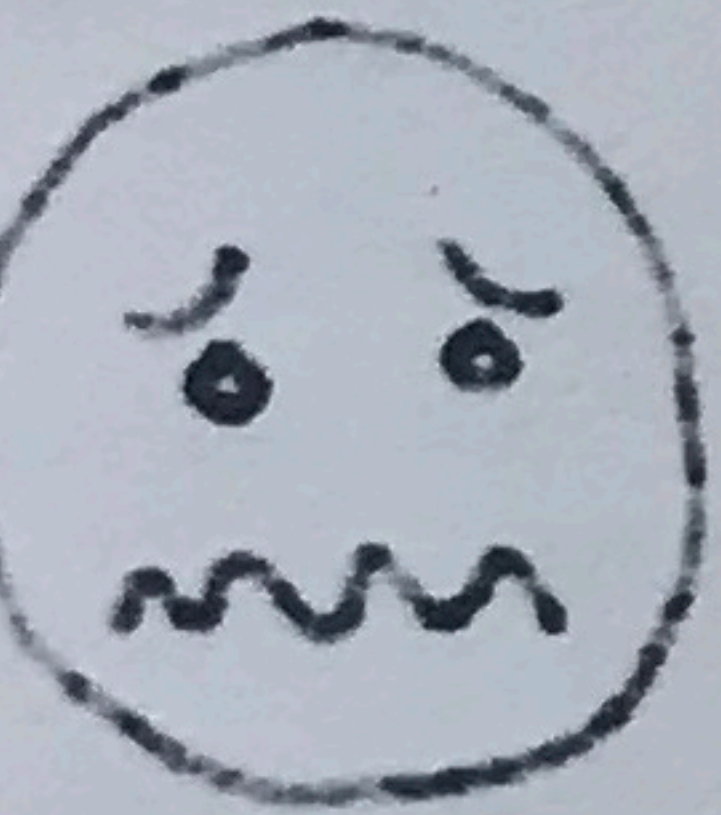


ADAPTATIONS


Tan

- 
- 1) Scaffold students towards autonomy
 - 2) Provide daily class time to work on this
 - 3) IT WILL GET EASIER EVERY YEAR!

- 1) Provide alternatives + do not grade appearance (ie. incorporate technology)
- 2) Allow + encourage copying / buddy system

- 
- 1) Emphasize that this is personal + not evaluated based on appearance
 - 2) Spend lots of time scaffolding

- 1) Keep a folder with master copies so that it is easy to catch new students up.
- 2) Put student's name on handouts so they can find ones they have missed
- 3) Give catch-up time + allow students to work together

- 
- 1) Allow tech alternatives to paper
 - 2) Encourage collaboration + buddy systems
 - 3) Evaluate content, not appearance.







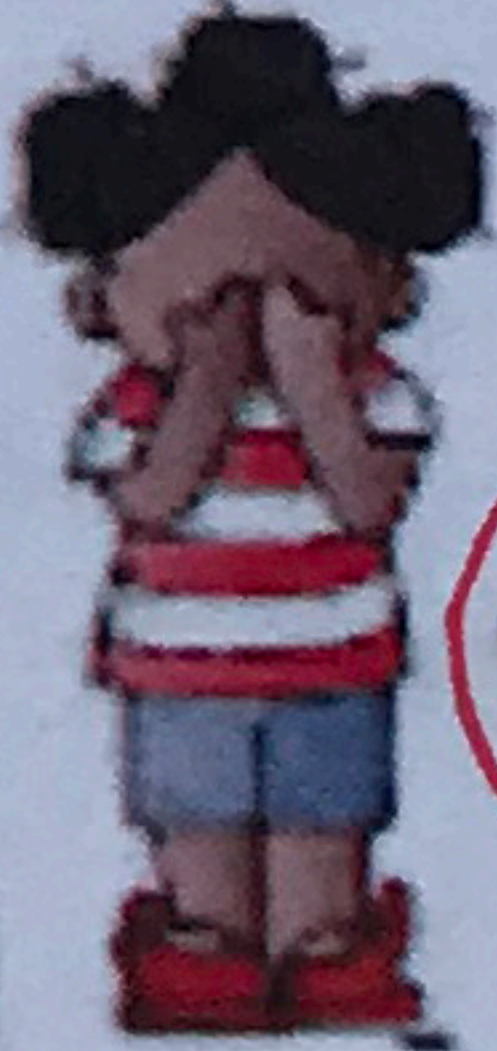

- 1) Encourage students to personalize (as long as they meet content requirements)
- 2) Focus on student-centred lessons so that they are motivated by the content

Hilroy

How NOT To ...

stars play into a reward system, rather than intrinsic motivation

Interactive Notebook Rubric

 	<ol style="list-style-type: none"> Title is at the top of the page. Page pieces are cut and glued neatly. Answers are clear and thoroughly shows understanding of concept. Coloring is neat and exceeds grade level expectations.
 	<ol style="list-style-type: none"> Title is at the top of the page. Page pieces are cut and glued neatly. Answers are clear and show a strategy used. Shows understanding of concept. Coloring is neat.
 	<ol style="list-style-type: none"> Title is at the top of the page. Some page pieces are cut and glued Answers are simple or have some errors. Little coloring is complete.
 	<ol style="list-style-type: none"> Title is <u>NOT</u> at the top of the page. Few page pieces are cut and glued Most answers have errors or do not show strategies used Little or NO coloring

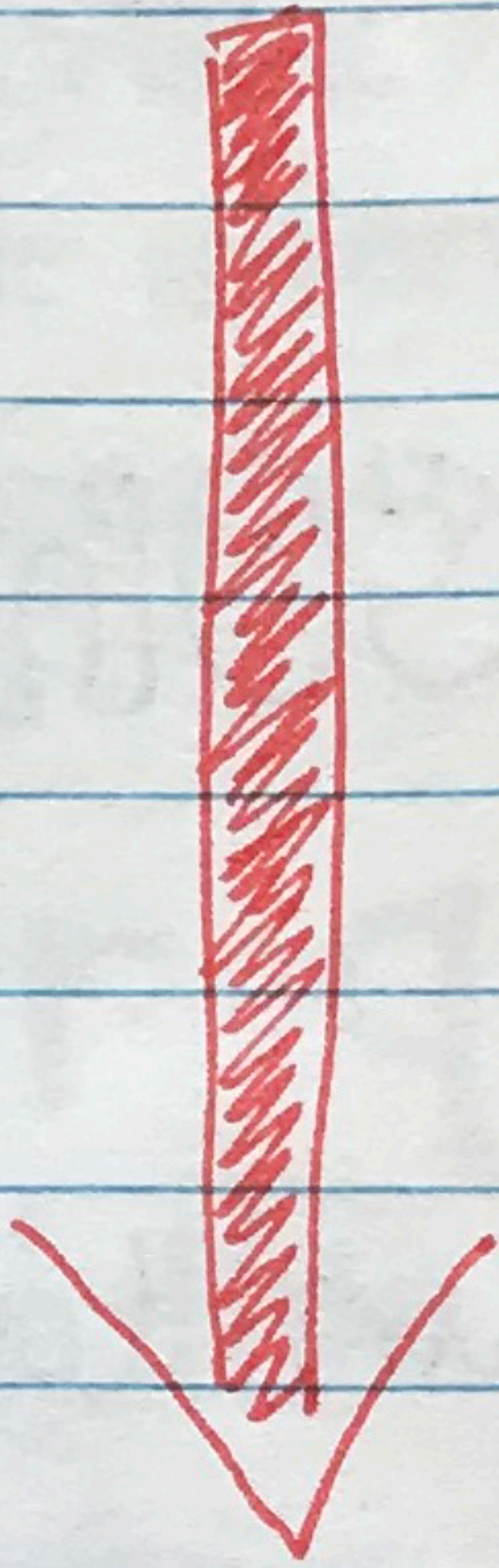
© Bright Concepts 4 Teachers

Deficit model is

Body Language indicates shame

Artistic ability need not be a measurement of success.

Suggestions ...



Ways to assess ISN:

- No grades at all - just make sure students have work in the right place and filled out (assessment for learning)
- Ask students to leave their ISN open to a specific page at the end of the day. Teacher can assess if the work is completed, if the answers are correct, etc.
- Could use a system where the majority of marks (perhaps 50%) are given for organization. The rest of the marks could be from specific work samples (teacher or student chosen; e.g. "pick four pieces of work that best show your learning of...")
- Could be used for student-led conferences (it becomes their portfolio)

ISNs are a way to communicate between students, teachers, and parents, where each stakeholder can visually and clearly see learning.

Remember:

- ISNs are a personalized document
- To respect students' ISNs by not writing in it and instead using sticky notes

*Sherri,
Your detailed picture
has shown your
understanding of the
human brain
Continue to reflect in
your ISN about the
purpose of each part
I look forward to more
of your thoughts*

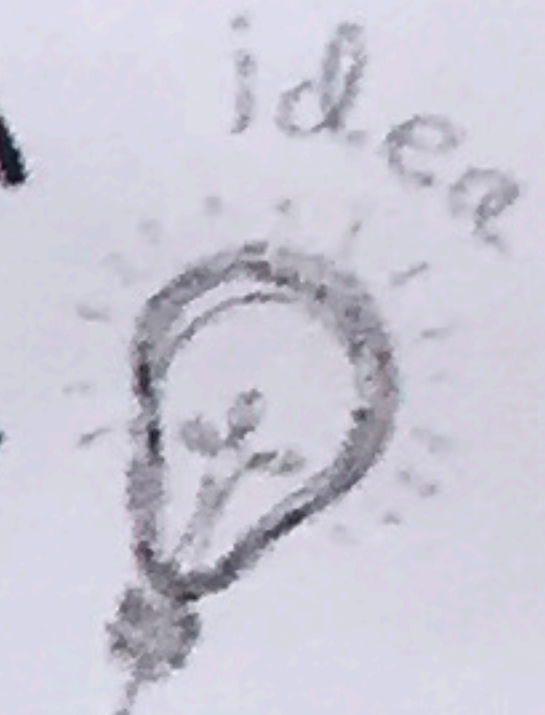
*Tommy,
I really enjoyed your pop
out image of planet
Earth
Your attention to detail
in identifying all of the
South American
countries was stunning
Keep adding to it and
making it grow!*

- To make the criteria and expectations of the ISNs very clear to students (these items are usually kept in the front of the book for easy access)
- ISNs are evidence of growth
- ISNs can be used for both self- and teacher assessments

Make space for connections.

