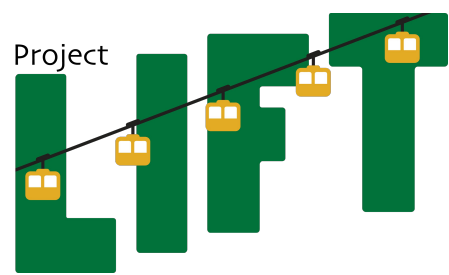


# Inviting Engagement and Exploration: Supporting Inquiry in ELA and Math



Janine Firmender  
Saint Joseph’s University  
Philadelphia, PA

Liz Fogarty  
University of St. Thomas  
Minneapolis, MN

Catherine Little  
University of Connecticut  
Storrs, CT

This project is supported under the Javits Gifted and Talented Students Education Program, PR/Award Number S206A170030, as administered by the OESE, U.S. Department of Education.

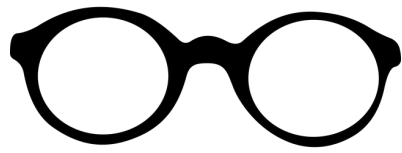
|                                   |                                                  |                                    |                                                 |                                 |
|-----------------------------------|--------------------------------------------------|------------------------------------|-------------------------------------------------|---------------------------------|
| Drove to Confratute               | Enjoy crafting                                   | Grow a garden                      | Speaks a language (other than English) fluently | Has run a full or half marathon |
| Read 3+ books this summer         | Has seen all of Ted Lasso                        | Plays a sport                      | Has zero unread emails                          | Has been skydiving              |
| Has been to Asia                  | Has a pet                                        | FREE                               | Has played Pickleball                           | Has been to Confratute before   |
| Was a Scout (Boy, Girl, Campfire) | Can do a cartwheel                               | Lived outside the US for 3+ months | Has seen new Karate Kid                         | Played in the band              |
| Loves karaoke                     | Live in a state that touches (or is) Connecticut | Went to a Ntl. Park this summer    | Screams at scary movies                         | Has a tattoo                    |

# Project LIFT (<https://lift.uconn.edu>)

- Project goals
  - Exploring student behaviors that may be evidence of advanced academic potential
  - Linking instructional practices to the high-potential behaviors students may show
  - Infusing strategies to elicit and support high potential into standards-based instruction for all learners
  - Considering next instructional steps when students demonstrate high-potential behaviors

## Project Development and Outcomes

- 64 teachers across six years (1-3 years per teacher)
- Summer institute: high-potential behaviors, strategies, 5E model, lesson development with tiering
- 46 collaboratively developed lessons (12 K/1, 18 gr2, 16 gr3)
- Findings indicated change in perceptions of advanced behaviors and use of rigor and discourse practices



# LOOK OUT!

What would you expect your students to do?

Where might you see behaviors indicating advanced potential?



## 6 High Potential Behaviors

# Perceptive

- Recognizes/understands patterns in familiar and novel situations
- Discerns similarities and differences and applies understanding of them in new contexts
- Makes independent connections
- Acquires new learning rapidly and with relative ease

*And also...*

- Corrects the teacher and other students
- Rushes through “easy” work and gets bored easily

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Strategic

- Analyzes situations for critical information
- Applies learned strategies to solve problems
- Explores alternative solutions to problems
- Evaluates problem situations and solutions

*And also...*

- Questions “rote” approaches to problem solving
- Manipulates rules and systems

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Communicative

- Expresses and expands upon ideas clearly
- Interprets and uses symbol systems
- Elaborates on ideas to demonstrate reasoning
- Seeks and uses information to make inferences and invite collaboration

*And also...*

- May dominate discussions
- May be argumentative

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Resourceful

- Uses available resources to address problems and tasks
- Applies learned information and past experiences to new contexts; demonstrates transfer of learning
- Adapts resources and skills to new contexts
- Organizes resources and information to address problems

