

# Student Engagement: Thinking Routines

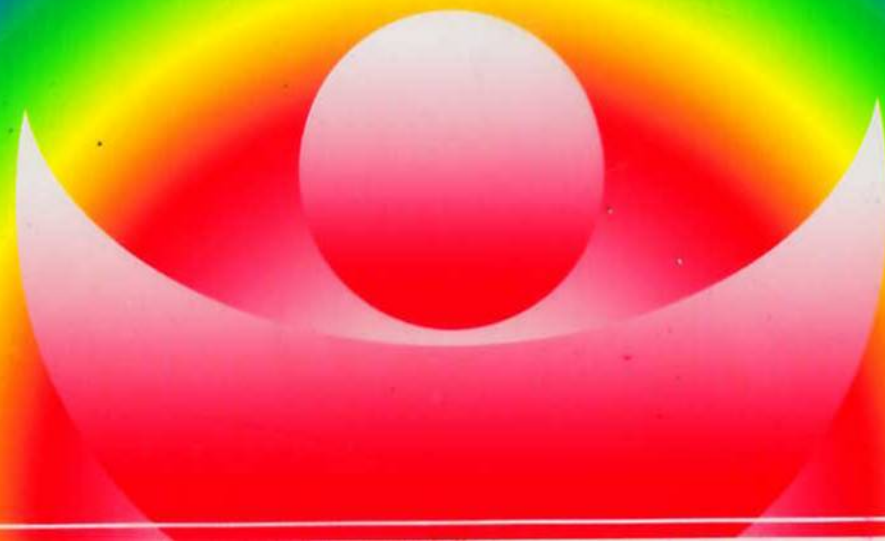
what  
do you  
**think** is  
going on?



Dr. Kathy Perez

kperez@stmarys-ca.edu

*Helping  
All Students  
Succeed!*





**Dr. Seuss™**

**Think left and  
think right and  
think low and  
think high.**

**Oh, the things you can  
think up if only you try!**

# *Engaging the Brain*

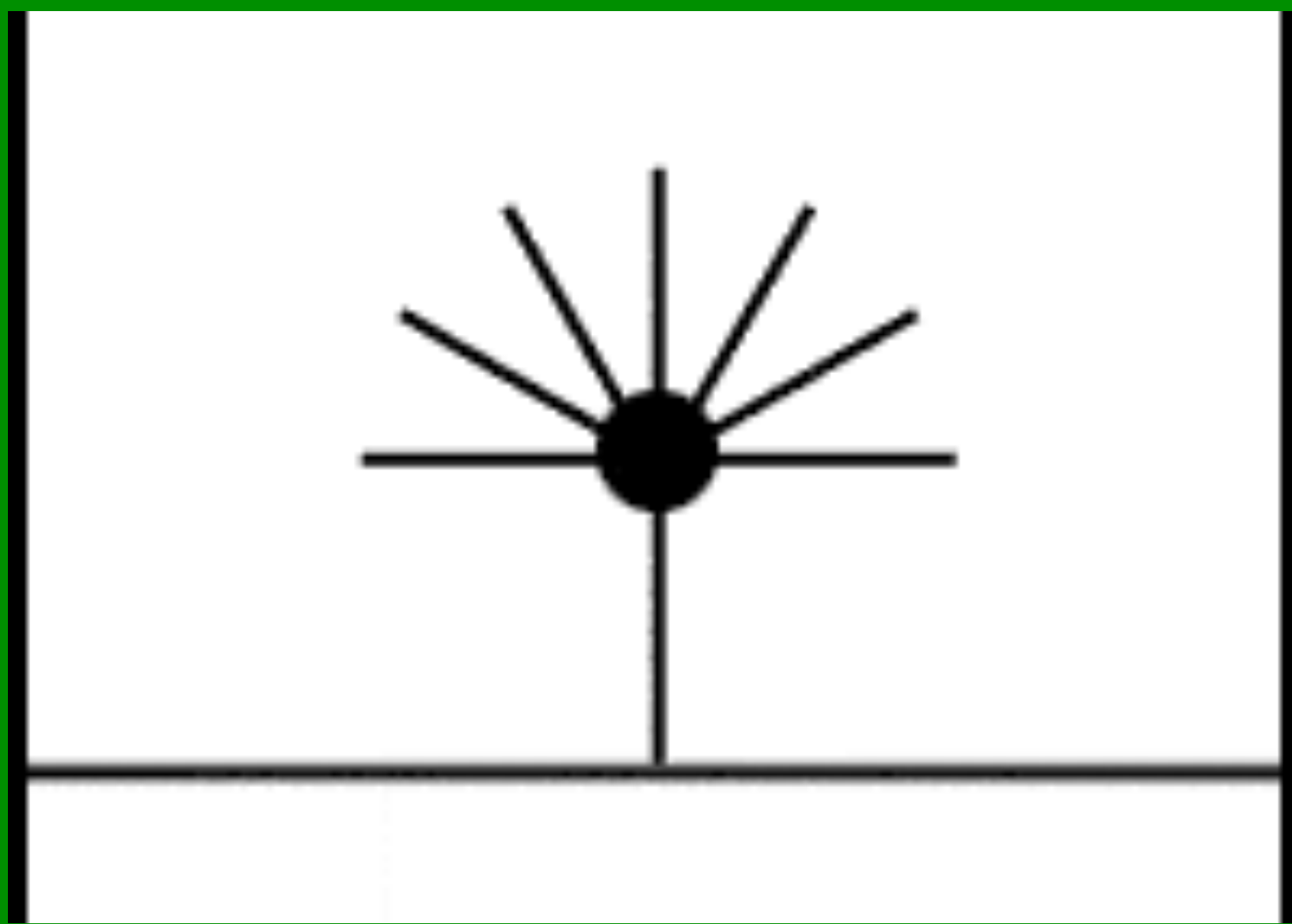




A stylized illustration at the top of the slide features a bright yellow sun with a blue circle in the center, partially obscured by light blue and white clouds. The background is a solid blue color with a subtle pattern of lighter blue squares.

