COOPERATIVE THINKING:

THE MISSING PILLAR IN GIFTED EDUCATION

LESLIE KERNER, SILVERQUICKEN EDUCATION

NJAGC CONFERENCE - APRIL 11, 2025

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,
W E O F T E N T H I N K W E M U S T, A L O N E,

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.
S O L V E A L L T H EP R O B L E M S O N O U R O W N.

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
B U T T O U G H E R C H A L L E N G E S D O S E E M

20 15 14 5 5 4 13 15 18 5 13 9 14 4 19, 6 15 18
T O N E E D M O R E M I N D S, F O R

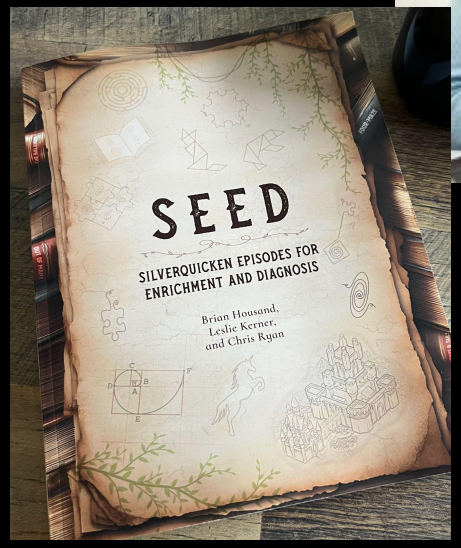
20 5 1 13 9 19 4 18 5 1 13!

T E A M I S D R E A M!

TEAM
IS
DREAM

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!**



MIND
MELD

THREE WIDELY ACCEPTED STRATEGIES

Talent development for *individual* gifted learners

Acceleration

Enrichment

Differentiation

BUT IN THE REAL WORLD...

"Great things in business are never done by one person. They're done by a team of people."

- Steve Jobs

"We should not underestimate ourselves, because if lots of individuals go together then we can accomplish almost anything."

- Greta Thunberg

"Talent wins games, but teamwork and intelligence win championships."

- Michael Jordan

"Be open to collaboration... Other people's ideas are often better than your own."

- Amy Poehler

COOPERATIVE LEARNING BENEFITS - RESEARCH

Improved higher-level reasoning skills

(Johnson & Johnson, 2009)

Enhanced self-esteem and communication

(Slavin, 2014; Johnson & Johnson, 1989)

Better information retention

(Slavin, 2014)

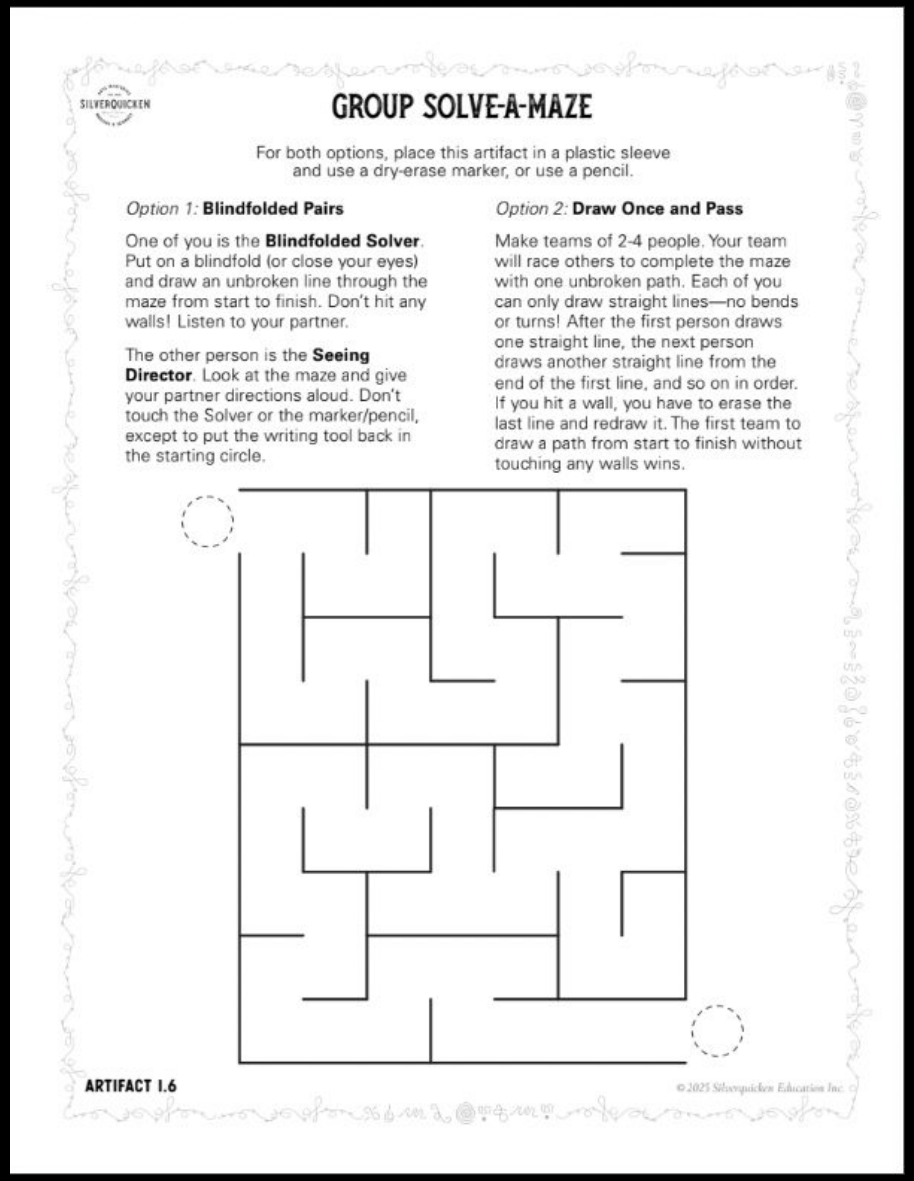
More frequent generation of new ideas and solutions

(Johnson & Johnson, 1989)

Increased engagement and intrinsic motivation

(Graziano & Navarrete, 2015)

LET'S TRY IT!



SILVERQUICKEN

GROUP SOLVE-A-MAZE

For both options, place this artifact in a plastic sleeve and use a dry-erase marker, or use a pencil.

Option 1: **Blindfolded Pairs**

One of you is the **Blindfolded Solver**. Put on a blindfold (or close your eyes) and draw an unbroken line through the maze from start to finish. Don't hit any walls! Listen to your partner.

The other person is the **Seeing Director**. Look at the maze and give your partner directions aloud. Don't touch the Solver or the marker/pencil, except to put the writing tool back in the starting circle.

Option 2: **Draw Once and Pass**

Make teams of 2-4 people. Your team will race others to complete the maze with one unbroken path. Each of you can only draw straight lines—no bends or turns! After the first person draws one straight line, the next person draws another straight line from the end of the first line, and so on in order. If you hit a wall, you have to erase the last line and redraw it. The first team to draw a path from start to finish without touching any walls wins.