*And also...*

- May not follow or wait for directions
- Manipulates situations

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Creative

- Views new and familiar ideas and situations in new and unusual ways
- Generates many ideas and shows ability to expand on ideas
- Interprets situations and applies ideas toward desired changes or outcomes
- Shows playfulness with language and situations

*And also...*

- May use humor inappropriately
- May struggle with or resist tasks with limited choice

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Curious

- Asks many and varied questions
- Sustains attention in exploring areas of interest
- Asks questions to support deeper understanding and clarification
- Shows unusual or advanced interests

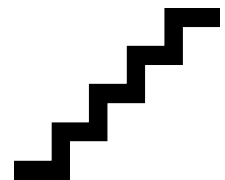
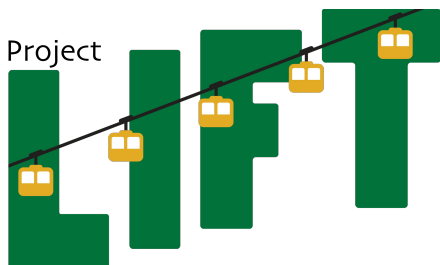
*And also...*

- May resist transitions and moving on to new topics
- Questions authority

Advanced Academic Programs Office. (2013). *Young Scholars handbook* (rev.ed.). Instructional Services Department, Fairfax County Public Schools.

# Behaviors Change, Vary, and Develop!

- Students may be showing behaviors to a different degree in different learning contexts and content areas.
- Students show behaviors along a continuum.





Discard





What if the digit 4 is the first card drawn?



Where would you put it and why?

What would happen if you put it in another spot?



Math Decisions and Outcomes Task





# Decisions and Outcomes

**Decisions and Outcomes** is a critical thinking strategy which helps students identify and evaluate a variety of decisions and their potential short- and long-term consequences.



# Decisions and Outcomes

In choosing from alternatives and examining the events which might follow, students are able to deepen their understanding of cause and effect relationships and analyze chains of events.



Purposes of using...

## Decisions and Outcomes

- Helping students consider cause and effect relationships
- Guiding students to recognize the influence of assumptions, values, and evidence on decision-making



Purposes of using...

## Decisions and Outcomes

- Promoting students' ability to make inferences and predict implications and consequences
- Looking for evidence of behaviors reflecting students' *perceptiveness, strategic thinking, and communication*



# Decisions and Outcomes

What are some specific examples of things you teach that you could envision shaping with a focus on decisions and outcomes?

- *Brainstorm*
- *Organize*





# Point of View

**Point of View** is a creative and critical thinking strategy which helps students analyze how different people look at the same situation.



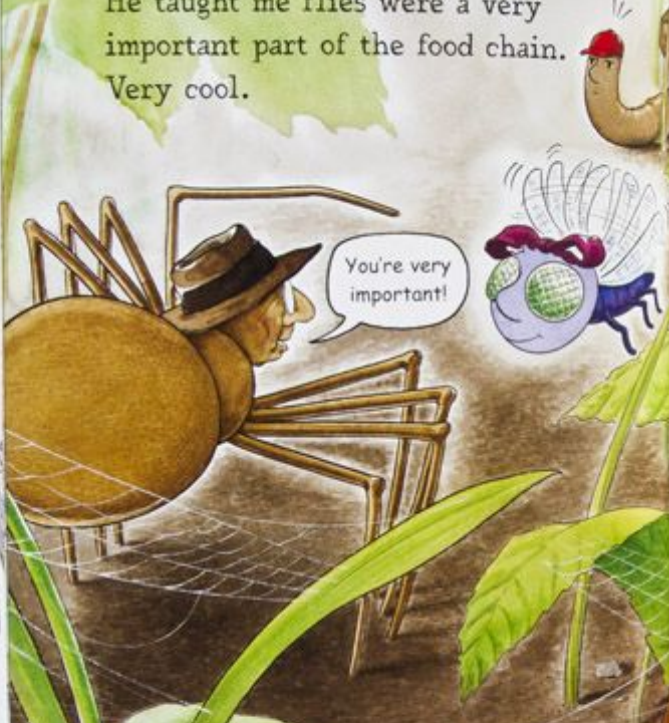
# Point of View

Students learn to empathize and understand why people may have different points of view. This broadens perspective, and extends their ability to relate to others.