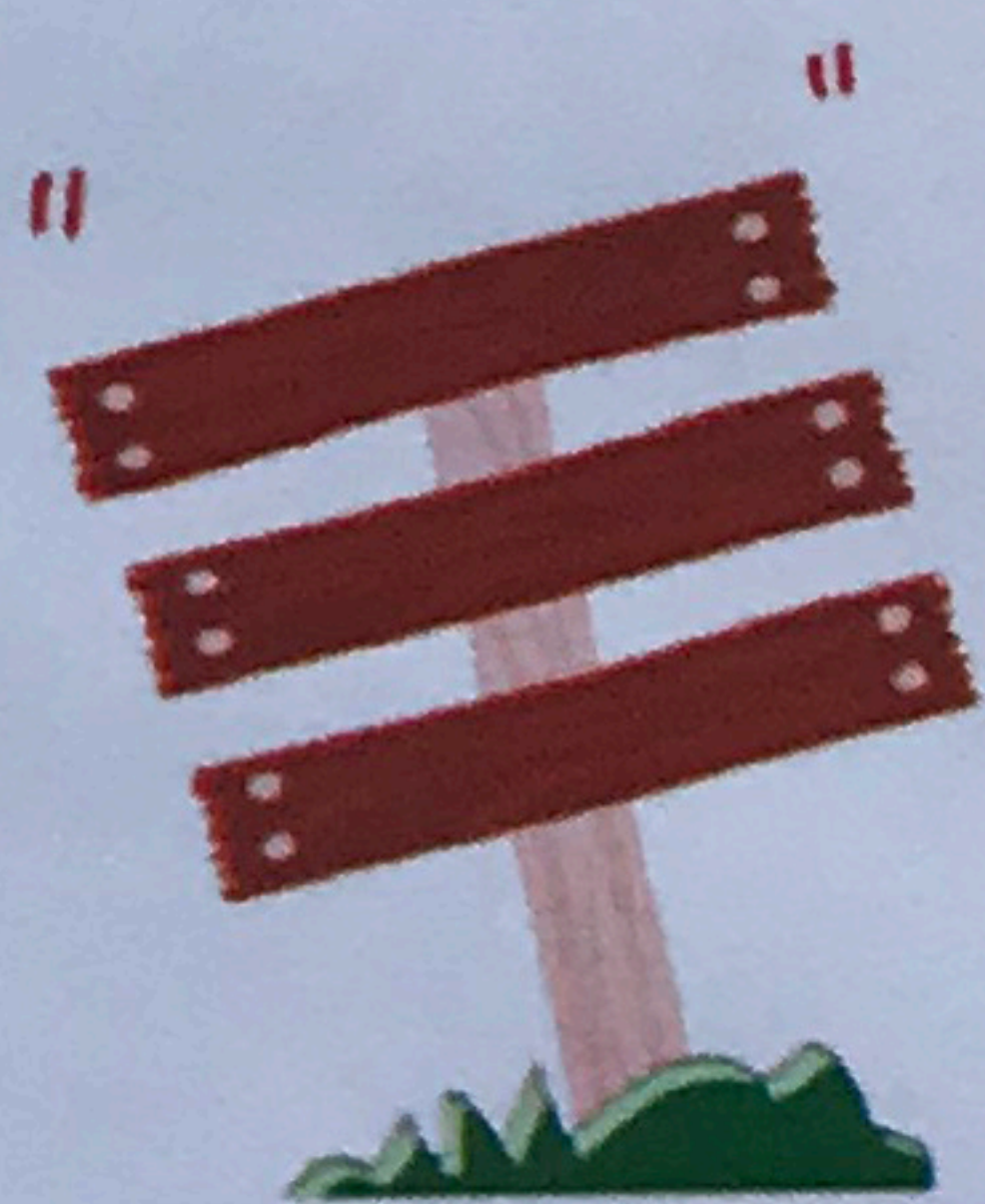
- ⦿ What is your take-away today?
- ⦿ Did anything make you wonder?
- ⦿ What did you connect with?
- ⦿ What did you like or dislike?

"AHA!"

- something that grabs the students' attention sparking their interest allowing them to make connections, and dig deeper 

" anchor questions:

- How might this change things?
- Why's the character doing that?
- * a conflict has been identified
- * a problem was solved

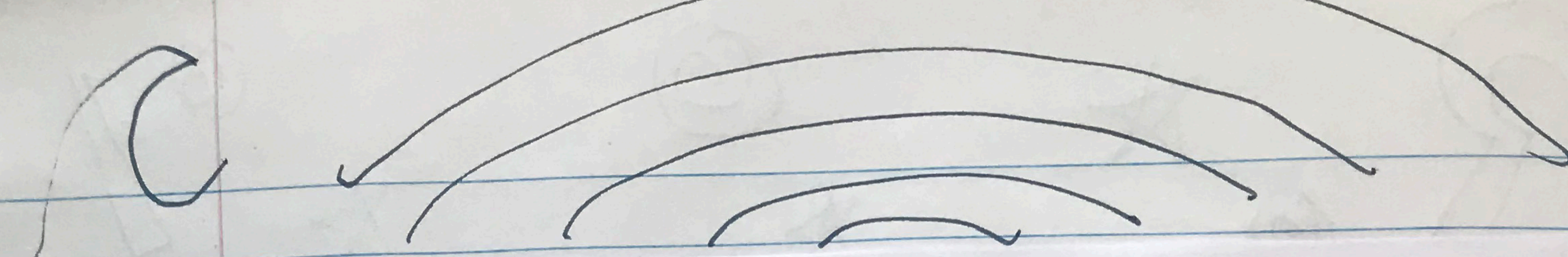


Sign Posts!

- contrast and contradictions
- characters' facial expressions
- * helps make predictions about plot
- * life lessons learned, shows theme

" Detect: notice and note

- * find clues & make connections
- * think critically



the WATER CYCLE

the process by which water moves through the earth and atmosphere

EVAPORATION: the process that occurs when water changes from a liquid to a gas, caused by heat.

CONDENSATION: the cooling of water in the atmosphere changing gas to a liquid.

PRECIPITATION: water droplets fall from the atmosphere in the form of rain, sleet, snow, or hail

OCEAN: largest body of water on earth 75% of the earth's surface

SUN: provides energy that evaporates water, and heats the land.





the **WATER CYCLE**


• notes.


75 % of the surface of the Earth is water. Without water we could not survive.

FOUR CHARACTERISTICS of
..... water

 colour

 clarity

 salinity

 taste


Water is the lifeblood of organisms. Nutrients are distributed and wastes products are removed.

☞ List Five Ways we use water

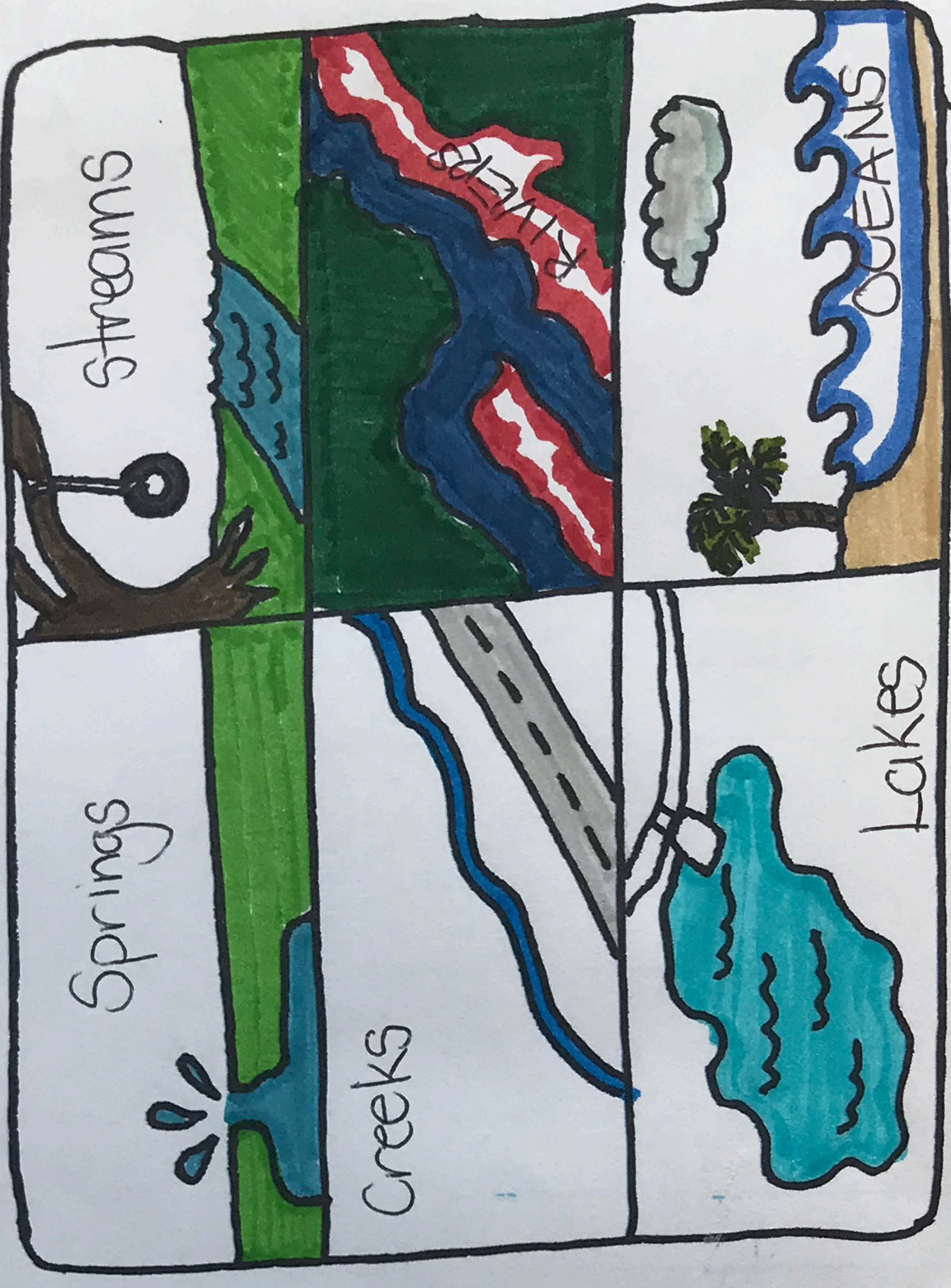
- ☞ cook, drink, eat
- ☞ bathe, wash, brush teeth
- ☞ swim, surf, ski, snowboard
- ☞ hydro-power
- ☞ put out fires

Most of the Earth's water is at the North and South poles in the form of ICE.