# Consider the possibilities...

- A worm on roller skates.
- Pots of gold at the ends of a rainbow.
- A two headed worm.
- Four fishermen pulling in their net.
- A rainbow during a blackout.
- People watching a black and white rainbow.





# *Believe it or not...*

- ➔ **A spider doing a handstand.**
- ➔ **Total eclipse of the sun on a stick.**
- ➔ **A family of worms stuck on a toffee apple.**
- ➔ **A frightened mop.**
- ➔ **A dandelion seed making a perfect landing.**
- ➔ **A supermodel on a bad hair day.**
- ➔ **Albert Einstein on a good hair day.**
- ➔ **A punk-rock dandelion**



# Can you guess?

Hong Kong Elementary School First Grade Student Admissions Test Question



香港小学入学考试题：21题 Hong Kong Elementary School Admissions Test Question #21

What parking spot # is the car parked in?

请问汽车停的是几号车位？

请在20秒内完成回答

Please answer within 20 seconds

Hong Kong Elementary School First Grade Student Admissions Test Question



香港小学入学考试题：21题  
Hong Kong Elementary School Admissions Test Question #21

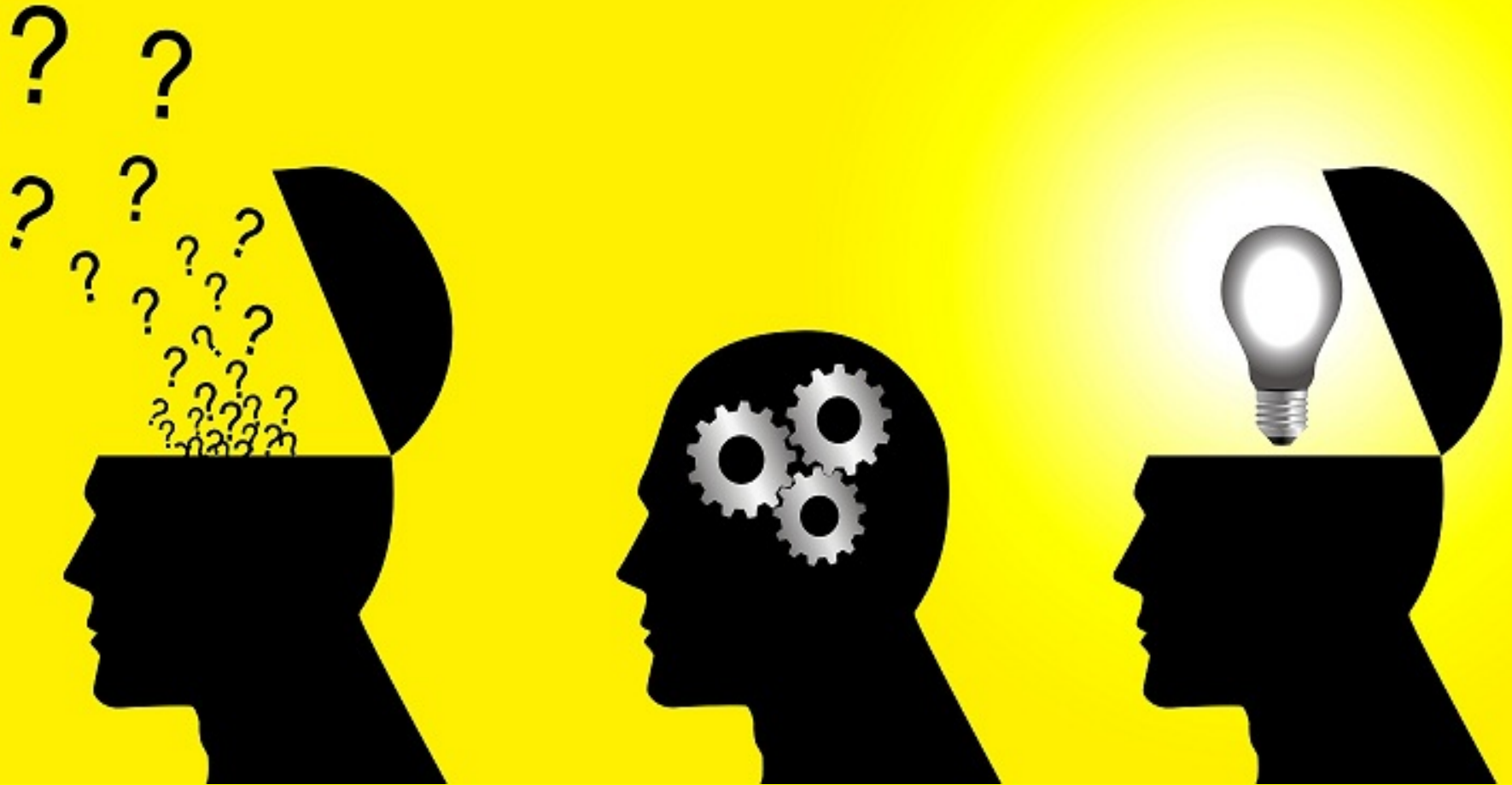
What parking spot # is the car parked in?