Students also learn to control impulsive responses to ideas or opinions expressed by others.

JULY 14

Spider's grandfather is so smart.  
He taught me flies were a very  
important part of the food chain.  
Very cool.



JULY 15

Worm sat me down and explained  
the food chain.



That is so not cool.



## Point of View

| <div data-bbox="125 1312 462 1554"> </div> <div data-bbox="474 1306 667 1341">BRAINSTORM</div> |                                                         |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Sentence describing something from Fly's day.                                                  | Something that would look HUGE from Fly's point of view |
|                                                                                                |                                                         |



# Point of View

1. Who is in the picture/text/situation? Who is missing?
2. Whose voices are represented? Whose voices are marginalized or discounted?
3. What are the intentions of the author? What does the author want the reader/viewer to think?



Questions adapted from DeVoogd and McLaughlin, 2004



Purposes of using...

## **Point of View** as a strategy

- Engaging students in considering why and how individuals may differ in their perspective
- Promoting the practice of examining possible perspectives and understanding the varied assumptions (beliefs, values) that drive different points of view



Purposes of using...

## **Point of View** as a strategy

- Encouraging development of students' ability to recognize patterns of behavior and thinking
- Helping students to develop communication skills of sharing and listening
- Looking for evidence of behaviors reflecting students' *perceptiveness, communication, and curiosity*







# Fluency, Flexibility, Originality, and Elaboration

**Fluency** - Think about or generate many ideas

**Originality** - Combine ideas in new ways or come up with unusual ideas

**Flexibility** - Think of or generate ideas that are different or varied

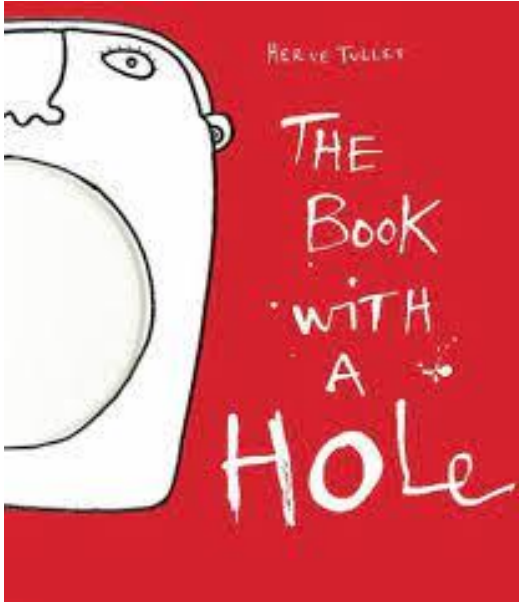
**Elaboration** - Develop ideas and provide more details



# Fluency, Flexibility, Originality, and Elaboration

Fluency and flexibility open up the thinking of students to consider many possibilities.

Originality and elaboration stretch the uniqueness of students' thinking.



- Generating ideas
- Elaborating on ideas
- Predicting, extending, connecting, writing