★:★: IMPORTANT TO KNOW ★:★:★:★:
★:★: The amount of water has stayed the same over eons of years, however the form or state of water is constantly changing

The  is the driving force of the Earth's weather.
The major source of energy which powers the water cycle is the Sun.


We use our water from:

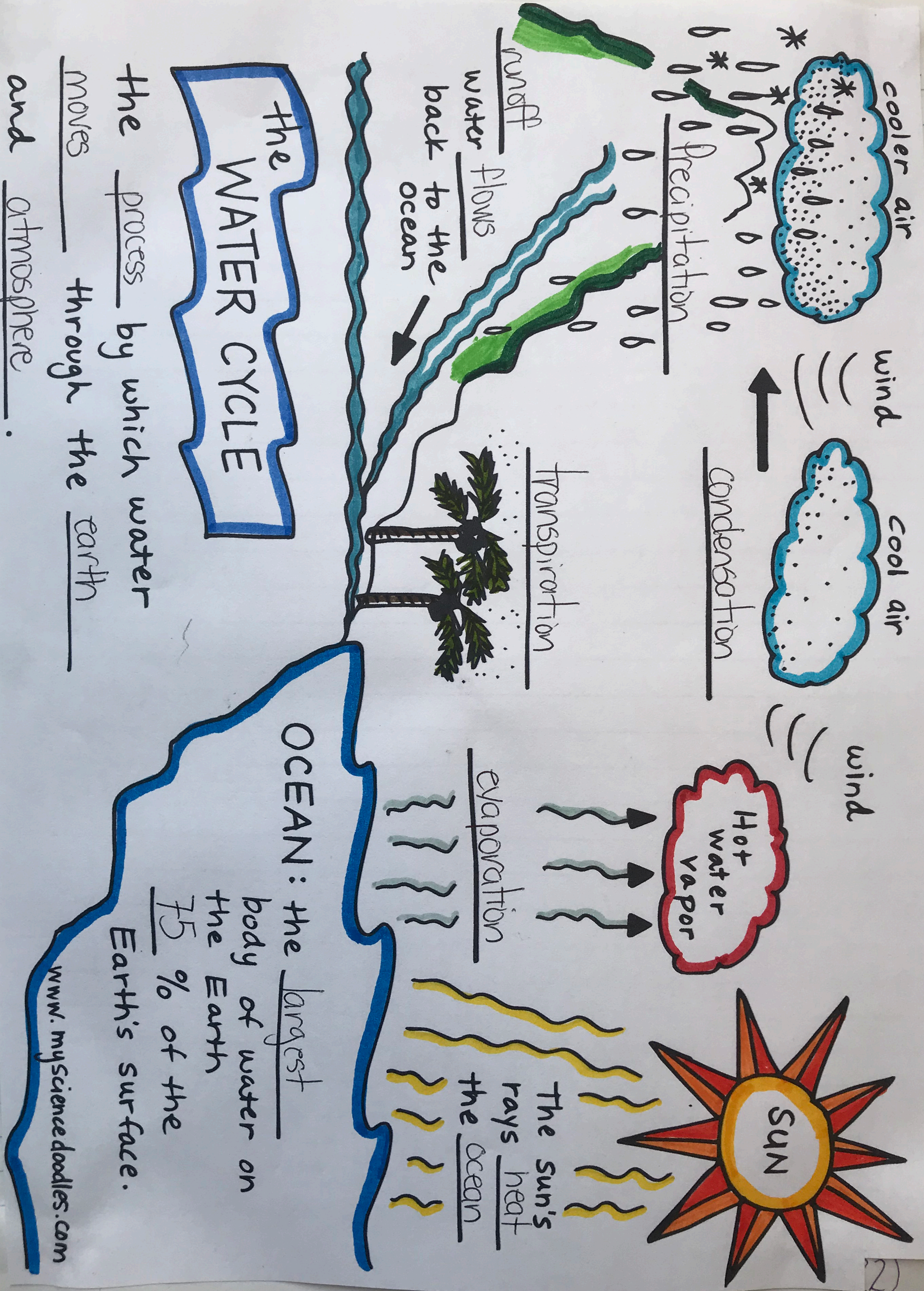


Water Classifications of

1. Salt water found in Oceans.
2. Fresh water is our primary source of drinking water.

the WATER CYCLE has NO start or END.