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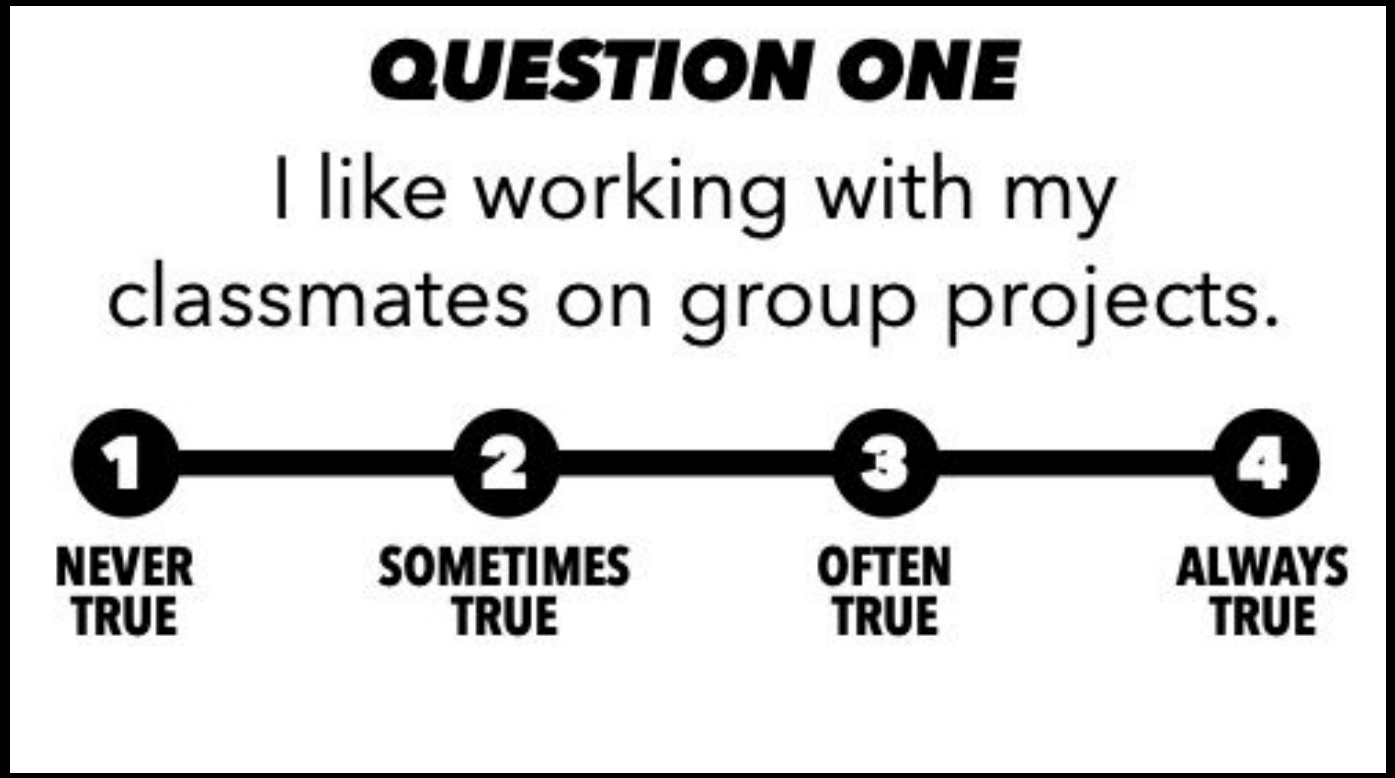
- Grab a partner
- One of you closes your eyes
- The other partner gives directions aloud using only words
- No touching or moving the Blindfolded Solver's pencil!

HOW WELL DO WE LIKE COOPERATIVE LEARNING?



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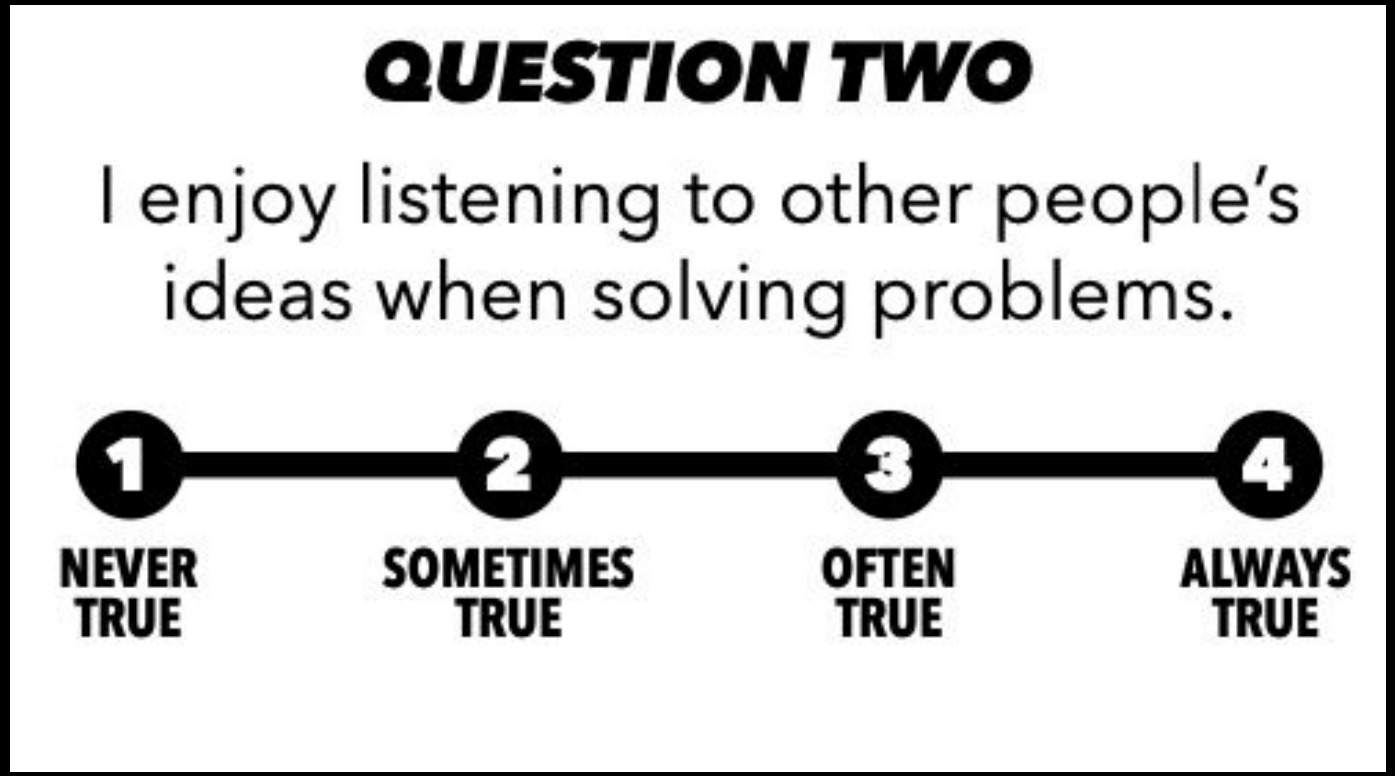