请问汽车停的是几号车位？

请在20秒内完成回答

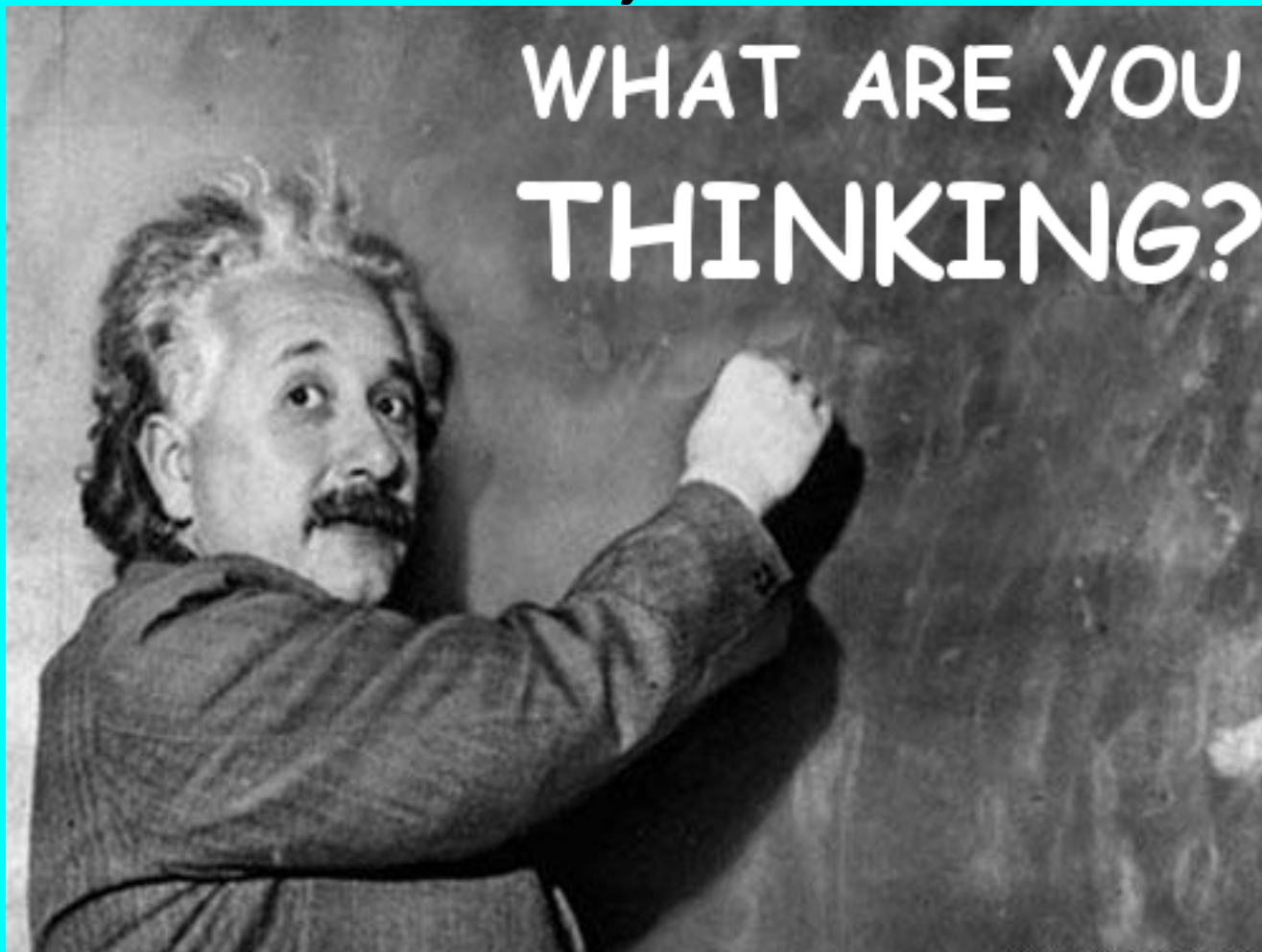
Please answer within 20 seconds

# What is thinking?



# think•ing *n*

use of the mind to form thoughts,  
to reason, to reflect

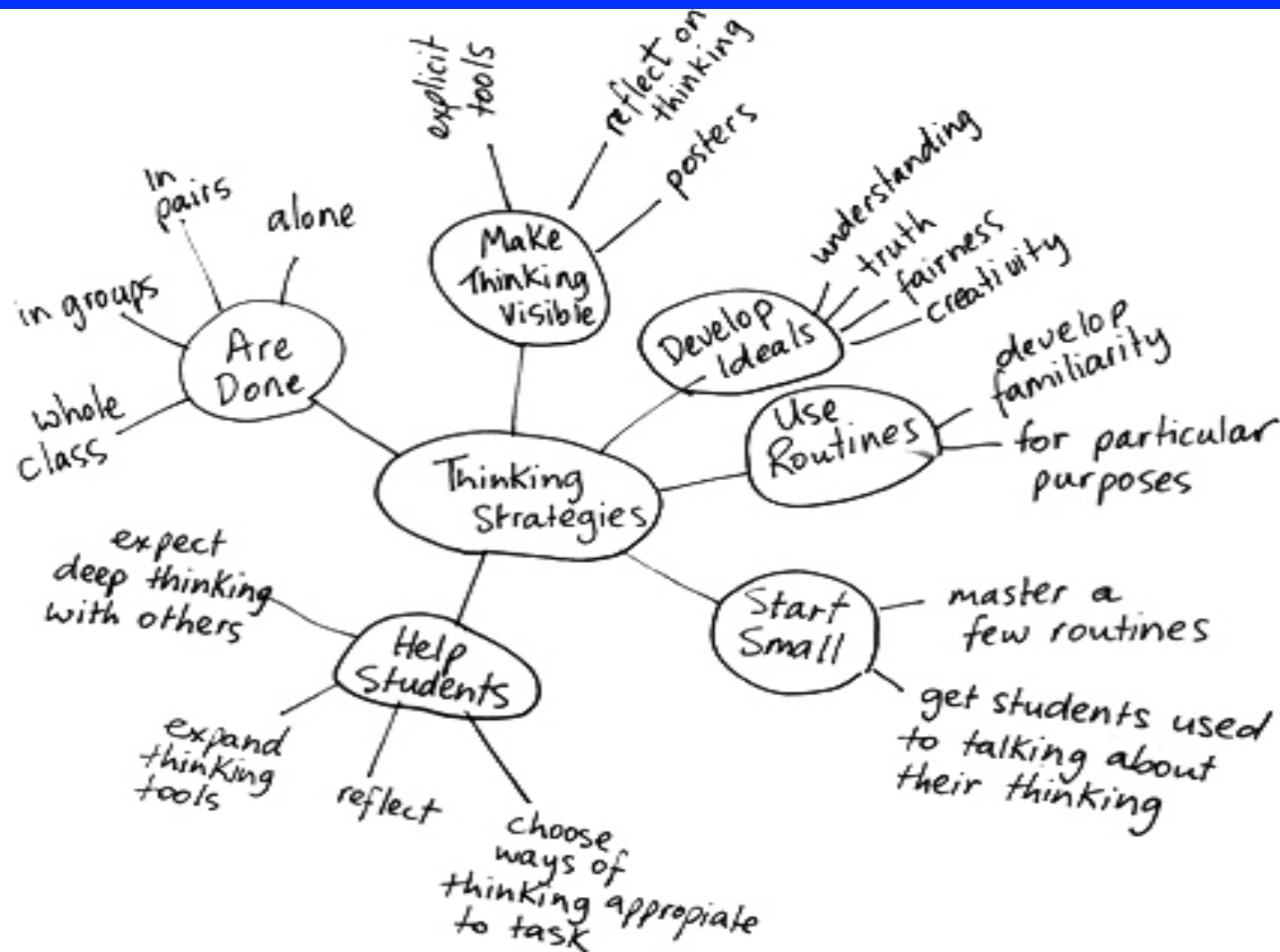


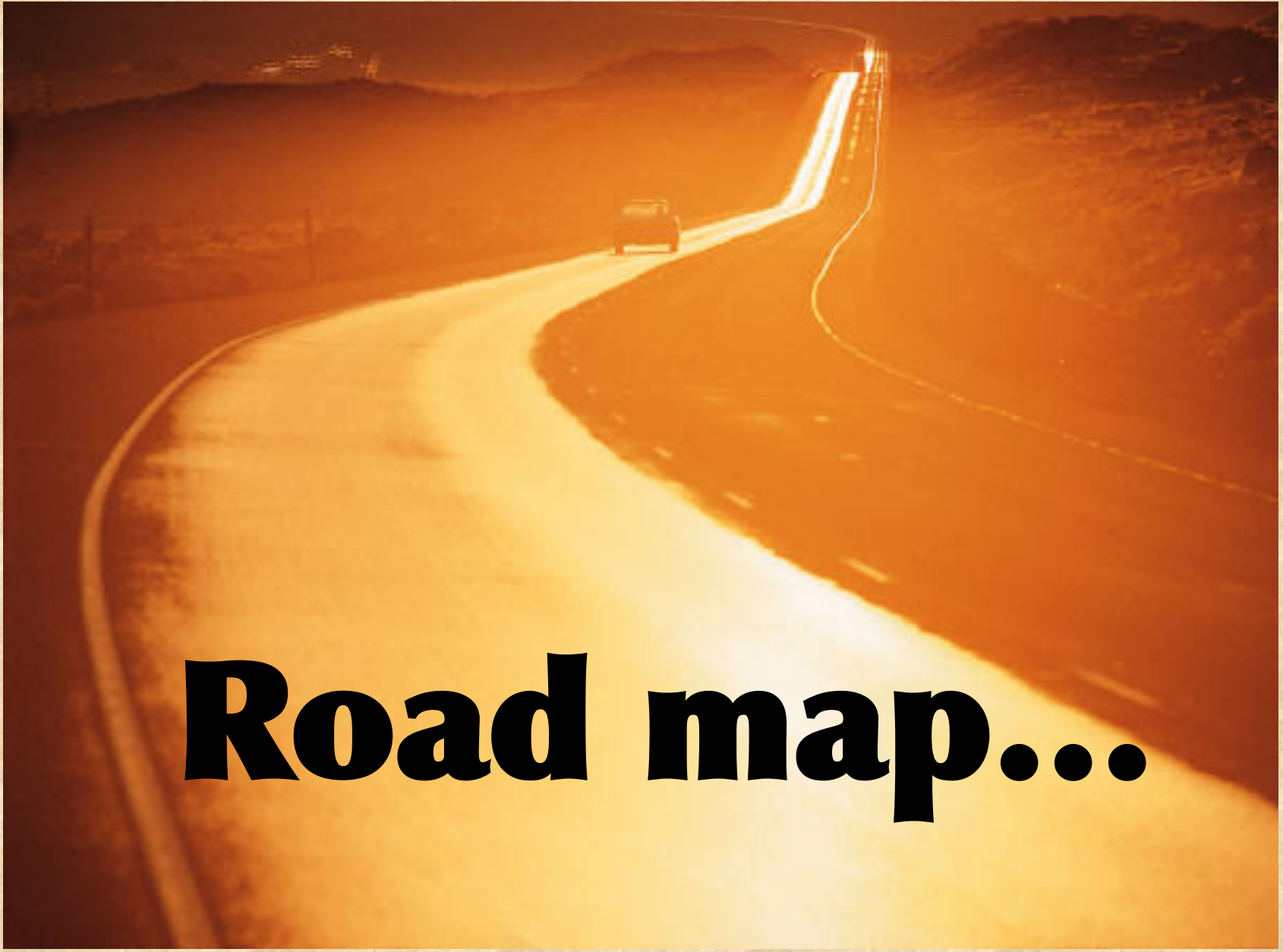
# rou•tine *n*

1. a pattern of behavior adopted for a particular circumstance

2. a rehearsed set of movements or actions that make up a performance







**Road map...**



# AGENDA

## *Thinking Routines for Student Engagement*

- ✓ Why thinking matters
- ✓ Defining thinking routines: tools, structures, patterns of behavior
- ✓ Organizing thinking routines
- ✓ Trying out the structures
- ✓ Fostering creativity
- ✓ Mindstreaming
- ✓ Closing



The image features four hands, two on the left and two on the right, positioned to form a circle around the central text. The hands are light-skinned and appear to be reaching towards the center. The background is white, and the entire scene is set against a solid blue border.