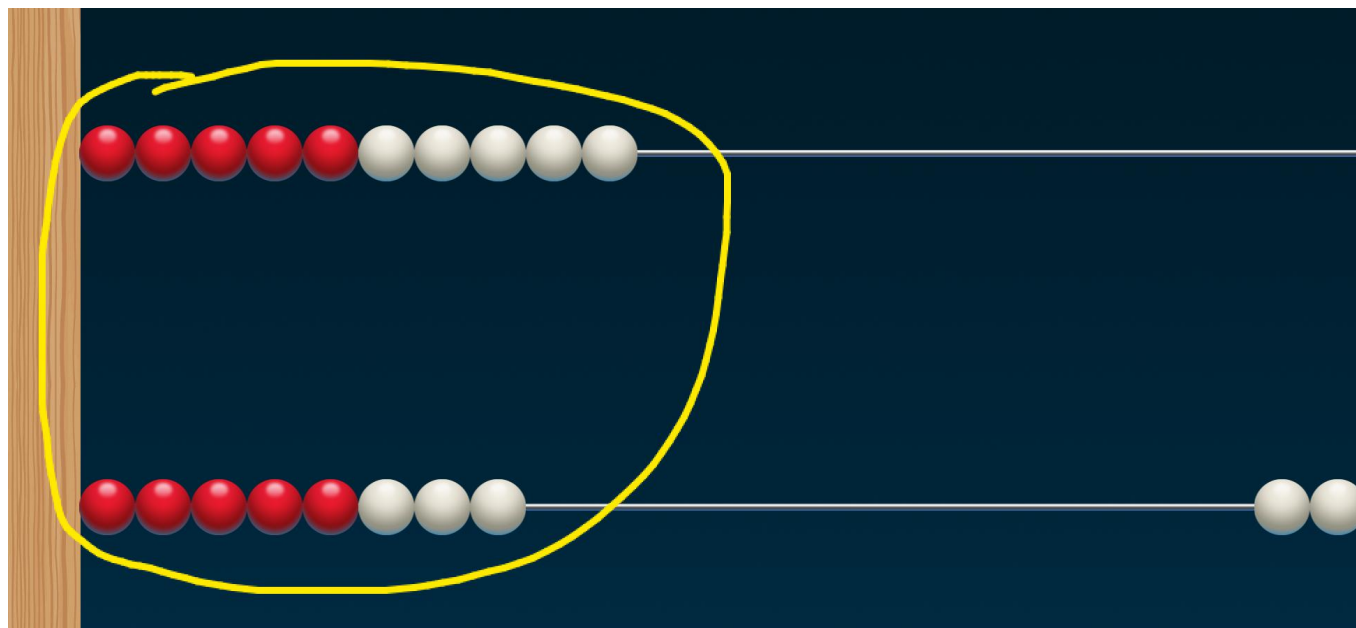
Select the number 12, 24, or 36

Represent it in as many ways as you can.

Represent it in a way that you think no one else will think of.



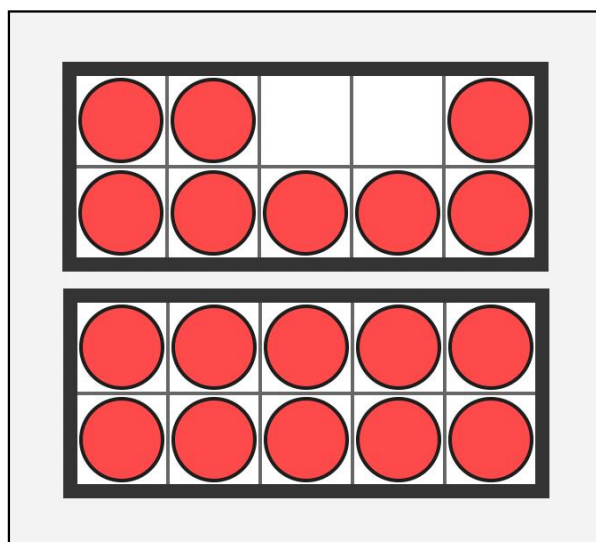
# What number do you see?