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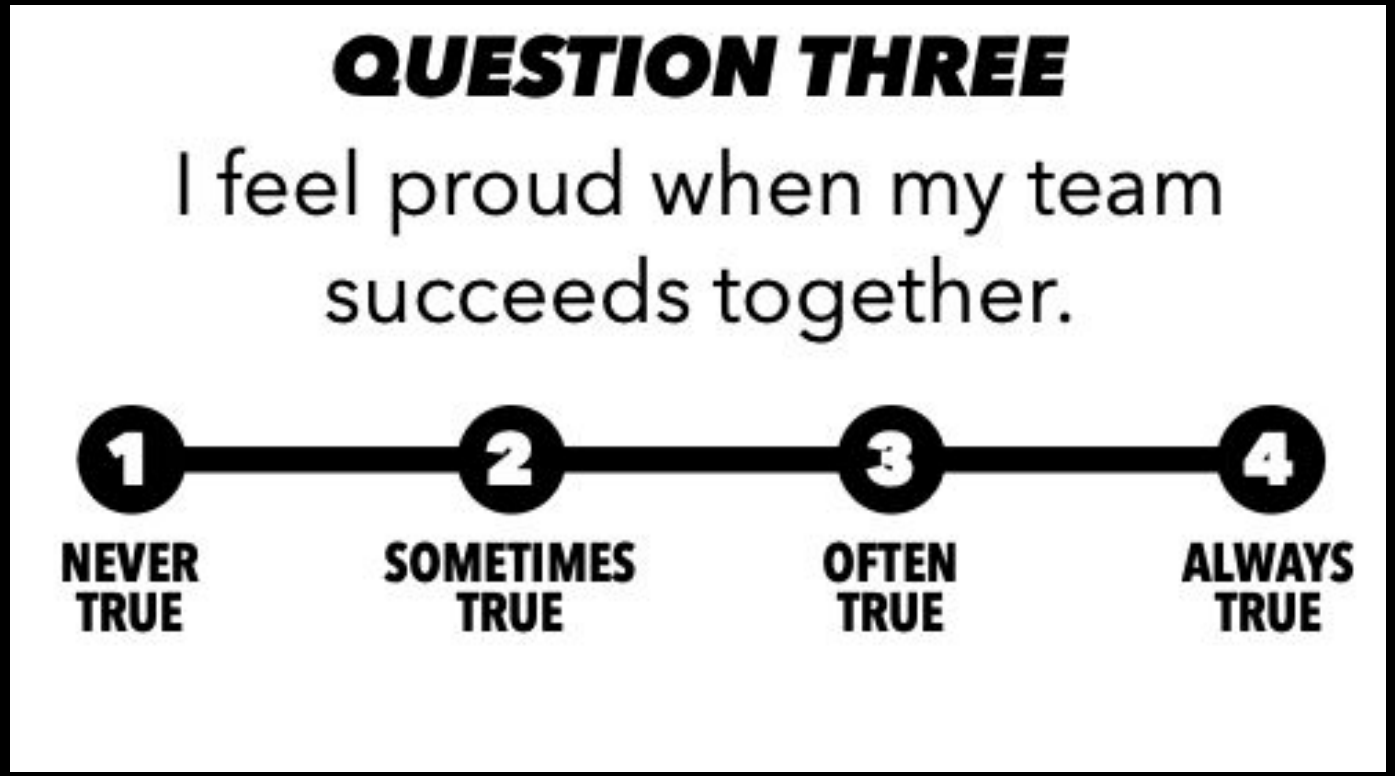

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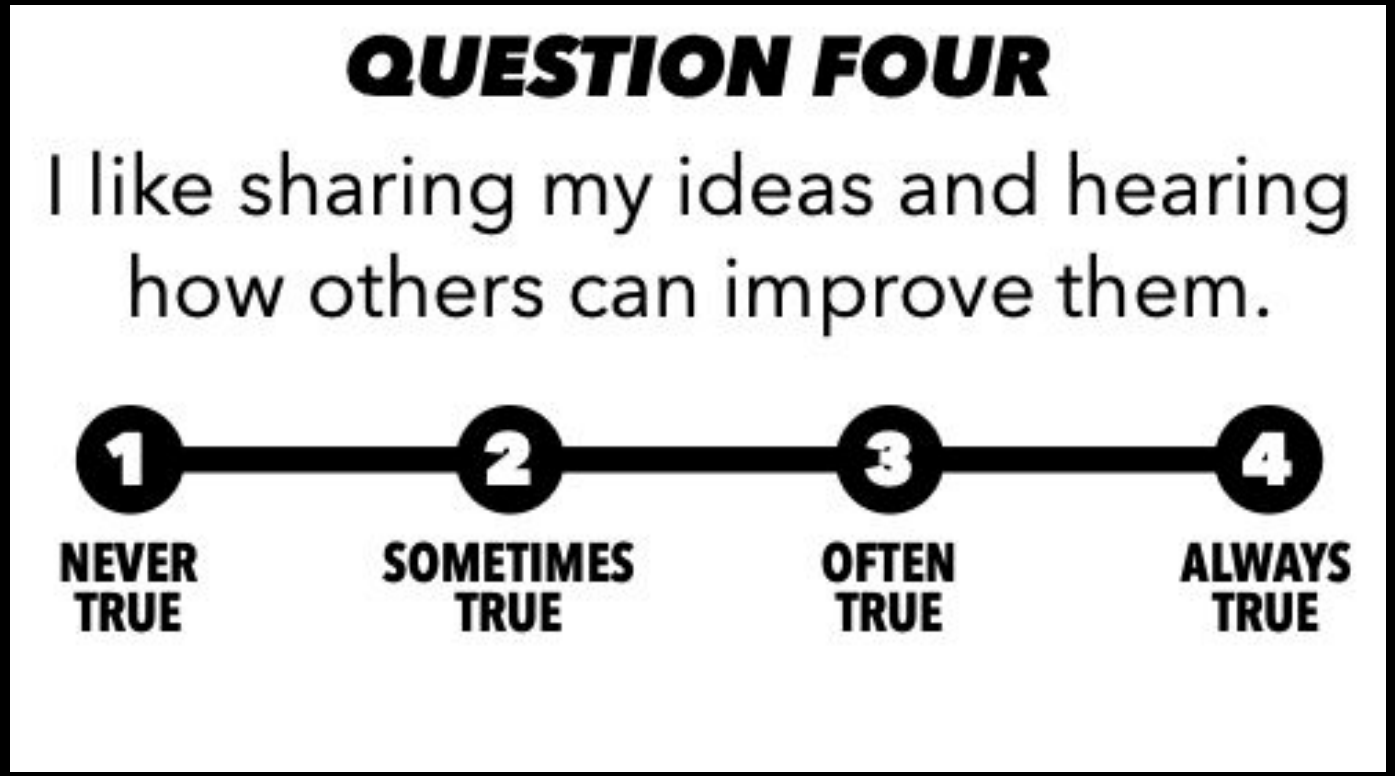

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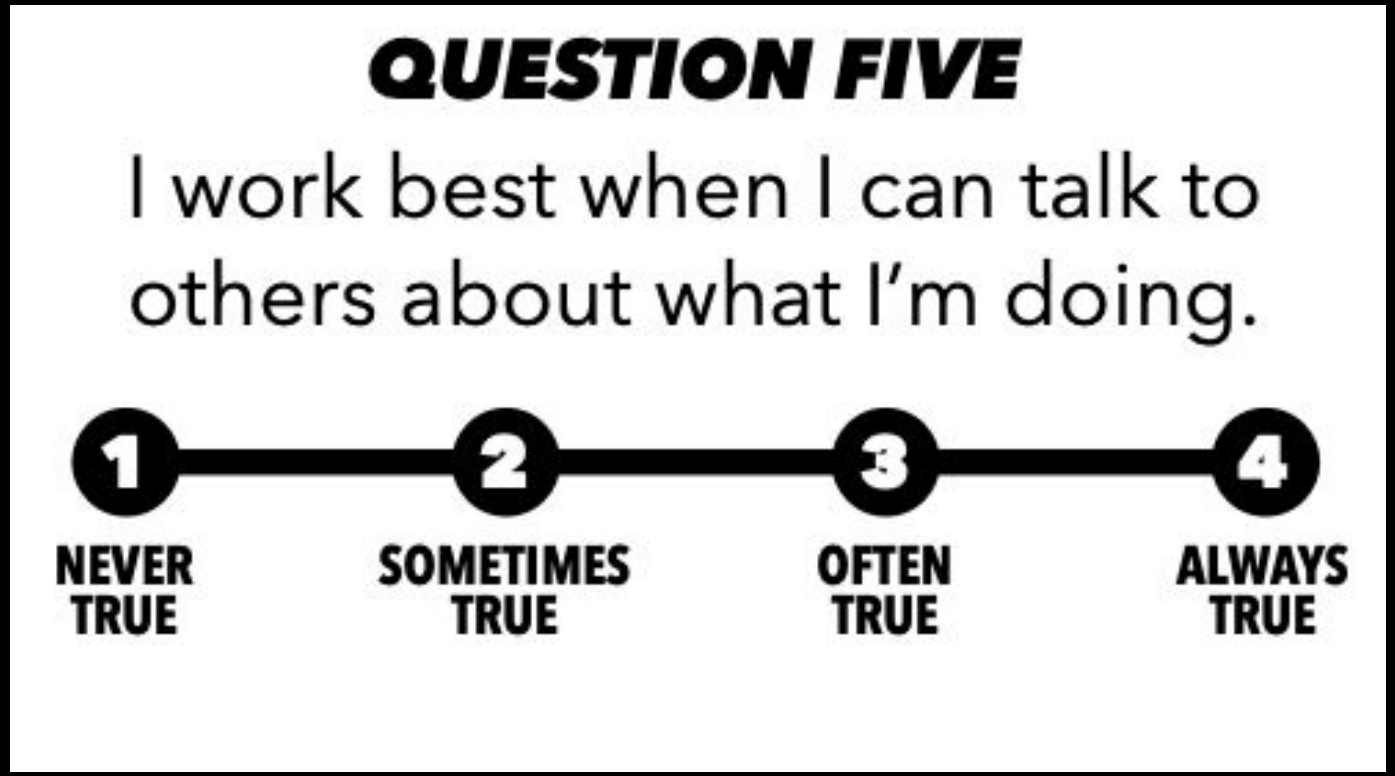