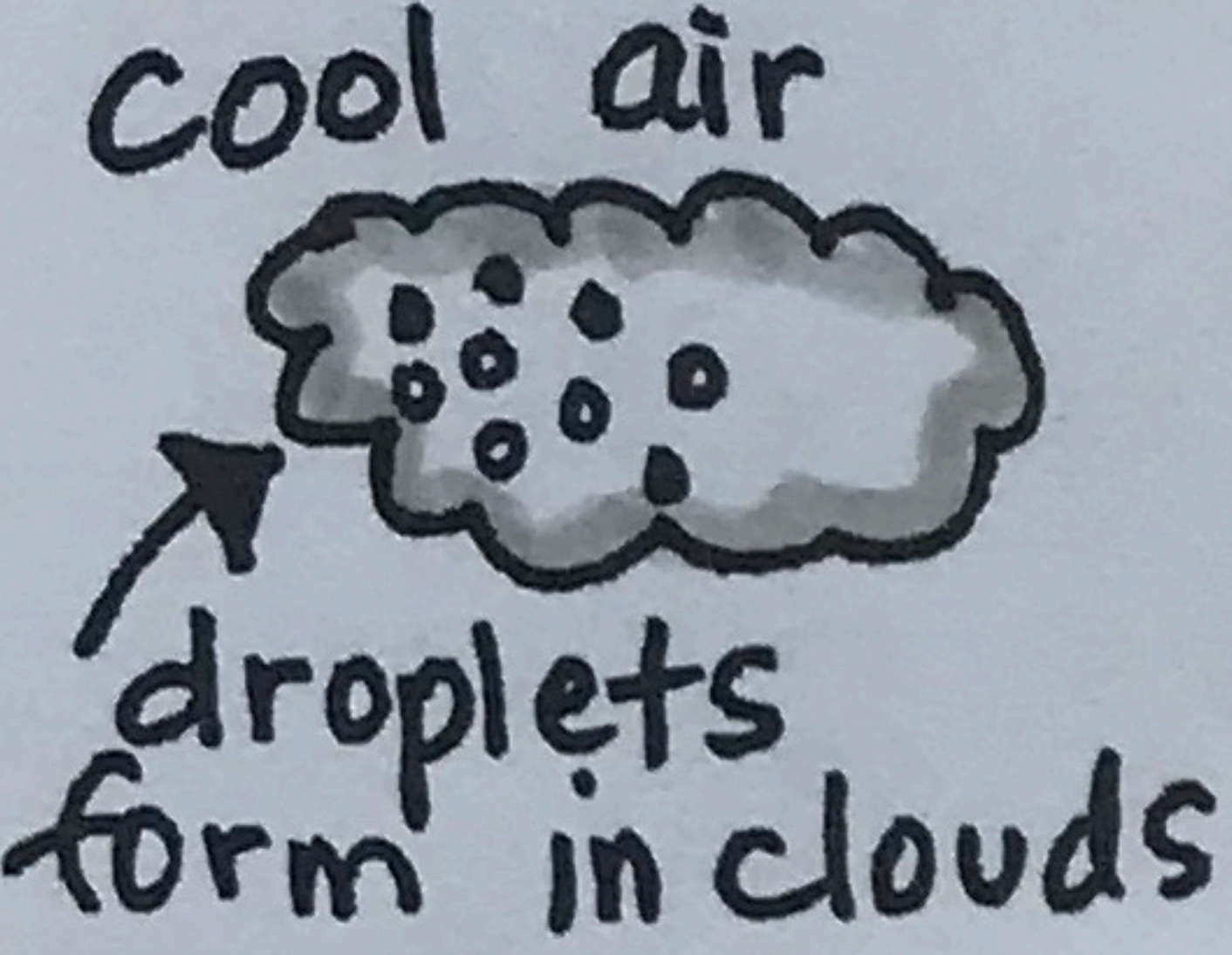
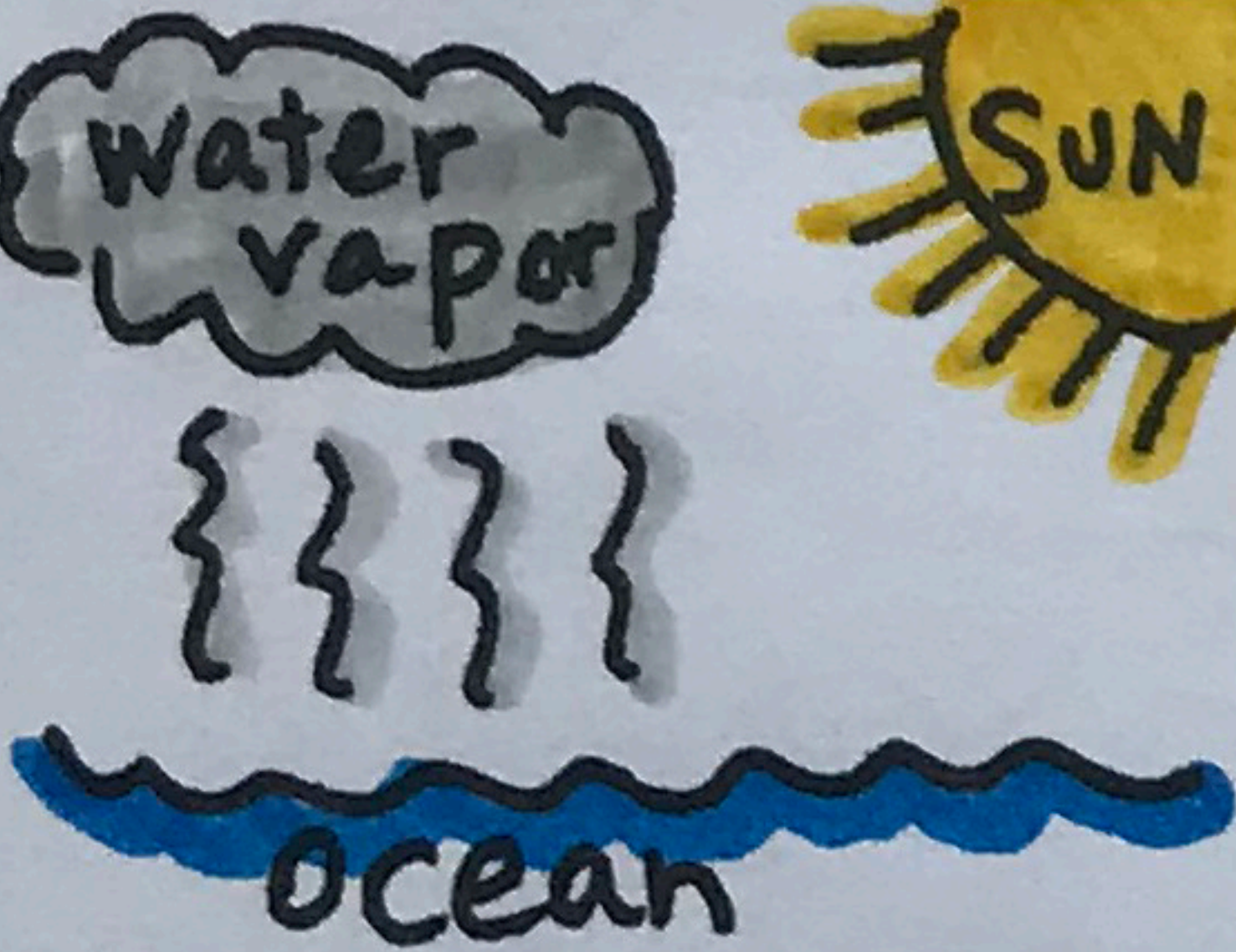
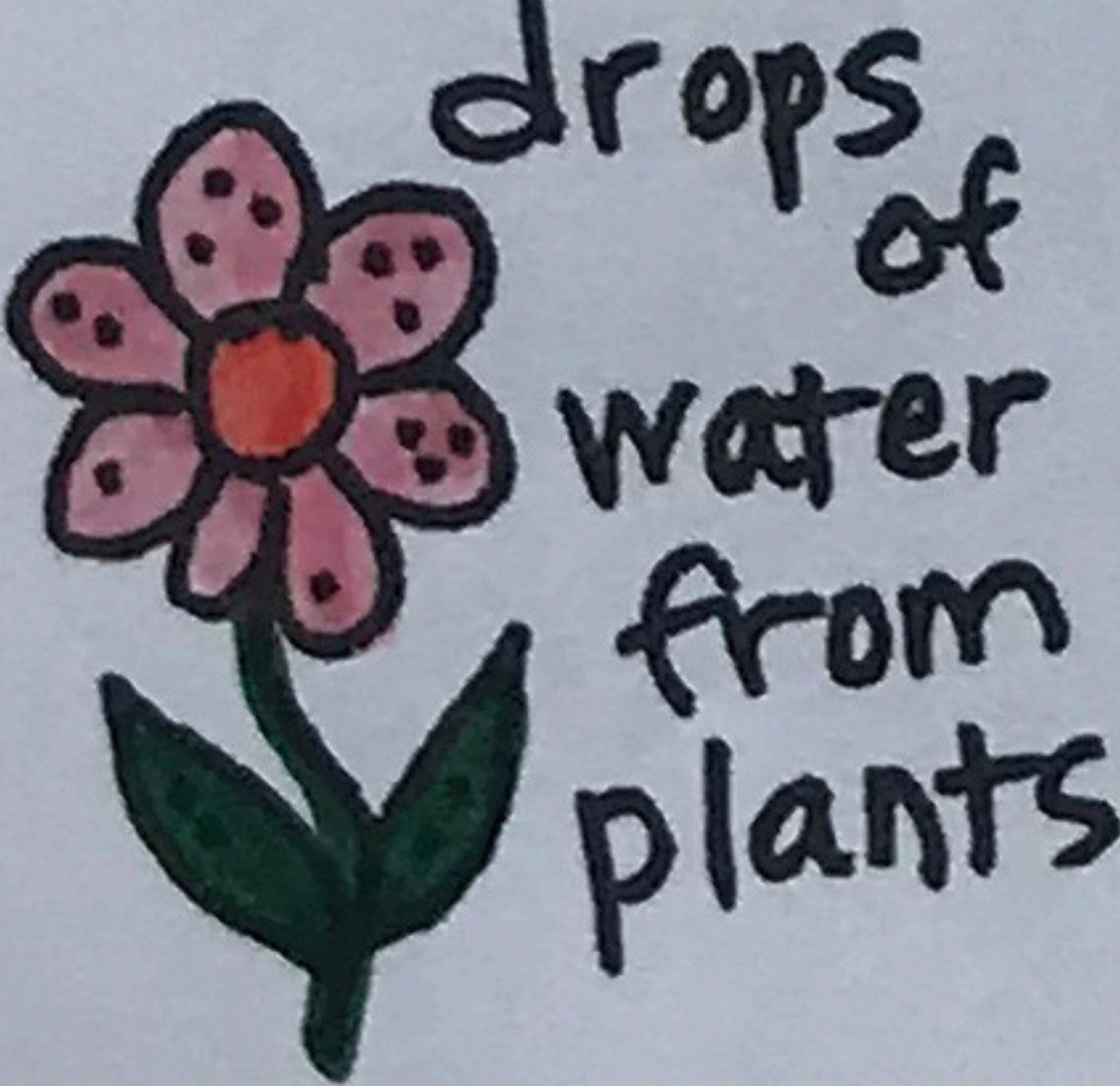
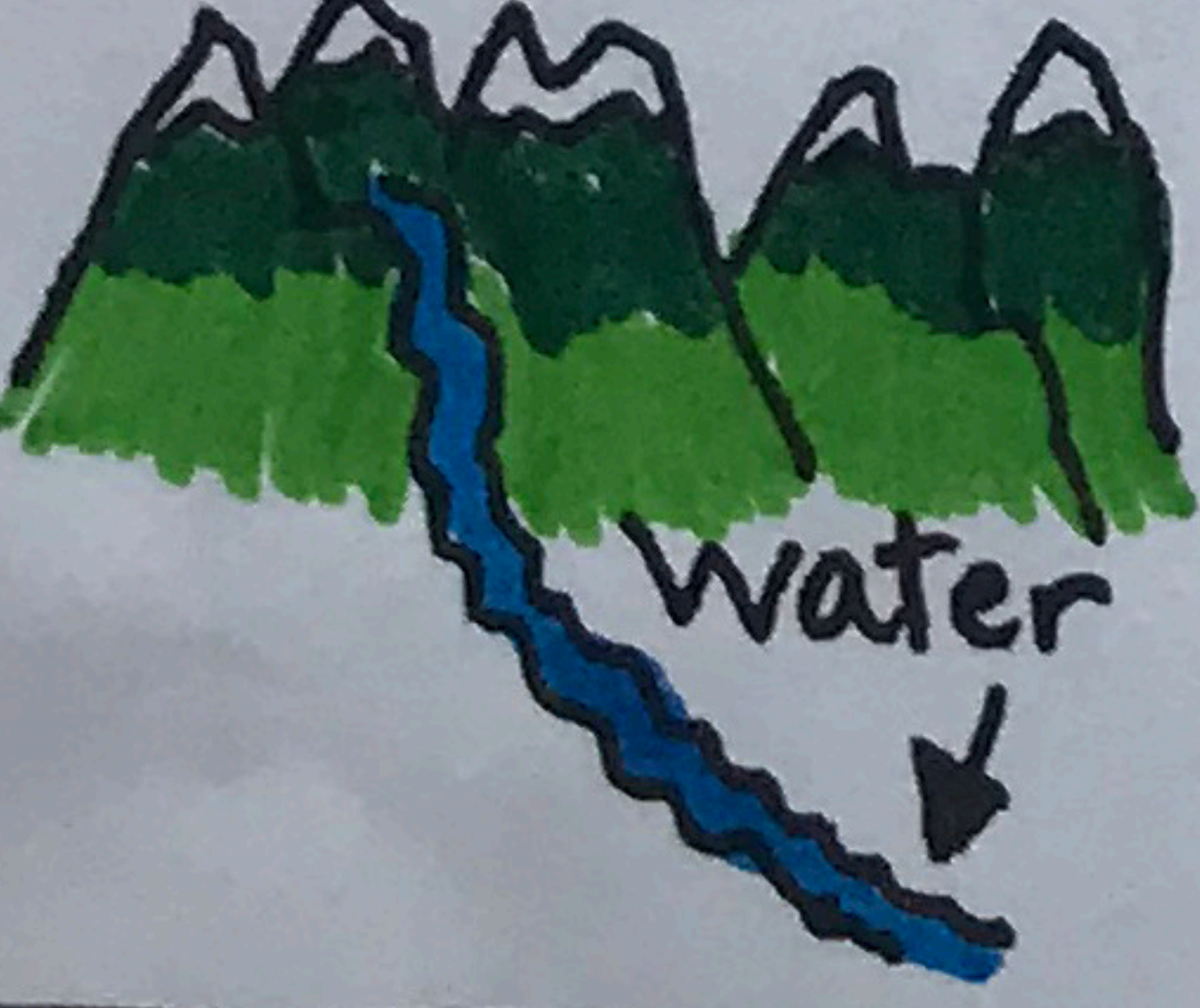
the WATER CYCLE

the process by which water moves through the earth and atmosphere.