Math Fluency, Flexibility, Originality, and Elaboration Task



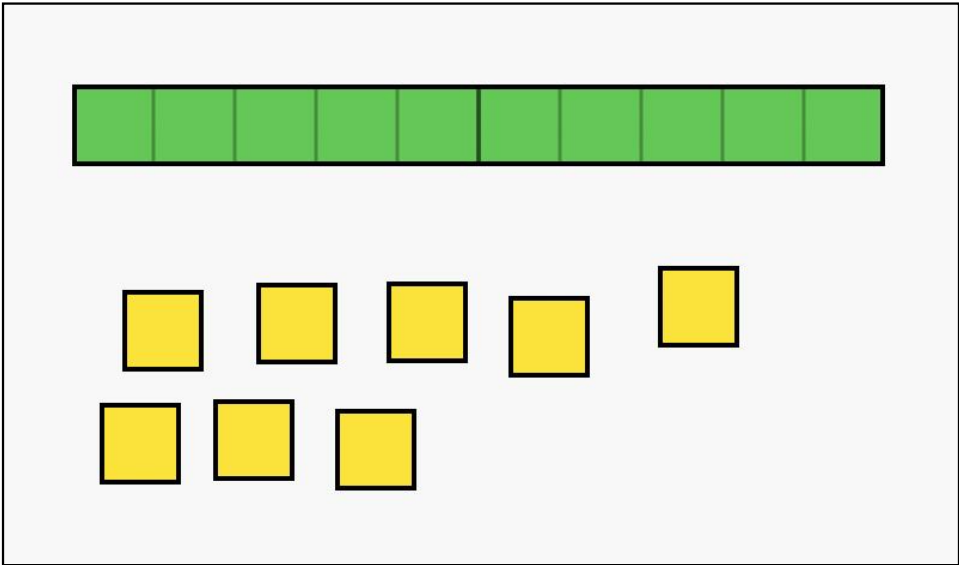
# What number do you see?



Math Fluency, Flexibility, Originality, and Elaboration Task

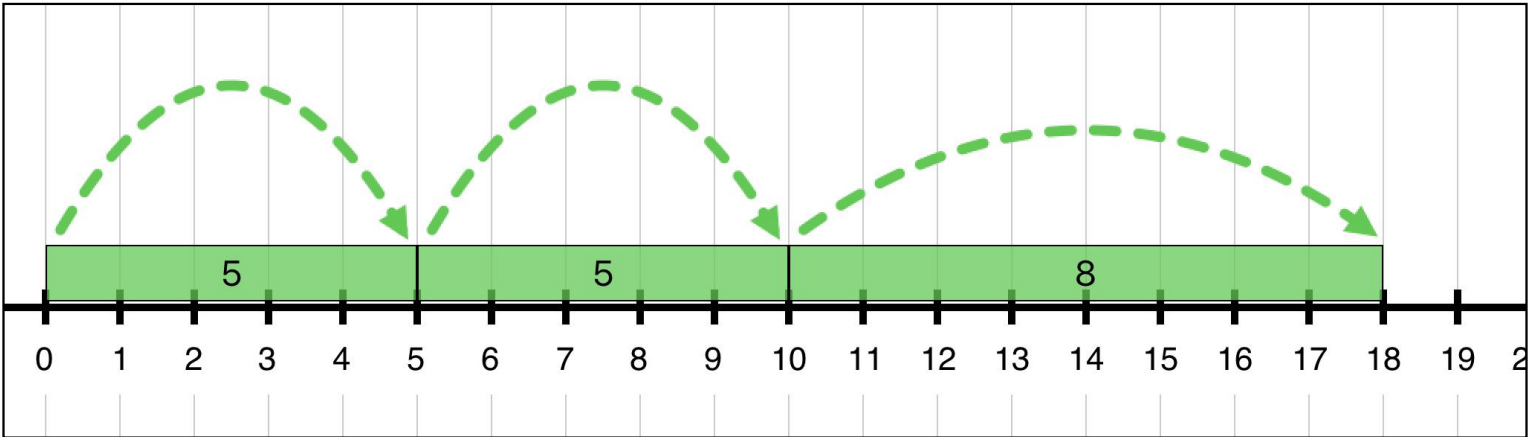


What number do you see?