GIFTED STUDENTS DON'T LOVE IT EITHER!

- Research shows that gifted students don't enjoy cooperative learning ***as it's often implemented***:
  - **They work harder and do more work, but everyone gets the same credit/grade** (Neber, Finsterwald, & Urban, 2001)
  - **They resent being treated as "junior teachers"** (Coleman, Gallagher, & Nelson, 1993)
  - **They become frustrated when other students don't cooperate or seem to care about learning the material** (Matthews, 1992)
  - **They understand that their own learning is sacrificed because others are not ready for the same acceleration** (Matthews, 1992)

FIVE CORE ELEMENTS OF COOPERATIVE LEARNING

D.W. Johnson & R.T. Johnson (1999, 2009, 2021), among other researchers, have identified five essential elements that set the stage for productive cooperative learning.

Positive Interdependence	**Face-to-Face Interaction**	**Individual + Group Accountability**	**Interpersonal Skills**	**Group Processing**
The gains of individuals and the group are positively correlated; perception that one cannot succeed unless everyone succeeds.	Students must be required to rely on input from others in order to complete tasks; teams need to explicitly learn how to meet, share ideas, resolve conflicts, and come to consensus.	Assessment of group interactions and final work products must take into account both individual and group contributions. Students must understand each person's vital role.	Students learn, often through assigned roles, the social skills required to lead, keep a group on task, encourage others, make decisions, and resolve conflicts.	Individuals and groups must be self-reflective and open to thinking of ways to improve. Skills for reflection must be taught, practiced, and assessed.

SO HOW CAN WE DO IT BETTER???

Challenges around Content Level:

- Bored/frustrated with already-mastered material
- Simple tasks that could be done alone

Give Them Hard Stuff to Do:

- Assign novel and complex tasks that do not rely on prior knowledge
- Require interdependence
- Increase rigor and challenge

Challenges around Roles:

- "Free-riding" or "Social loafing"
- Dominant team members
- Mini-teacher expectations

Make Sure Everyone Can Participate:

- Give team members roles to increase engagement (e.g. Monitors, "Strands")
- Construct individual/group accountability
- Build appreciation for different ways of thinking

Challenges around Communication:

- Friction between group members
- Expectations not set for communication
- Negative feedback can fester

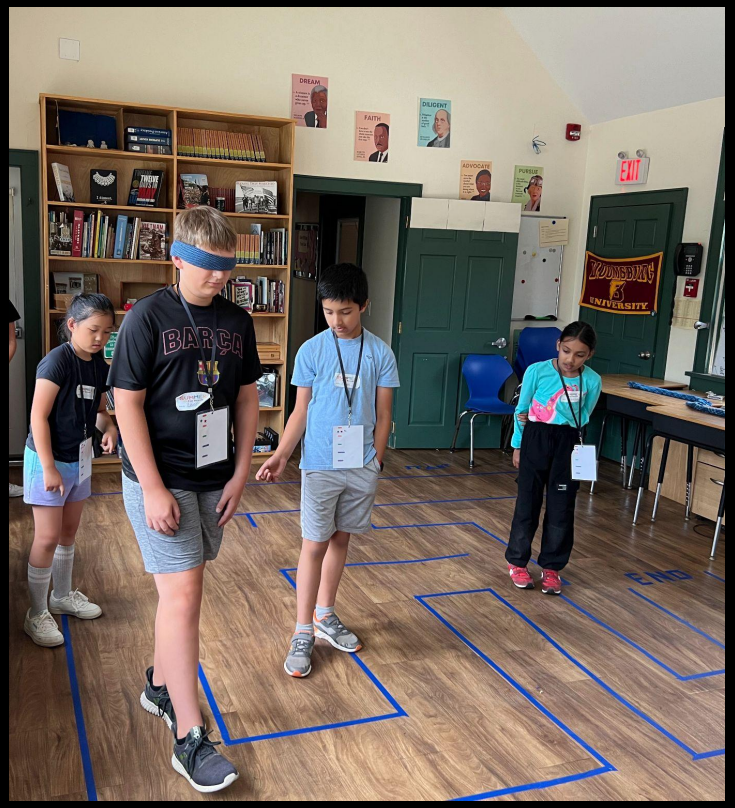
Give Them Tools to Discuss, Process, Reflect:

- Explicitly teach effective group work techniques (e.g., decision making, active listening)
- Assess group dynamics and make teams accountable for both product *and* process

GIVE THEM HARD STUFF TO DO - EXAMPLES

Force constraints - Require specific constraints that require gifted students to work together and/or think "outside of the box."

Blindfold Maze / Laser Maze

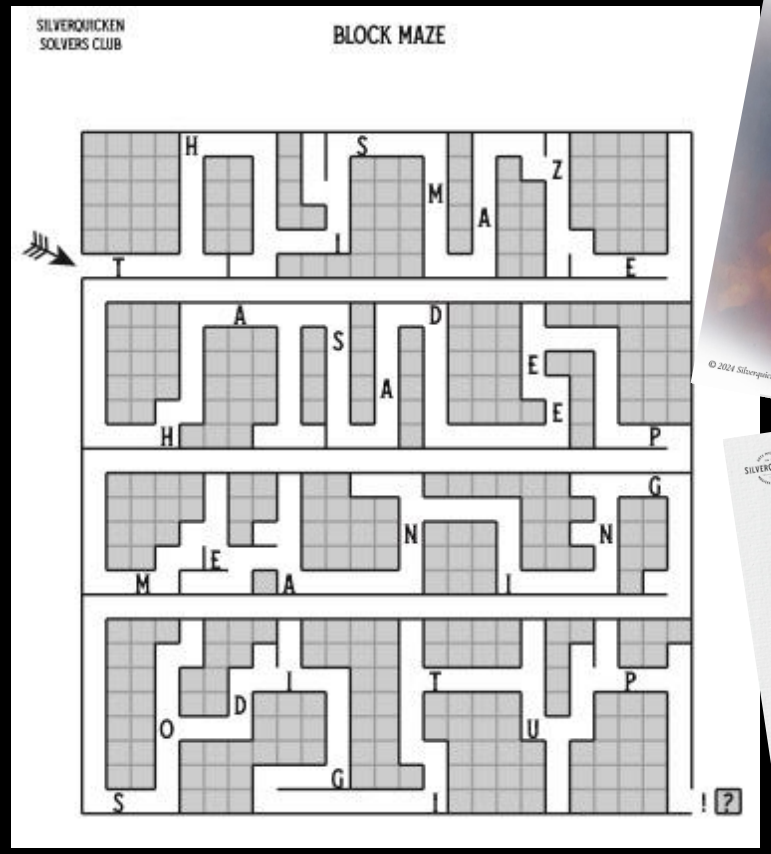


Engineering Challenges

GIVE THEM HARD STUFF TO DO - EXAMPLES

Minimize/eliminate instructions - Remove, reduce, or obscure directions, so students need to work together to figure out what the task and/or goal is.