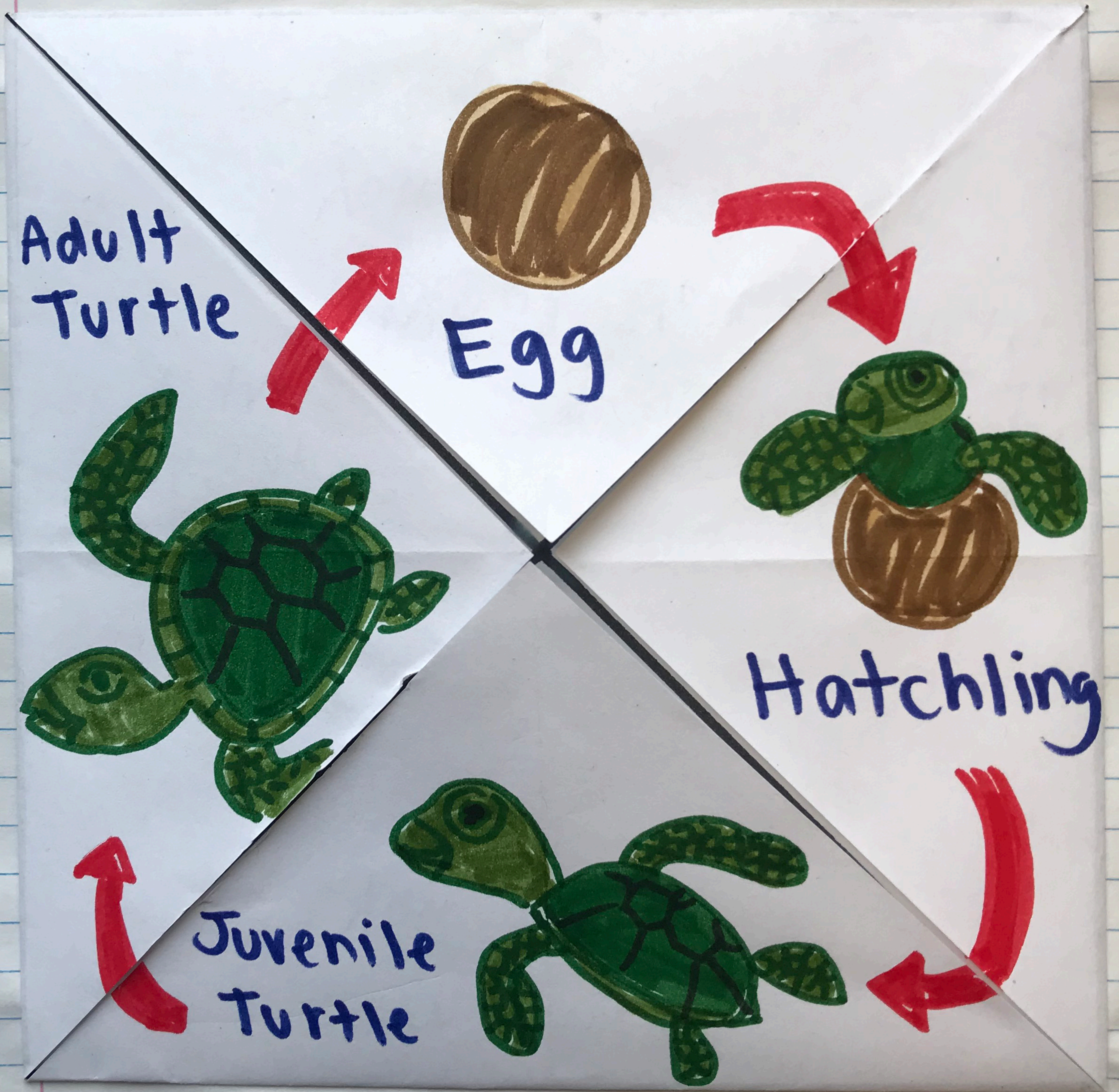
OCEAN: the largest body of water on the Earth
 75% of the Earth's surface.
 www.mysciencedoodles.com

I used to think...

Now I think...

Draw a Picture	Vocabulary Word	Definition
 <p>ocean</p>	water cycle	the changes to water when it evaporates into the air, condenses into clouds and then precipitates down to Earth
 <p>Rain</p>	precipitation	water droplets fall from the atmosphere in the form of rain, sleet, snow, or hail.
 <p>cool air droplets form in clouds</p>	Condensation	the cooling of water in the atmosphere changing gas to a liquid
 <p>Water vapor SUN ocean</p>	evaporation	the process that occurs when water changes from a liquid to a gas caused by heat
 <p>drops of water from plants</p>	transpiration	the passage of water vapour from a plant to the atmosphere
 <p>water</p>	run-off	rainfall that's not absorbed by soil and travels to the ocean.

Questions I have...



Today's Take-Away...

Hilroy

What do you know?

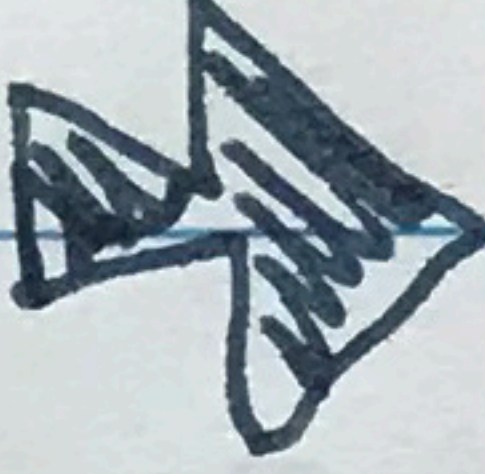
What do you wonder?

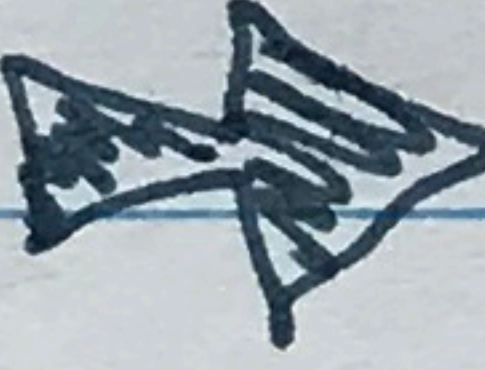
What do you wonder?

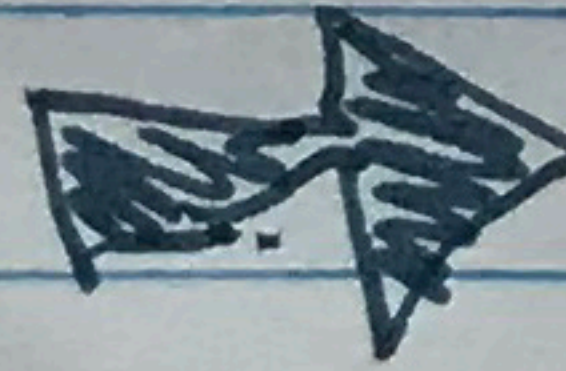
What do you wonder?

What do you wonder?

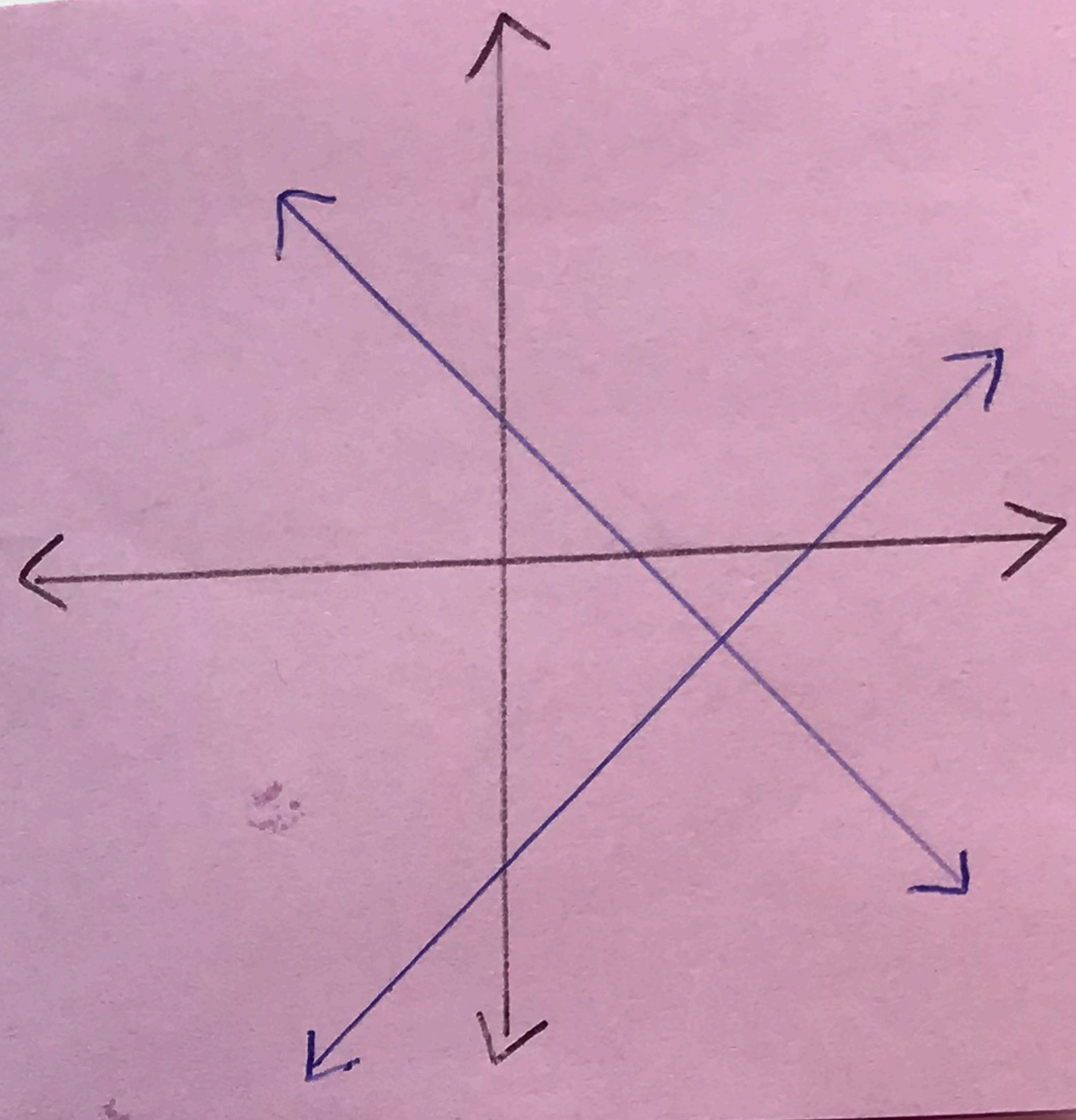
What do you know?