**Critical thinking,  
Communication,  
Collaboration, &  
Creativity**

# “Picture This!”

- “Frame” today’s experiences by finding 3 partners:
- Camera
- Camera person
- Frame
- From a table team other than your own



MORE  
THAN

100

# Brain-Friendly

TOOLS AND STRATEGIES FOR

# Literacy Instruction



Kathy Perez



**JB** JOSSEY-BASS TEACHER

GRADES **K-12**

# Co-Teaching Book of Lists



**KATHERINE D. PEREZ**

**Hot off  
the  
press!**

# THE NEW INCLUSION

Differentiated Strategies  
to Engage ALL Students



Kathy Perez




# Thinking Routines...

- What do you know?
- What do you want to find out?

# How smart is your right foot?



- Lift your right foot off the floor and make clockwise circles with it
- Now, while doing this, draw the number “6” in the air with your right hand
- What happened?
- Your foot will change direction like your hand!



# Tools...

- ➔ **Used over and over again in the classroom**
- ➔ **Support specific thinking moves**



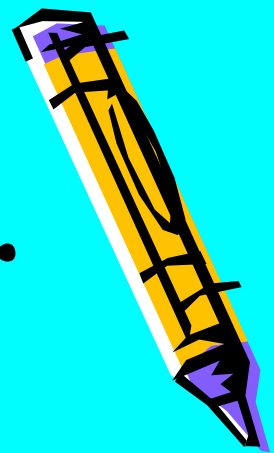


# Structures...



- **Through which students initiate, explore, discuss, document and manage their thinking**

# Patterns of behavior...



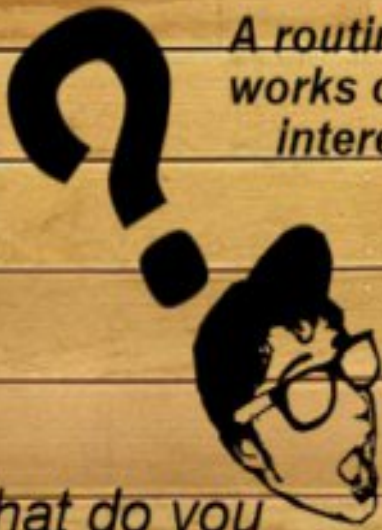
- **To form thoughts, reason or reflect**



# See, Think, Wonder

## Visible Thinking Routines by Visible Thinkingpz.org

*A routine for exploring  
works of art and other  
interesting things*



*What do you  
see?*  
**see**



**think**  
*What do you  
think about that?*



**wonder**  
*What does it make  
you wonder?*

# Warm-Up

What do you SEE

What time period  
do you think it is?

What do you think  
is happening?

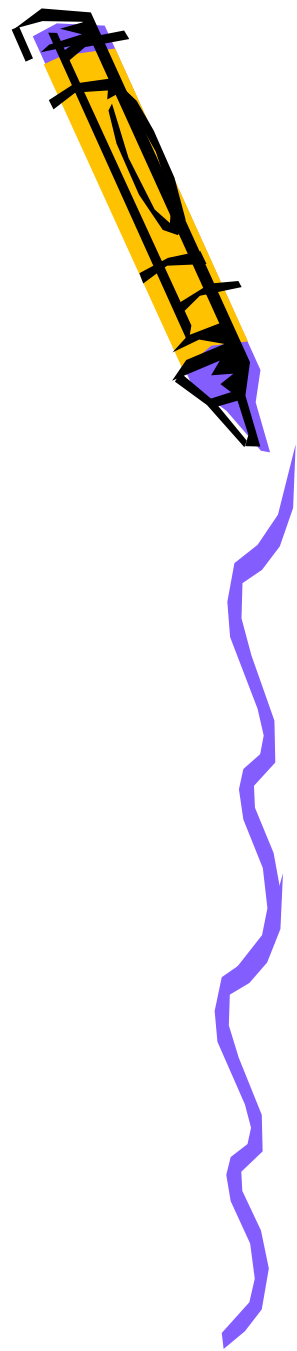
What do you  
wonder?





- What do you see?
- What do you think is going on?
- What does it make you wonder?

# Identifying engaged thinking in your classroom



# Organizing Thinking Routines



# Introducing and exploring ideas







Think - Puzzle - Explore





what do  
you **see**?

The forest has eyes...



How many faces do you see?