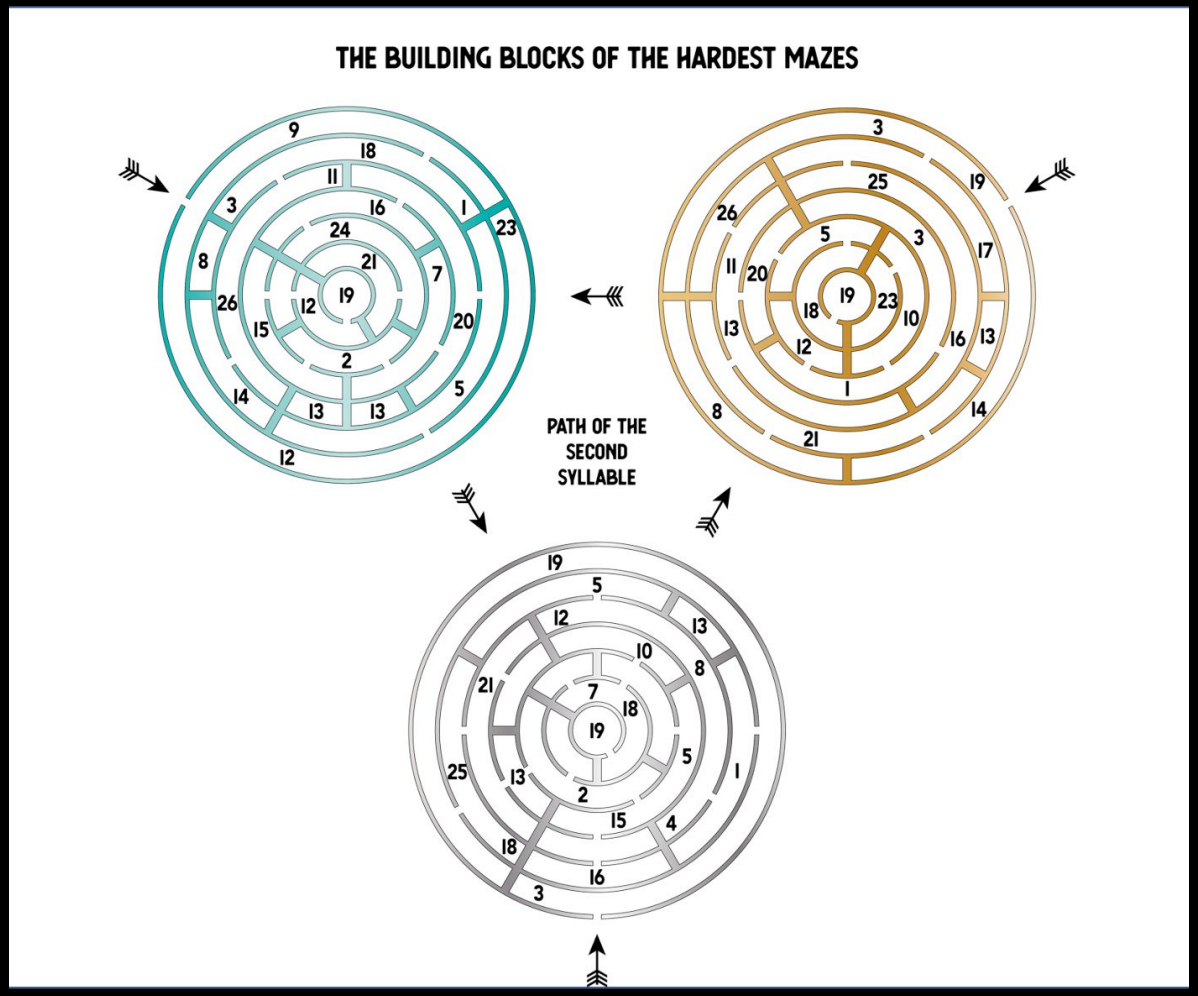
Puzzles

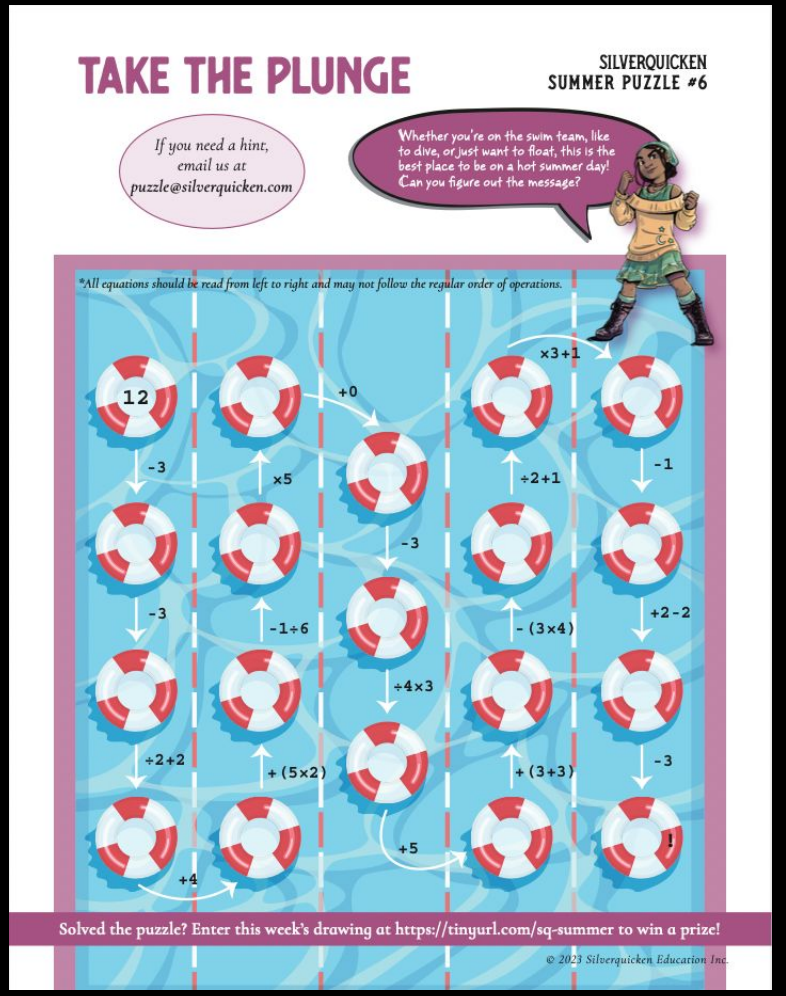


Escape Rooms

GIVE THEM HARD STUFF TO DO - EXAMPLES

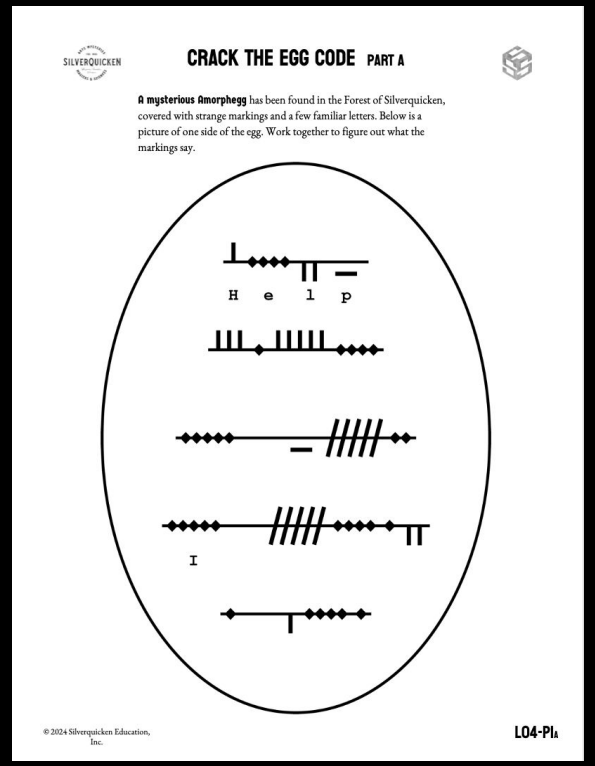
Add layers to simple puzzles - Start with something they recognize, but add hidden codes or messages inside!