Sample 

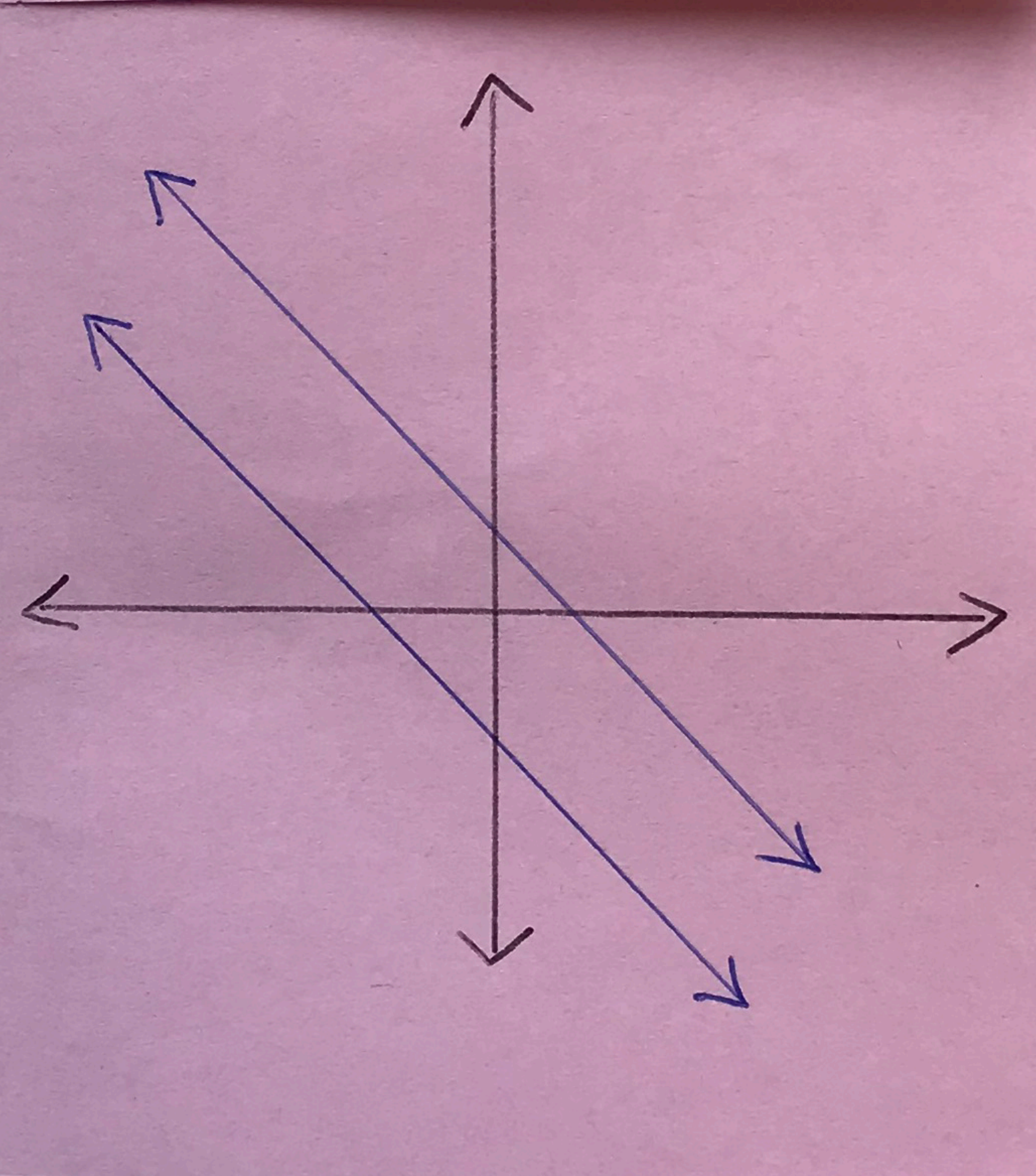
Sample 

Sample 

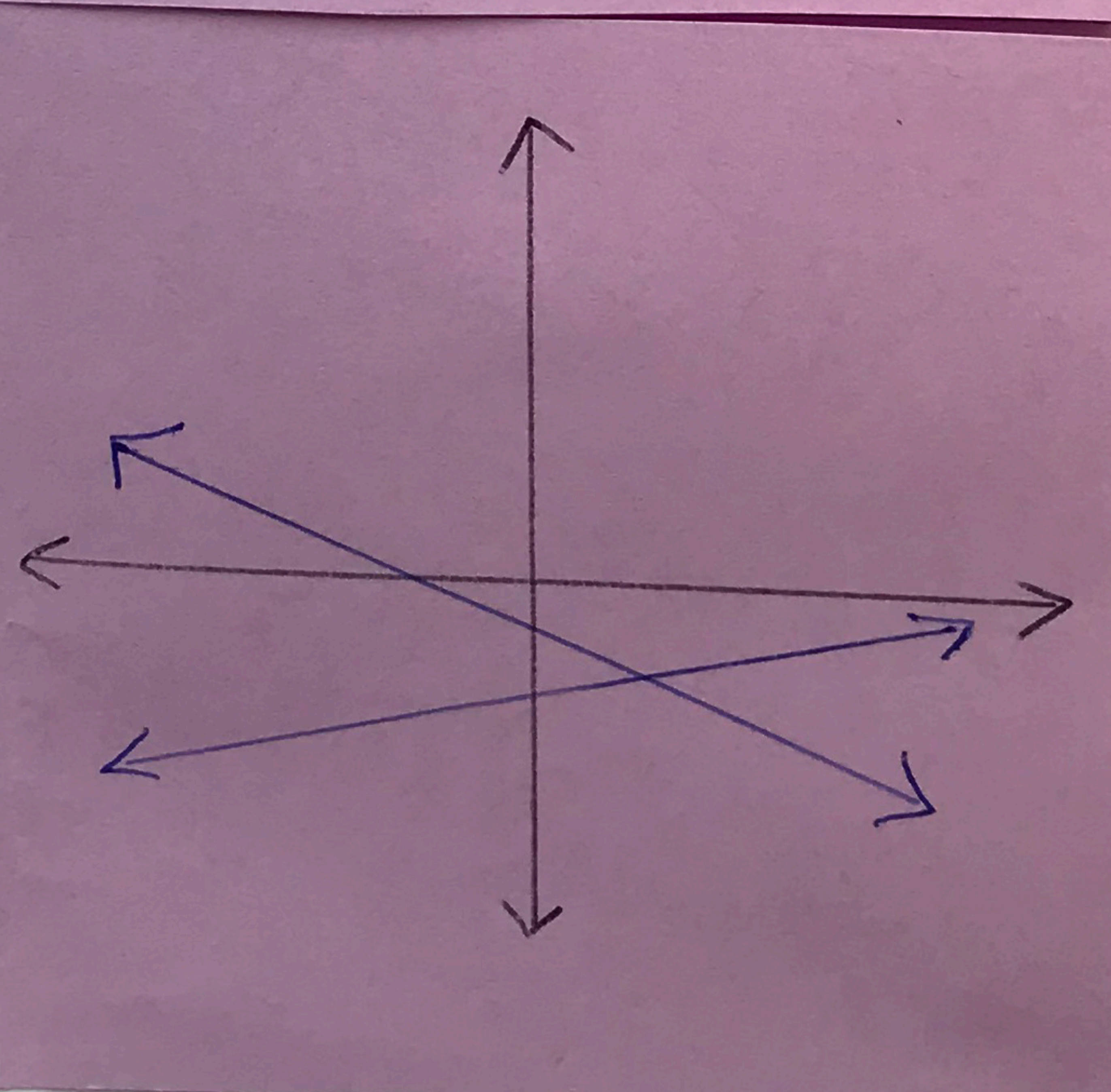
Perpendicular



Parallel



Intersecting



I'm still having trouble understanding...

(27)

Sample

$$y = m_1 x + b_1$$

$$y = m_2 x + b_2$$

where $m_1 \neq m_2$

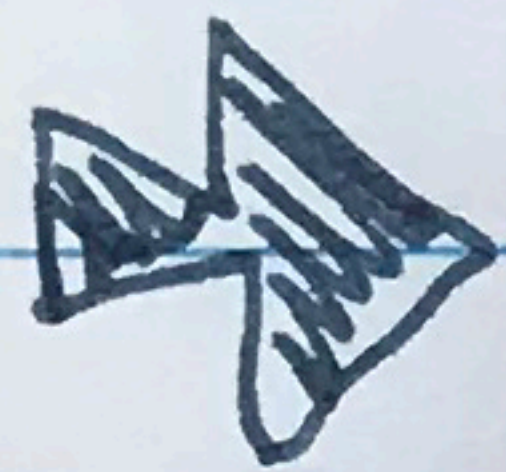
Sample

$$y = m_1 x + b_1$$

$$y = m_2 x + b_2$$

where $m_1 = m_2$

Sample



$$y = m_1 x + b_1$$

$$y = m_2 x + b_2$$

where $m_2 = \frac{1}{m_1}$

I'm still having trouble understanding...

Today we learned...