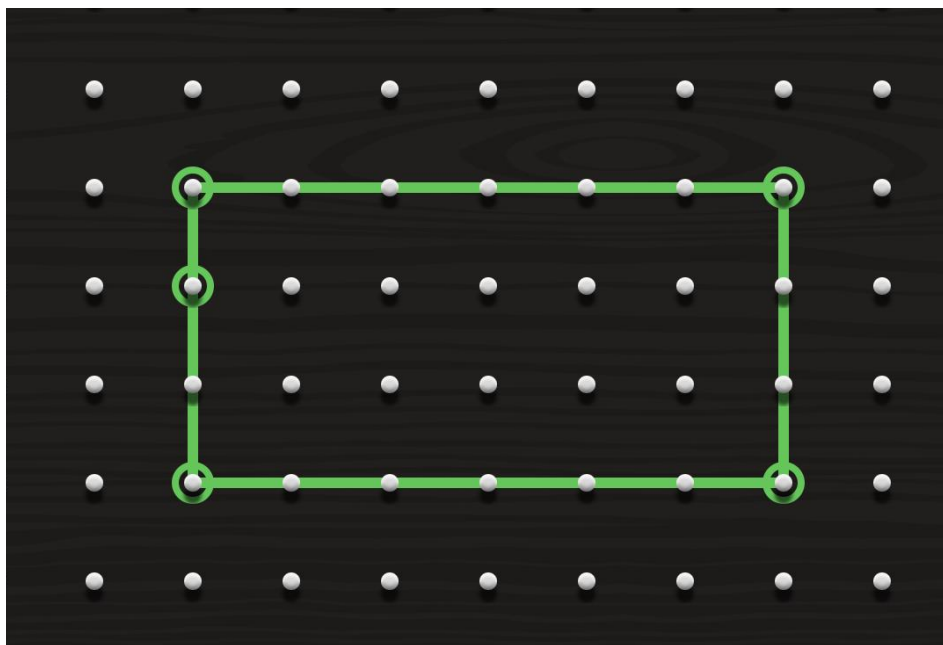
Math Fluency, Flexibility, Originality, and Elaboration Task

What number do you see?



Math Fluency, Flexibility, Originality, and Elaboration Task

What number do you see?



Math Fluency, Flexibility, Originality, and Elaboration Task

What number do you see?

$$8 + 3 + 7$$



Math Fluency, Flexibility, Originality, and Elaboration Task



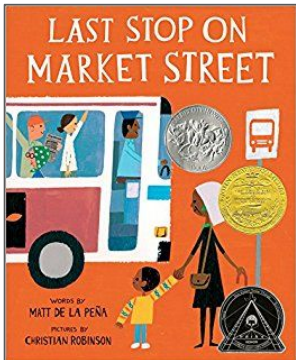
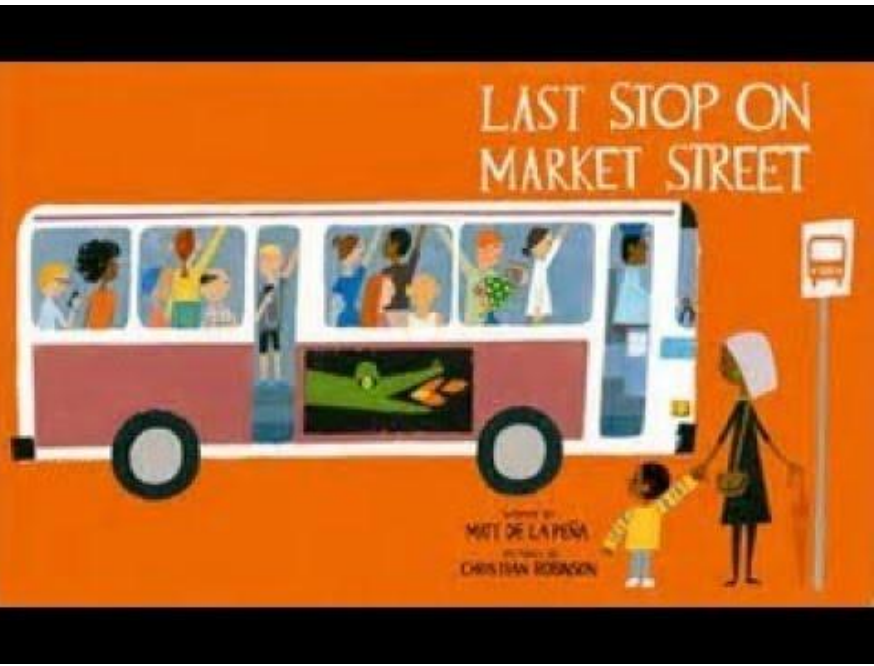
Purposes of using...