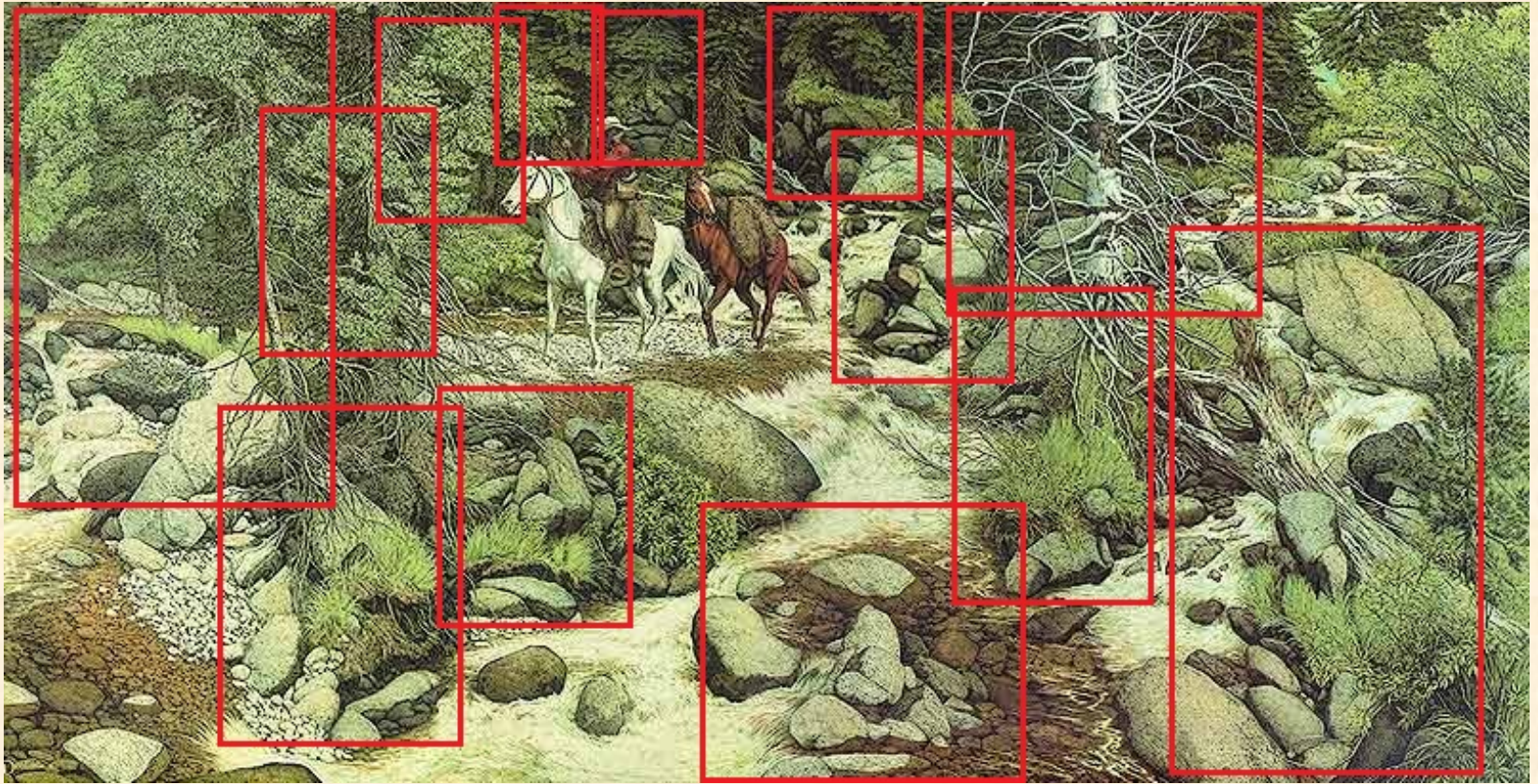


# *Key to collaboration...*



- **Shared ideas**
- **When I think I see all the perspectives – limiting**
- **Need to collaborate to see from other's perspective**
- **Different ways of knowing**

How many faces do you see?





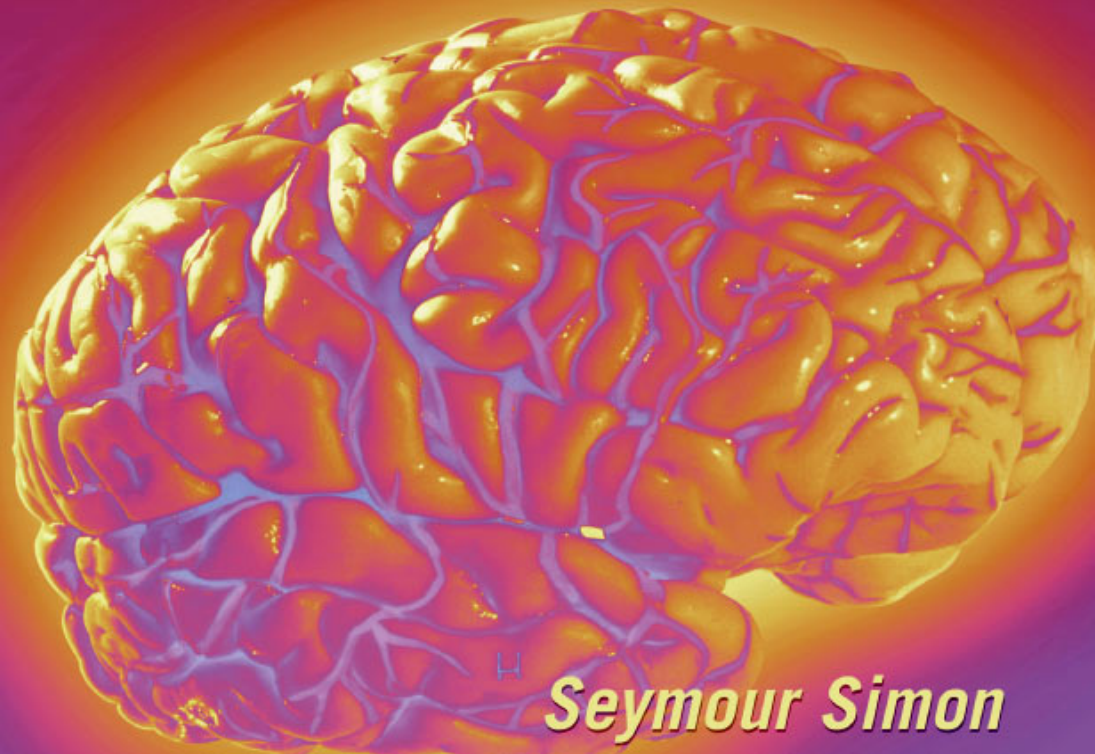
- **What is the importance of having multiple perspectives in a differentiated classroom?**



*Sharing vision...*



 Smithsonian



*Seymour Simon*

# THE BRAIN

OUR NERVOUS SYSTEM

# Picture: “Sketch-to- Stretch”



A bundle of neurons is called a nerve. Nerves are the body's wiring. They carry tiny electrical-chemical signals called nerve impulses. Nerves branch out from the brain and spinal cord to your eyes and ears, your stomach, skin, bones, and even inside your teeth. The thinnest nerves are narrower than a hair. The thickest nerves look like pieces of white rope.

A single nerve cell has a central cell body, branching threads called dendrites, and a long wirelike axon. The dendrites carry electrical signals toward the cell body, while the axon carries the signal away.