- All the ways to make 10

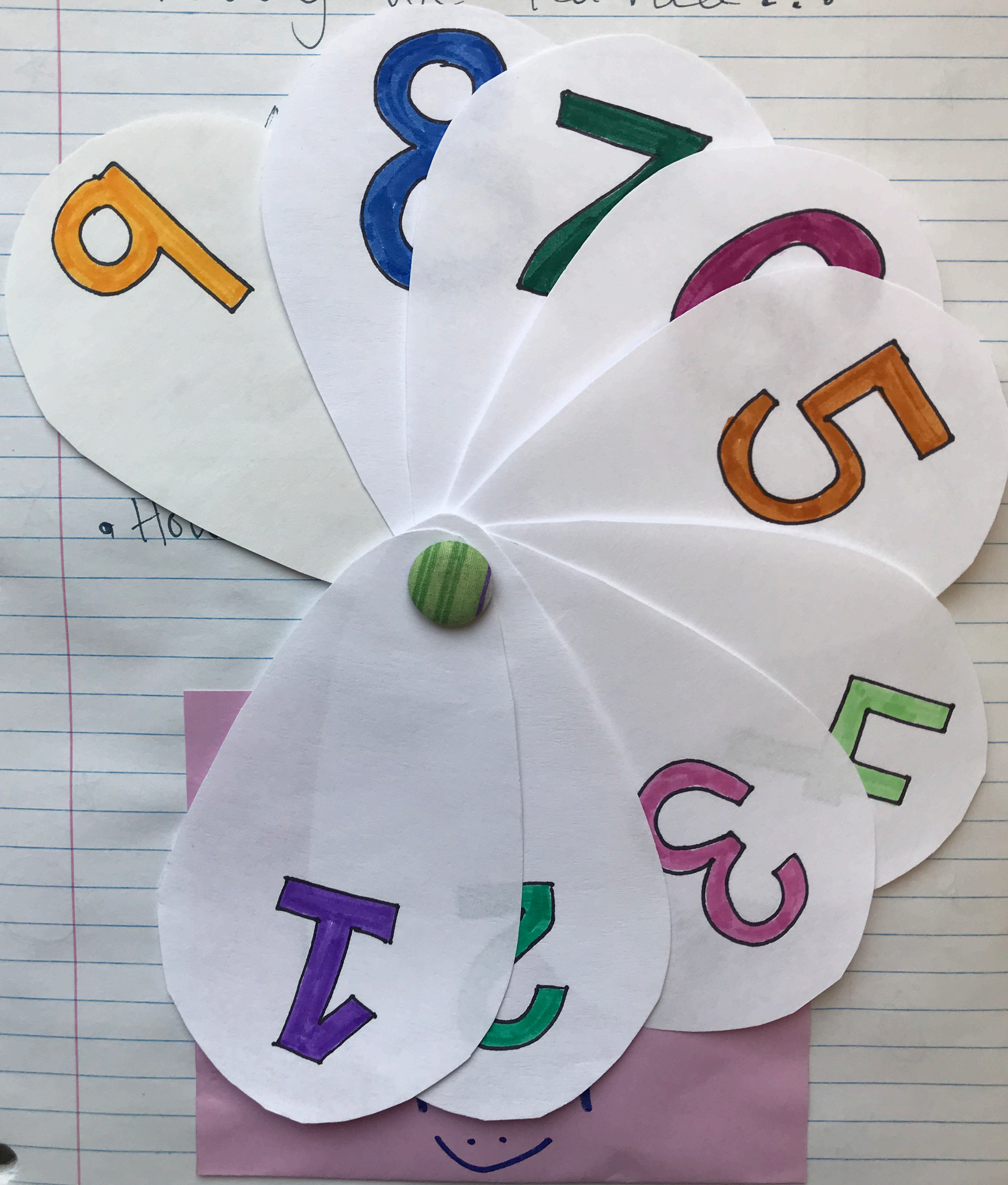
- Addition

- How to make numbers

I'm still wondering...

My Math
Fan
😊

Today we learned...



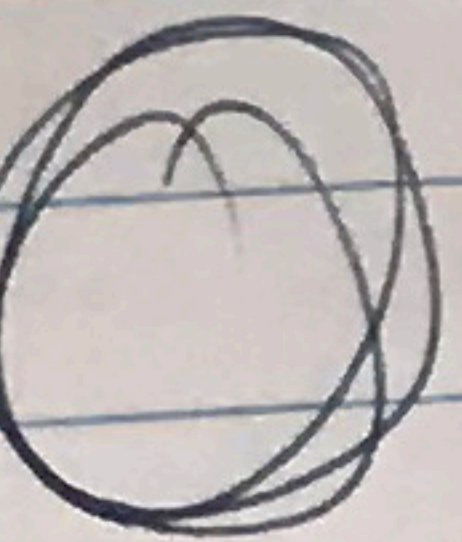
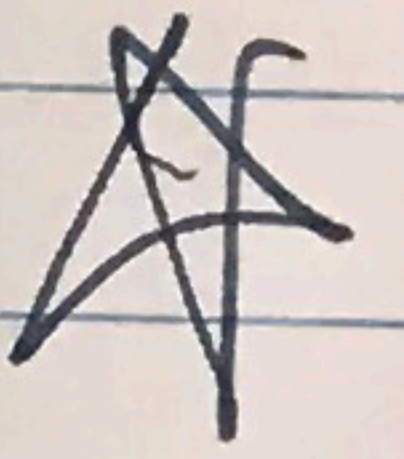
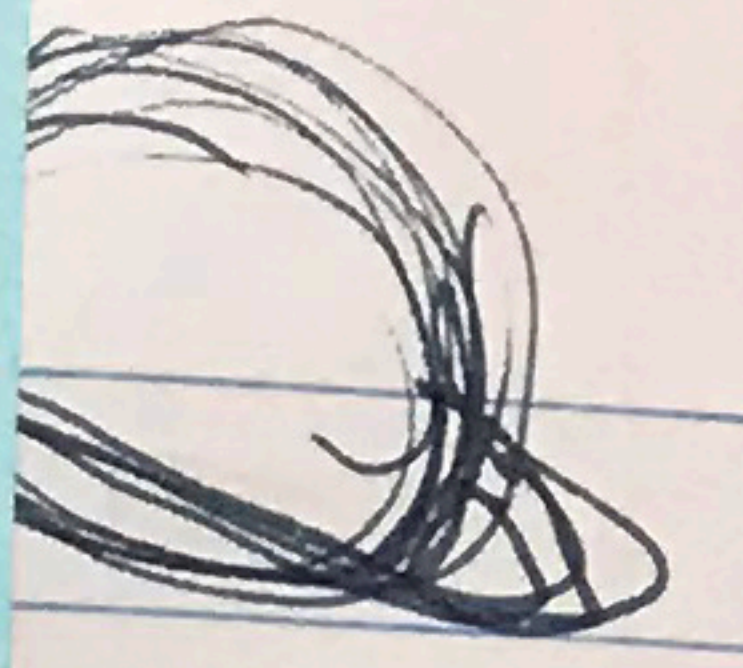
Hilroy

Where

am

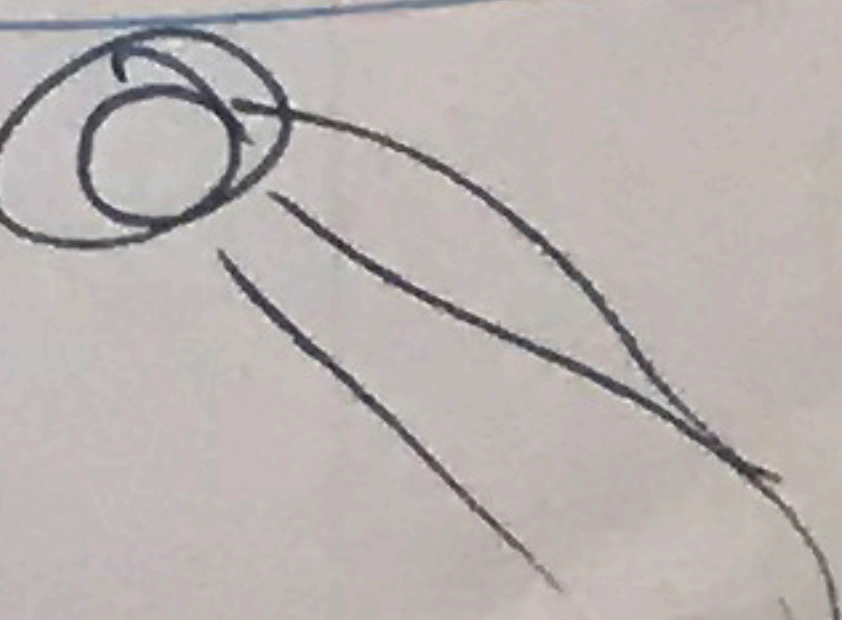
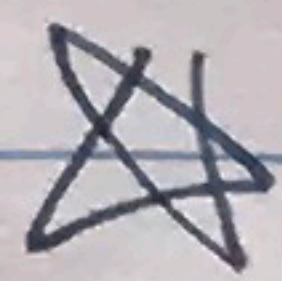
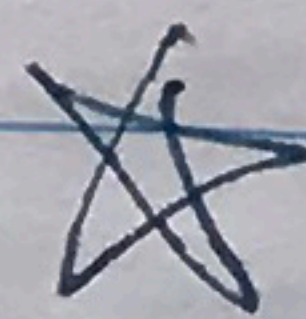
is?