## **Fluency, Flexibility, Originality, and Elaboration**

- Engaging students in divergent thinking
- Promoting students' recognition of multiple pathways to answering questions, solving problems, etc.
- Encouraging development of students' ability to look for connections and patterns, to classify, and to organize



Whole group instruction: Questioning



| Questions I have about the text | Answer & evidence |
|---------------------------------|-------------------|
|                                 |                   |



# Questioning

**Questioning** is a critical thinking strategy closely linked to the process of metacognition, or thinking about thinking. People ask questions for many different reasons, including curiosity and clarification, but many times the most important questions are the ones we ask ourselves.



# Questioning

The language used when creating questions drives the type of response.

All students can be taught to articulate complex responses to the “inner questions” that guide their thought processes.



Purposes of using...

## **Questioning** as a strategy

- Encouraging students in taking responsibility for learning by considering questions they need to or want to ask
- Helping students recognize that seeking further information or different perspectives supports problem solving and deeper understanding





Purposes of using...

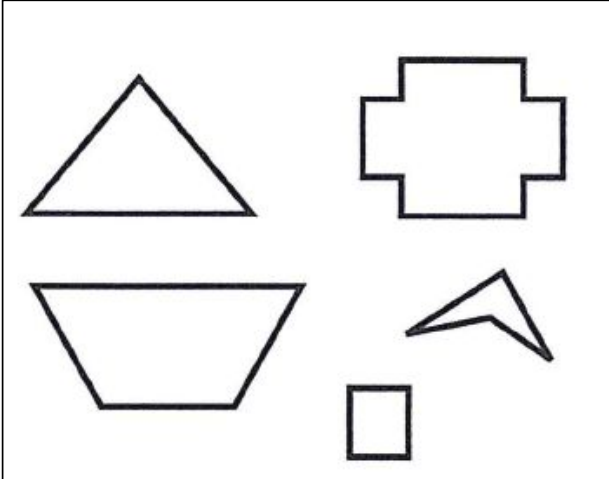
## **Questioning** as a strategy

- Guiding students to make connections and extensions beyond the specific information in front of them
- Looking for evidence of behaviors reflecting students' *curiosity, strategic thinking, communication, resourcefulness, and creativity*

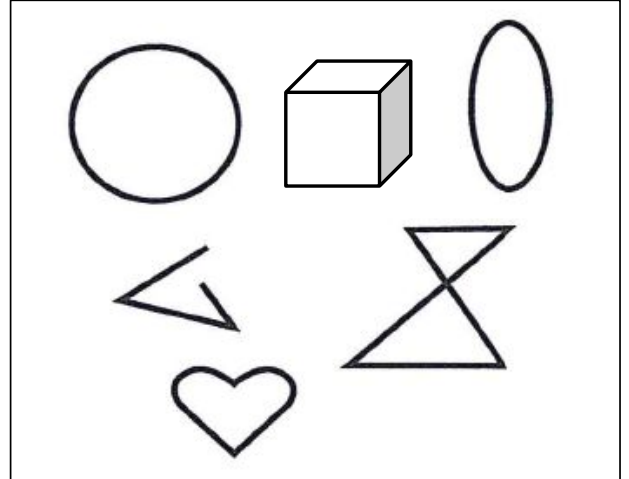


# Encapsulation

These are polygons.



These are not polygons.



# A Polygon is...



Encapsulation



## Encapsulation

Is an organizational tool that helps students focus on main ideas and key words.