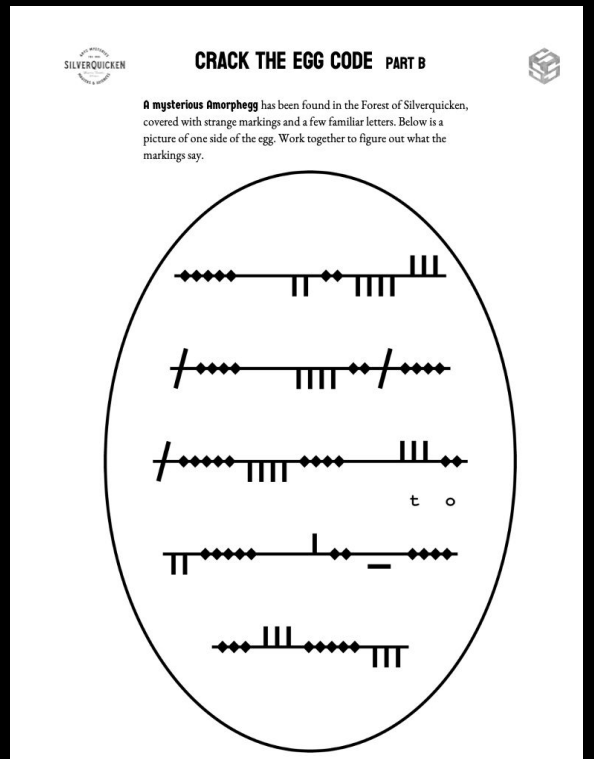


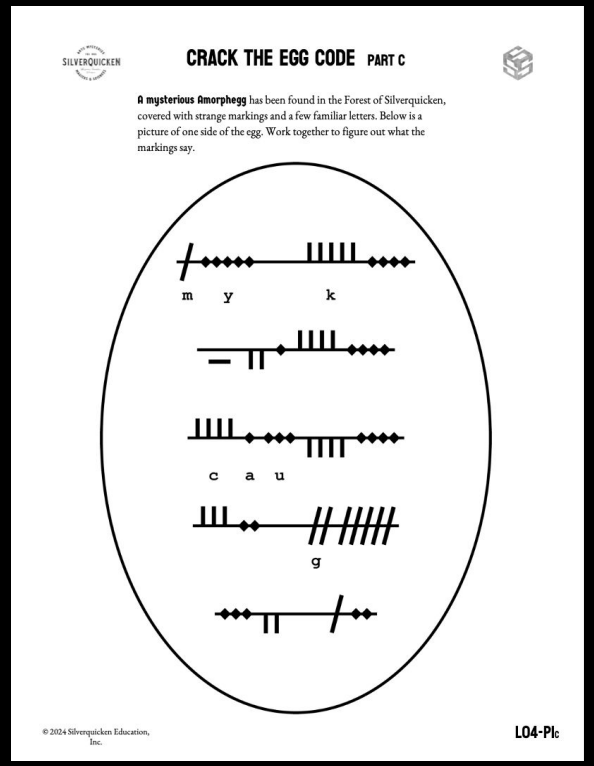


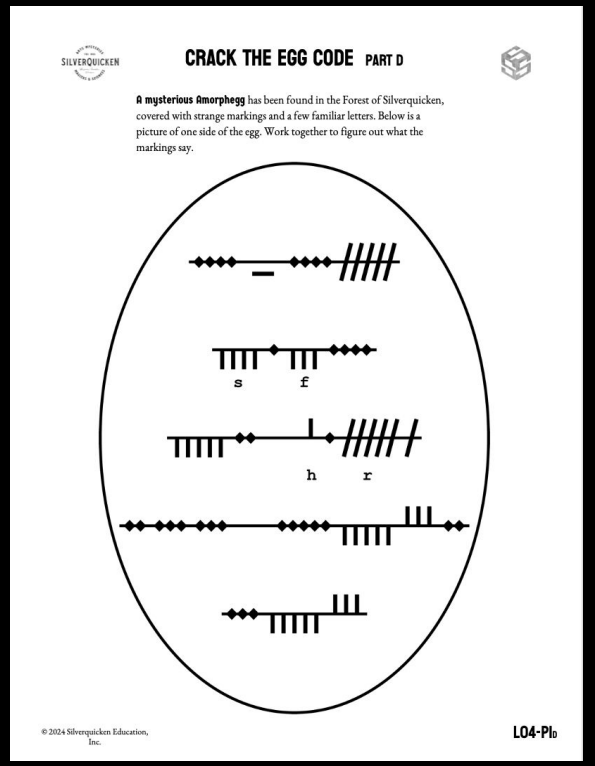
GIVE THEM HARD STUFF TO DO - EXAMPLES

Require interdependence - Split up required materials or give information to only certain team members.









MAKE SURE EVERYONE CAN PARTICIPATE - EXAMPLES

Assign Team Roles - Could be process-oriented, task-based, skills-based, or a hybrid. Help students process their findings/feelings after serving in their roles.

TASK-BASED

- **Person A = Describer**
- **Person B = Messenger**
- **Person C = Builder**

INTERESTS/SKILLS-BASED

- **Person A = Contributor**
- **Person B = Collaborator**
- **Person C = Communicator**
- **Person D = Challenger**

POGIL's 4 roles		
Process Oriented Guided Inquiry Learning	Manager / Facilitator	Reflector / Strategy Analyst
	Recorder	Spokesperson / Presenter

Belbin's 9 roles	*Social*	*Thinking*	*Action / Task*
	Resource Investigator	Plant (idea generator)	Shaper
	Teamworker	Monitor Evaluator	Implementer
	Co-ordinator	Specialist	Completer Finisher

MAKE SURE EVERYONE CAN PARTICIPATE - EXAMPLES

Metacognition - Provide ways for students to identify their own strengths and the strengths of others; ascribe value to *all* and *different* ways of thinking.

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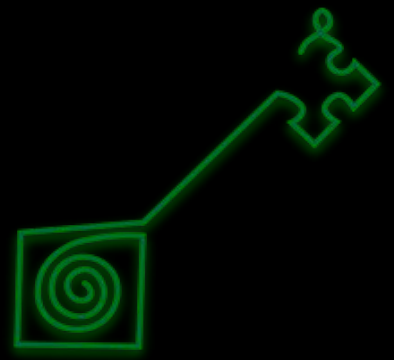
MAKE SURE EVERYONE CAN PARTICIPATE - EXAMPLES