Axons are thinner than the thinnest hair, but some axons reach from the spinal cord to the feet. Axons are often surrounded by a fatty covering called a myelin sheath. Myelin acts like insulation around an electric wire and helps speed nerve messages.

Neurons' cell bodies, dendrites, and axons are revealed in these highly magnified computer-colored SEMs.



*Plant a seed...*



# Growing a plant



- What do you need?
- What will it look like at 2 weeks?
- 6weeks?
- 3months?



**Differentiation –  
Where growth meets  
confidence!**

# Create a Culture for Thinking





# ***Prompt for Reflection***

***What do you consider to be the characteristics of a classroom culture that nurtures your students' thinking and learning?***

***Think about a classroom where students are engaged in thinking. What would you likely see and hear in the classroom: What are students doing? What is the teacher doing? Record your thoughts in writing.***

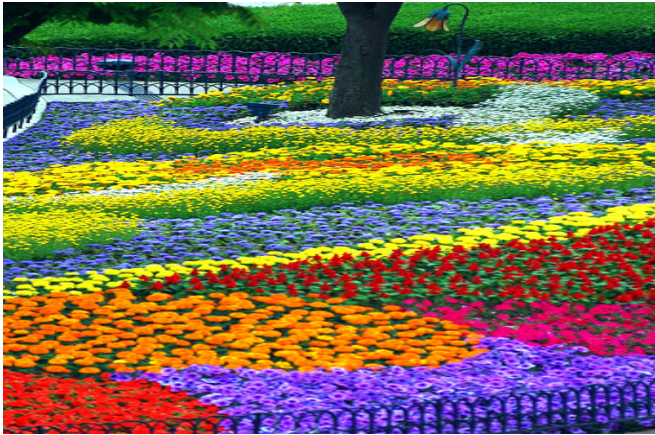
Select the visual that is most like the classroom you pictured in your reflection.



Seashore



Jungle



Flower Garden



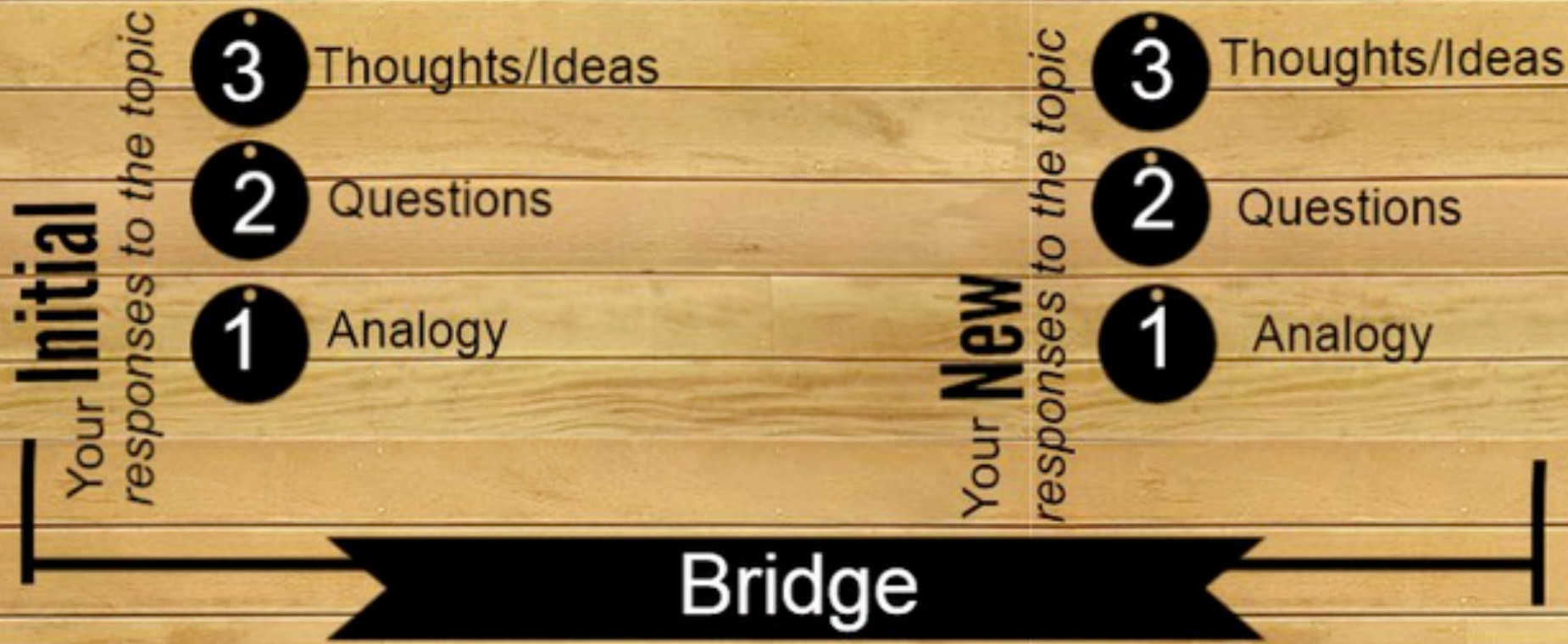
Ocean Reef

Welcome  
Back!



A routine for activating prior knowledge and making connections  
A routine for activating prior knowledge and making connection

# 3-2-1- Bridge



*Explain how your new responses connect to your initial responses?*

# Explanation Game

**Name it...**

- Lucas: "It's brown and sandy."
- Jack: "It feels very sharp."
- Only: "The rock feels sticky. There are bits of little bugs that were eaten."
- Zoe: "I notice that it feels like sand."
- Geoff: "The rock feels bumpy."
- Callie: "The rock sounds like dirt."
- Ben: "It is really rough."
- Winter: "It is nothing that it is heavy."

**Explain it...**

- Bella: "It could be used for hunting. You could throw it at animals."
- Col: "I think it could be used for digging because it's sharp."
- Ella: "It could be used to cut food if you were stuck in the wilderness."
- Jermaine: "It is sharp so it could cut."
- Sam: "It is heavy so maybe to break things apart."
- Arden: "If you know it apart, it would become sand for a smoothie."