Is **not** a summary or a simplified restatement of information or opinions.



# Encapsulation

**Encapsulation** helps students communicate in a more concise and precise manner.

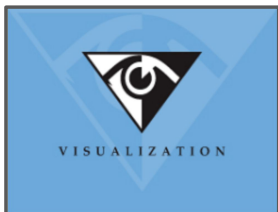
It involves synthesizing information and nuances to capture the essence of an idea, object, or activity.



Purposes of using...

## **Encapsulation**

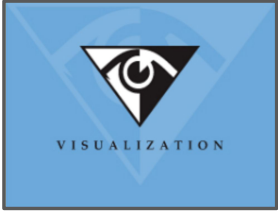
- Helping students synthesize
- Observing students' ability to organize and prioritize key ideas
- Encouraging precise articulation of key ideas
- Looking for evidence of behaviors reflecting students' *perceptiveness* and *communication*



## Visualization

Conscious act of forming mental images and pictures of something that is not actually present.

A variety of professionals use visualization, such as athletes, musicians, performers, inventors, and business people to reach goals and improve performance.



Purposes of using...

# Visualization

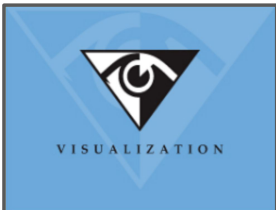
- Encouraging students to develop aspects of abstract thinking by envisioning things that are not physically present
- Promoting students' ability to consider implications and consequences of choices and actions





## Counting Cupcakes

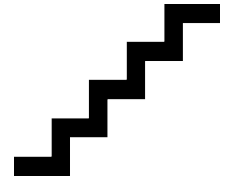
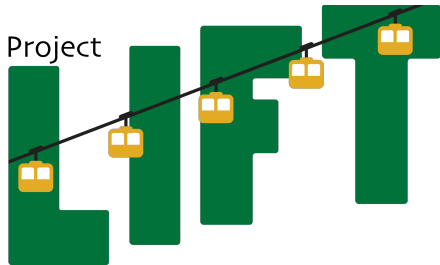
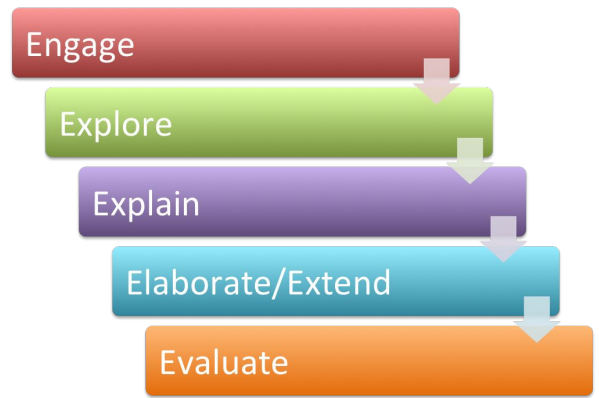
In this lesson students will be introduced to using the Visualization Thinking Strategy as an approach to solving word problems. Students are being asked to visualize and model the “action” in a story problem to recognize subtraction situations initially and later both addition and subtraction situations.



Purposes of using...

## Visualization

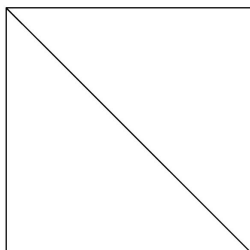
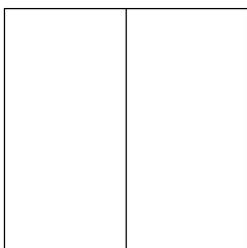
- Encouraging development of students’ ability to emphasize details and explain their thinking
- Looking for evidence of behaviors reflecting students’ *perceptiveness, communication, and creativity*



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## Math and Literacy Breakouts

### Math Breakout



### Literacy Breakout

Engage

Do a picture walk

What are the characters thinking/ feeling throughout the book? How do you know by looking at the illustrations?