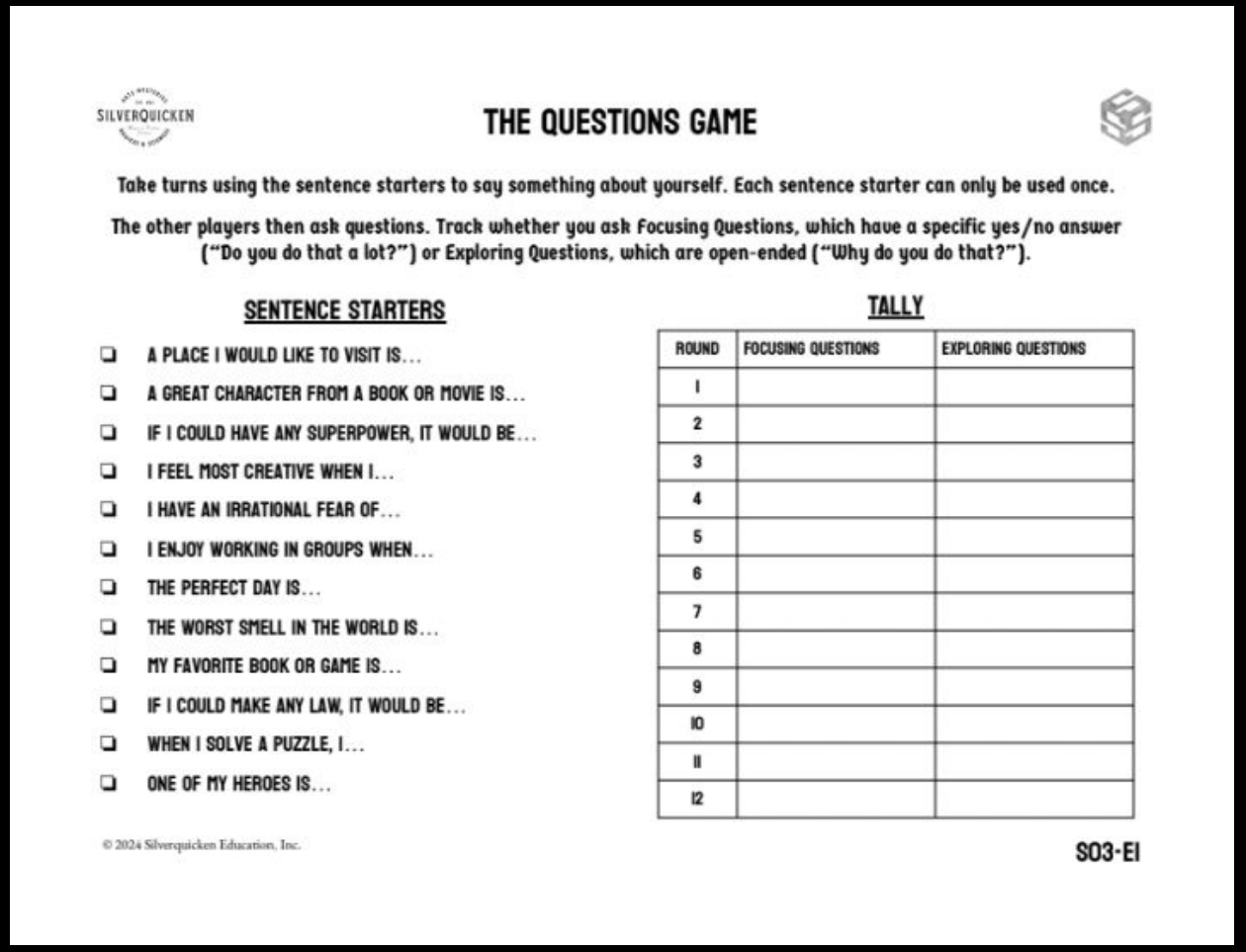
Metacognition - Provide ways for students to identify their own strengths and the strengths of others; ascribe value to *all* and *different* ways of thinking.



FINDPATH	WEAVERCHANTER	COMMONSKEEPER
Solve	Create	Lead
Drive	Wonder	Gather
Answer	Dream	Team-Build

GIVE THEM TOOLS TO DISCUSS, PROCESS, REFLECT - EXAMPLES

Clarifying Questions - Provide direct instruction / experience with asking clarifying questions of others.



SILVERQUICKEN

THE QUESTIONS GAME

Take turns using the sentence starters to say something about yourself. Each sentence starter can only be used once.

The other players then ask questions. Track whether you ask Focusing Questions, which have a specific yes/no answer ("Do you do that a lot?") or Exploring Questions, which are open-ended ("Why do you do that?").

SENTENCE STARTERS

- ❑ A PLACE I WOULD LIKE TO VISIT IS...
- ❑ A GREAT CHARACTER FROM A BOOK OR MOVIE IS...
- ❑ IF I COULD HAVE ANY SUPERPOWER, IT WOULD BE...
- ❑ I FEEL MOST CREATIVE WHEN I...
- ❑ I HAVE AN IRRATIONAL FEAR OF...
- ❑ I ENJOY WORKING IN GROUPS WHEN...
- ❑ THE PERFECT DAY IS...
- ❑ THE WORST SMELL IN THE WORLD IS...
- ❑ MY FAVORITE BOOK OR GAME IS...
- ❑ IF I COULD MAKE ANY LAW, IT WOULD BE...
- ❑ WHEN I SOLVE A PUZZLE, I...
- ❑ ONE OF MY HEROES IS...

TALLY

ROUND	FOCUSING QUESTIONS	EXPLORING QUESTIONS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

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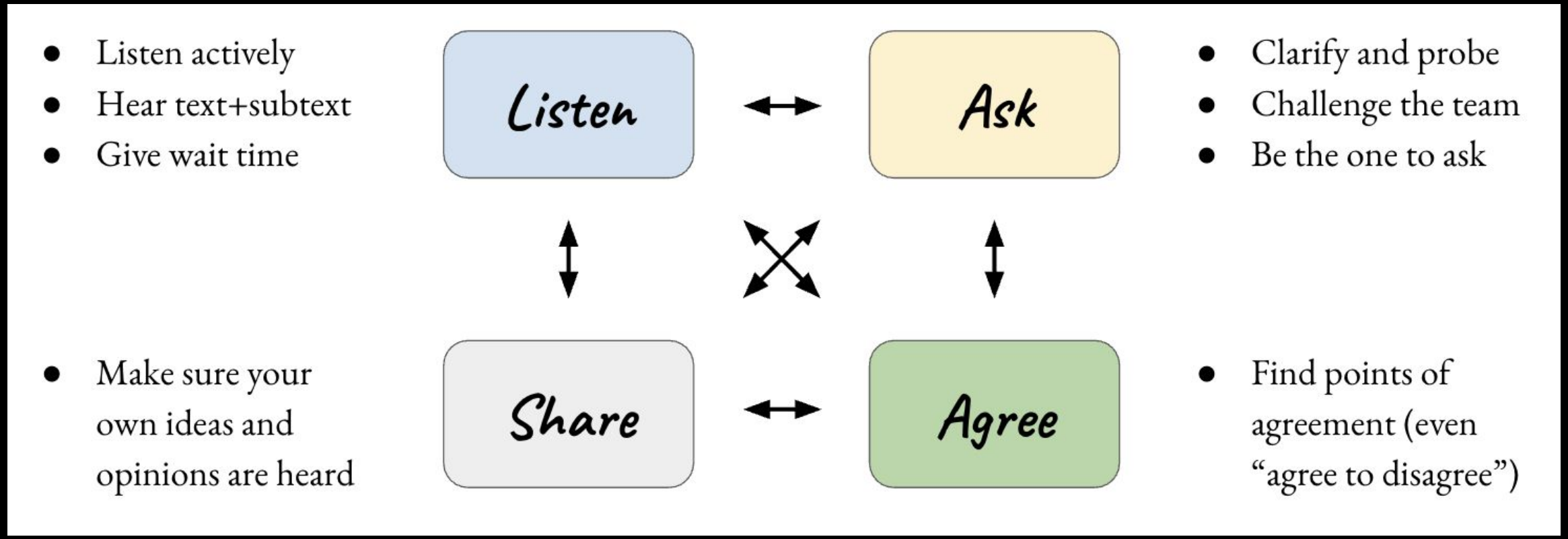
SO3-EI