UNIC



D283

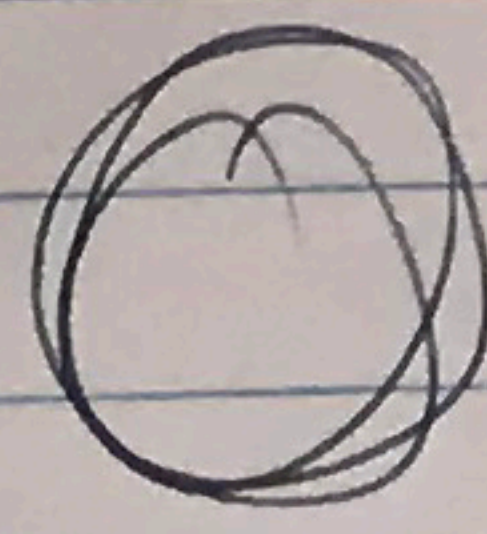
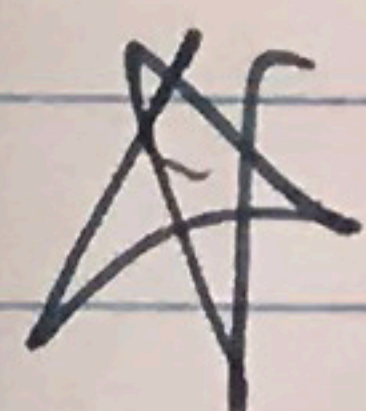
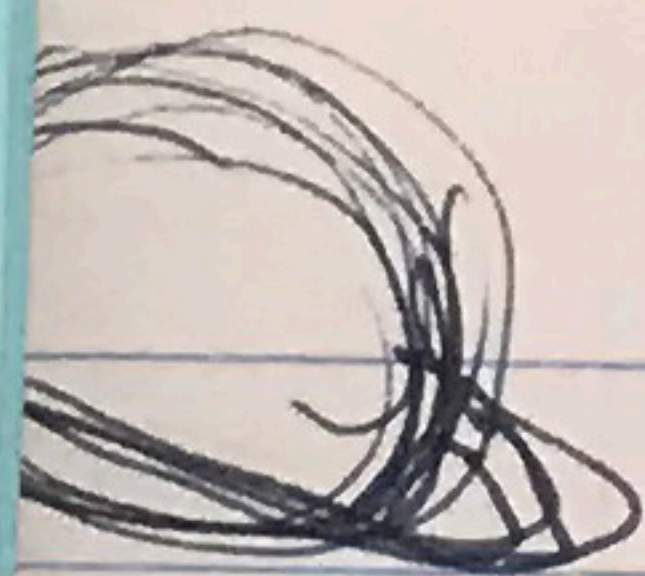
Maclaren



4.

Victoria

7.

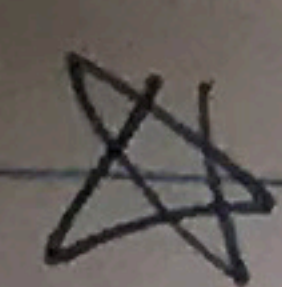


Vancouver
Island

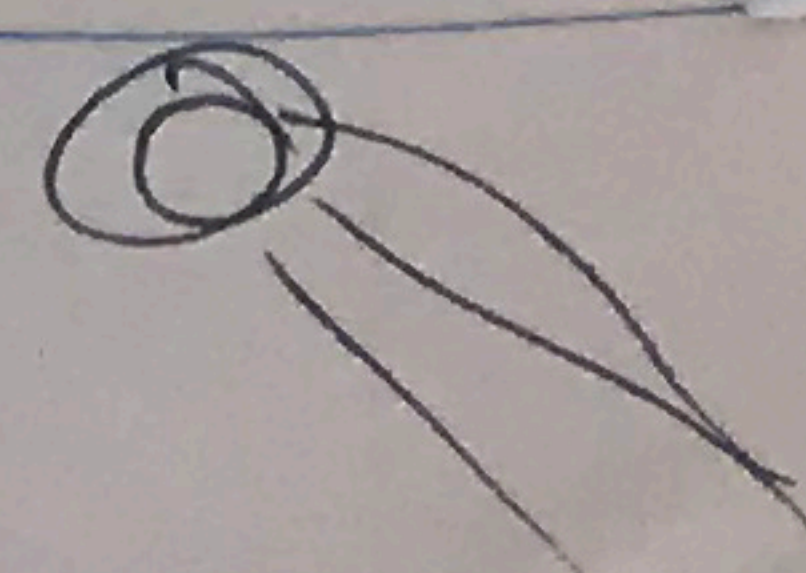
B.C.

5.

6.



(29)



8.

North
America

7.

Canada

Earth

9.

(29)

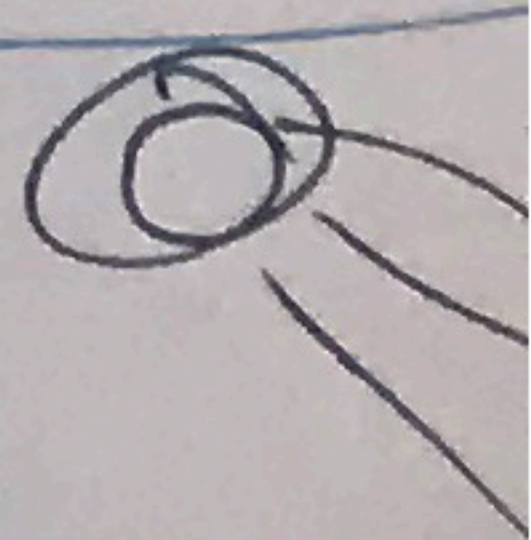
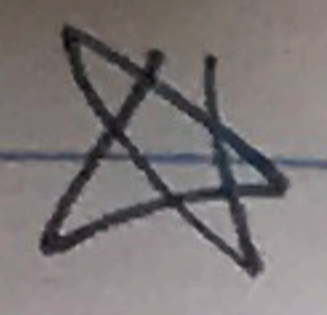
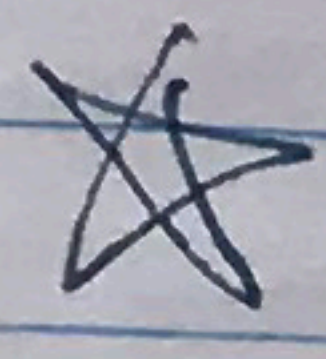
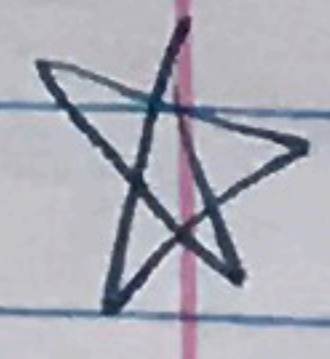
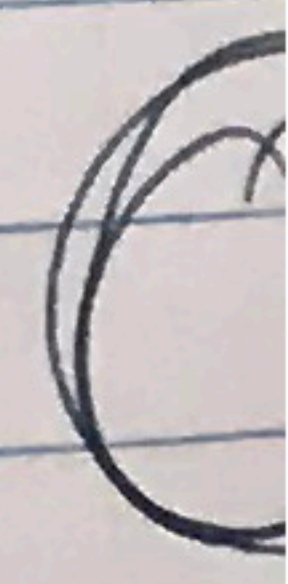
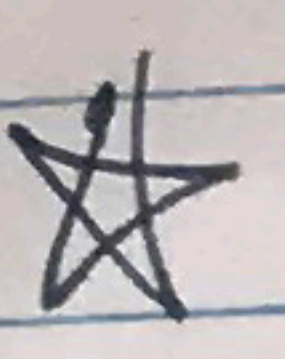
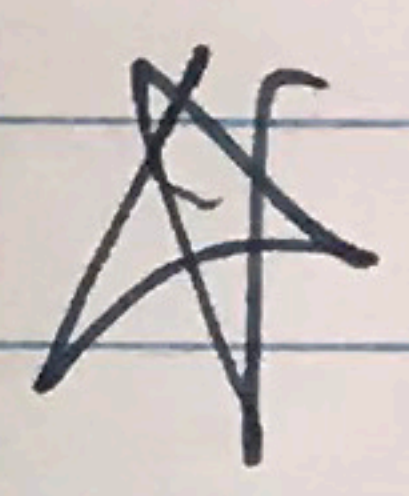
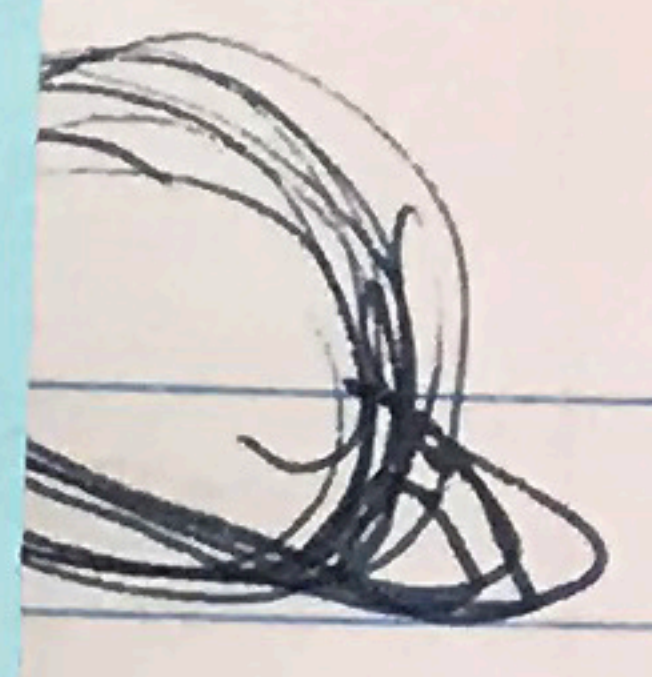
8.

Universe

Milky Way

Earth

Solar system



Where do
Beavers
live?

Isn't
that a
swear
word?!

Does
deforestation
have a negative
effect on
beaver habitats?

RESOURCES

(i.e. References)

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Soto, R. M. (2017, July). IMPLEMENTING INTERACTIVE SCIENCE NOTEBOOKS WITH ENGLISH LANGUAGE LEARNERS. Retrieved October 23, 2019, from <https://scholarworks.montana.edu/xmlui/bitstream/handle/1/13692/SotoR0817.pdf?sequence=3&isAllowed=y>.

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Jaladanki, V. S., & Bhattacharya, K. (2014). Exercising autonomous learning approaches through interactive notebooks: A qualitative case study. *The Qualitative Report*, 19(54), 1-25. Retrieved from <http://www.nova.edu/ssss/QR/QR19/jaladanki54.pdf>

Mason, K., & Bohl, H. (2017). More than data: Using interactive science notebooks to engage students in science and engineering. *Science and Children*, 55(3), 38-43

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Soto, R. M. (2017, July). IMPLEMENTING INTERACTIVE SCIENCE NOTEBOOKS WITH ENGLISH LANGUAGE LEARNERS. Retrieved October 23, 2019, from <https://scholarworks.montana.edu/xmlui/bitstream/handle/1/13692/SotoR0817.pdf?sequence=3&isAllowed=y>.

Waldman, C., & Crippen, K. J. (2009). Interactive notebooks: A daily learning cycle to empower students for science. *The Science Teacher*, 76(1), 51-55.