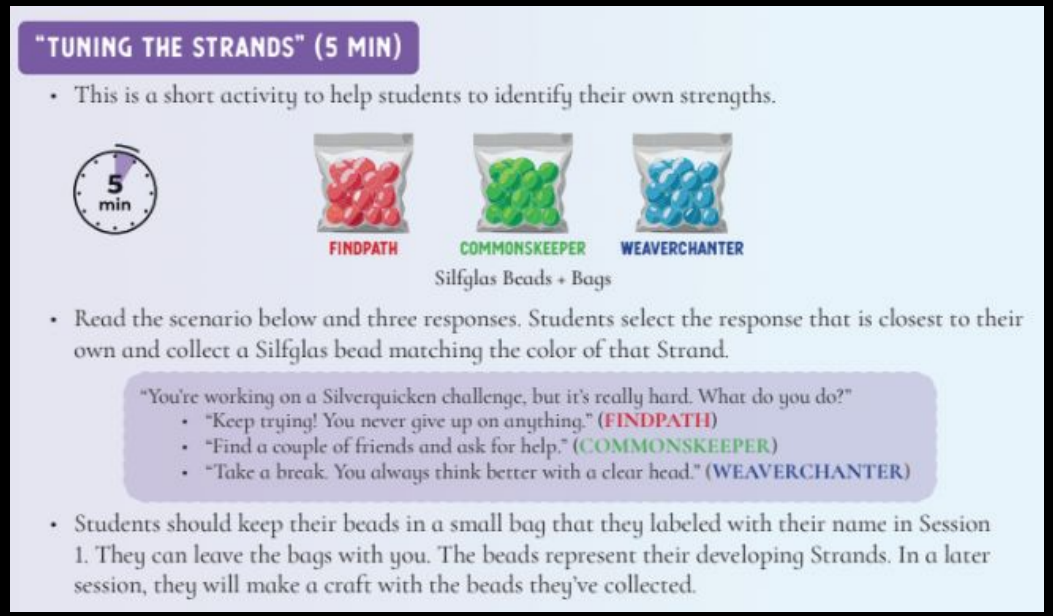
GIVE THEM TOOLS TO DISCUSS, PROCESS, REFLECT - EXAMPLES

Explicitly Teach Teamwork - Help students learn that good teamwork involves both asking and listening, that everyone should share, and that there are ways to get to agreement (even "yes, and..." and "agree to disagree").



GIVE THEM TOOLS TO DISCUSS, PROCESS, REFLECT - EXAMPLES

Time and Structure for Reflection - Give students time to reflect on the work product AND their cooperation / collaboration processes. Guide reflection with questions and/or graphic organizers.



"TUNING THE STRANDS" (5 MIN)

- This is a short activity to help students to identify their own strengths.

5 min

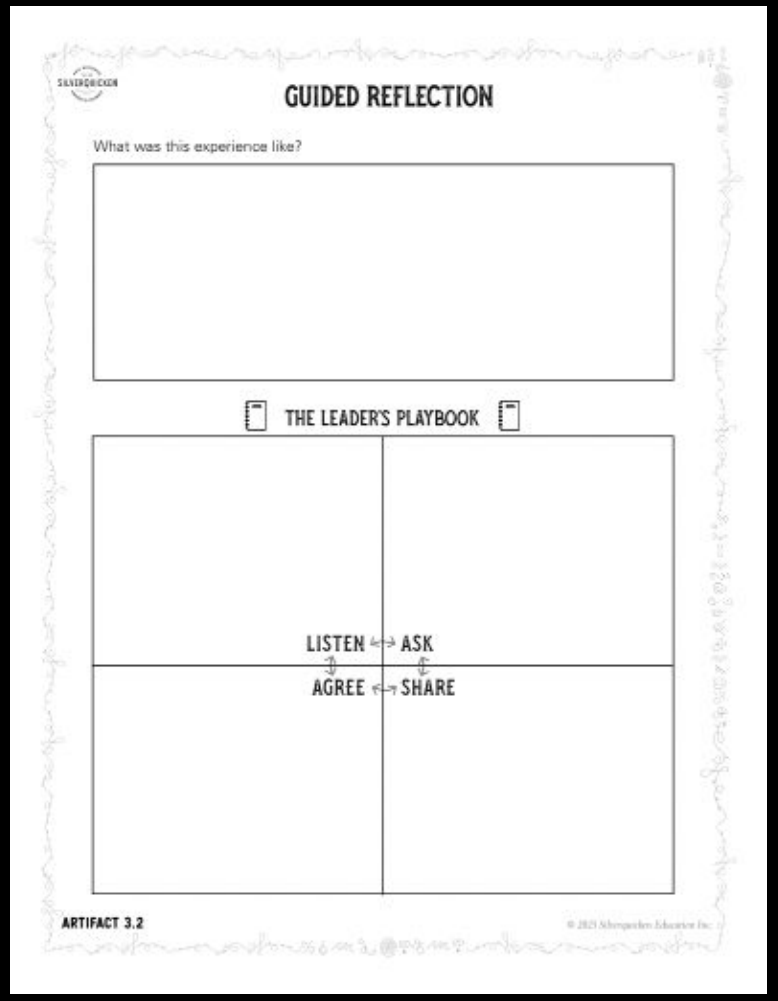
FINDPATH COMMONSKEEPER WEAVERCHANTER

Silfglas Beads + Bags

- Read the scenario below and three responses. Students select the response that is closest to their own and collect a Silfglas bead matching the color of that Strand.

"You're working on a Silverquicken challenge, but it's really hard. What do you do?"
- "Keep trying! You never give up on anything." (FINDPATH)
- "Find a couple of friends and ask for help." (COMMONSKEEPER)
- "Take a break. You always think better with a clear head." (WEAVERCHANTER)

- Students should keep their beads in a small bag that they labeled with their name in Session 1. They can leave the bags with you. The beads represent their developing Strands. In a later session, they will make a craft with the beads they've collected.



GUIDED REFLECTION

What was this experience like?

THE LEADER'S PLAYBOOK

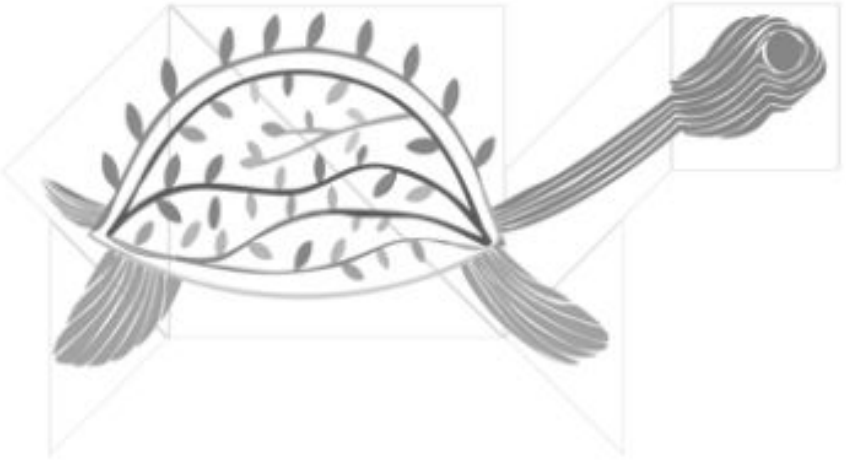
LISTEN ↔ ASK

AGREE ↔ SHARE

ARTIFACT 3.2

LET'S TRY ANOTHER ONE!

TWO SIDES TO EVERY COIN - SOLUTION



DID YOU KNOW?

DEBRIEF

SO HOW CAN YOU DO THIS NEXT WEEK?

- Download the activities from our website!
- Think about ways to create productive cooperative thinking:
  - Complex / novel activities (force constraints, reduce instructions, add layers, spread out materials)
  - Assign roles or use Strand language
  - Promote clarifying questions, LASA techniques, and reflection
- Come to our booth and learn more!