**Give Reasons**

- Henry: "I think it shaped as a little rock and it rolled around and collected more sand."
- Emmie: "I think it was formed from lots of little rocks and sand."
- Caroline: "I think it was formed from sharp, dried up sand and water."
- Jon: "I think it could have been formed by different rocks going together."
- Jaeger: "I think it's from the desert."
- Madison: "I think there was water, then sand got in the water and dried up, leaving this rock."
- Will: "I think it was formed by waves because water is stronger than sand."

**What makes you say that?**

- Jacob: "I just felt it."
- Jaeger: "I think that because it was like it was rolled from sand."
- Winter: "When I was holding it my arms went down so I knew it was heavy."
- Lucas: "We are getting our ideas from what we see and what we feel."

What  
makes you  
say that?

Elaina Riley  
Mexico

Siena  
Mcredith  
Sasha  
Will

Why  
is it

# Routines for Synthesizing and Organizing



## SUMMER DELUGE

THE WEST AUSTRALIAN TUESDAY JANUARY 25 2000

# Relief pledge to farmers

Emergency services flooded with calls for help

# Rain rewrites record books

# Headlines

## Task for farmers after big downpour

## Film hit by elements

## Wow! What a washout

## SUMMER DELUGE

The West Australian, Monday, January 24, 2000

(Page 4)

# Damage bill mounts as rain goes on

# rain goes on

TIME	MM OF RAINFALL
Midnight	0.5
1am	0.5
2am	0.5
3am	0.5
4am	0.5
5am	8
6am	83
7am	83.4
8am	83.8
9am	104.0
10am	104.8
11am	104.8
12 noon	110.2
1pm	111.2
2pm	112.6
3pm	112.6
4pm	114.6
5pm	114.8
6pm	115.4

farm leader calls for urgent government help

DELUGED: WATC chief executive Philip Neck and a fellow farmer Edward John Zucal check the trackside drain at Ascot. Usually empty, it was 1.5m deep late yesterday. Picture: BRUCE McLELLIN

# Wow! What a washout

CHERRY BEACHAM It is believed to be the first... DELUGED \$35,000 AUST...



# Daily News!



- As a table team, come up with a headline that captures your learning from this session

The image is a promotional graphic for the TV show 'CSI: Crime Scene Investigation'. It features a dark, moody background with a person in a white lab coat and gloves working at a crime scene. The scene is lit with a blue and purple glow. The title 'CSI:' is written in large, white, block letters at the top. Below it, the words 'CRIME SCENE INVESTIGATION' are written in a smaller, white, sans-serif font. Overlaid on the image are three words in a large, bold, yellow font: 'Colour', 'Symbol', and 'Image', stacked vertically.

CSI:

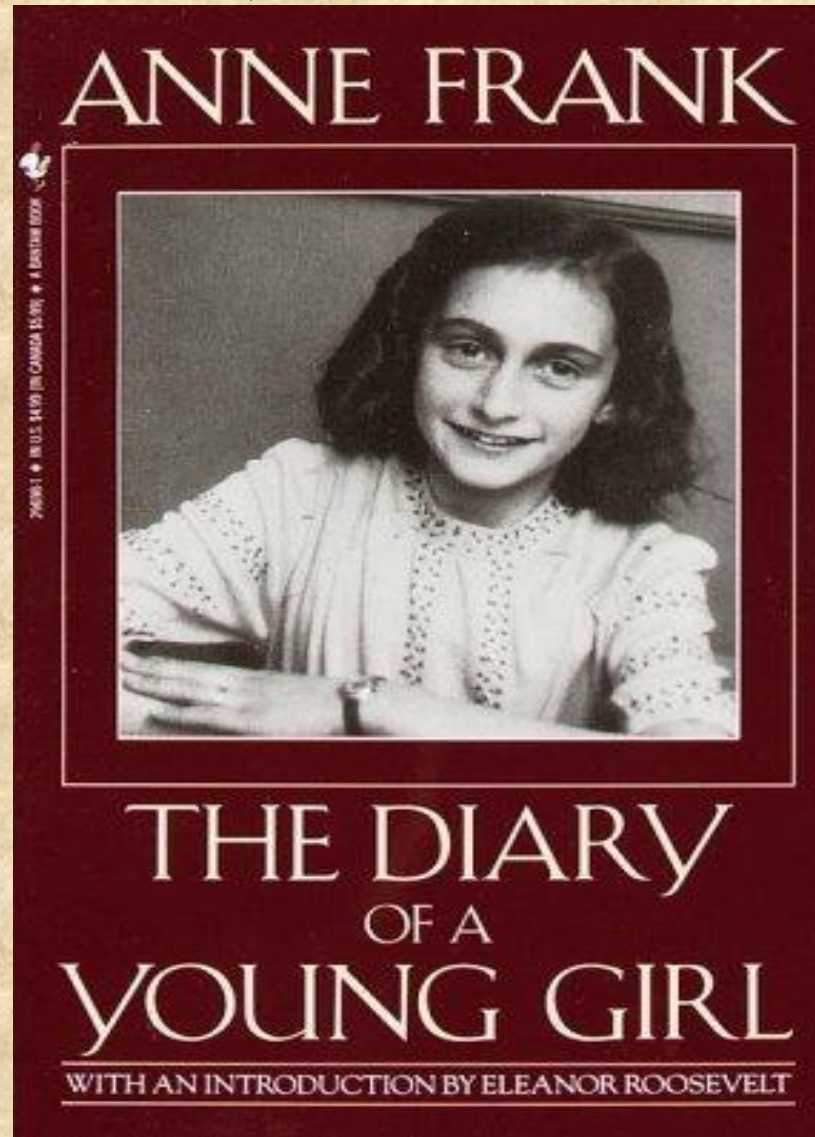
CRIME SCENE INVESTIGATION

**Colour**

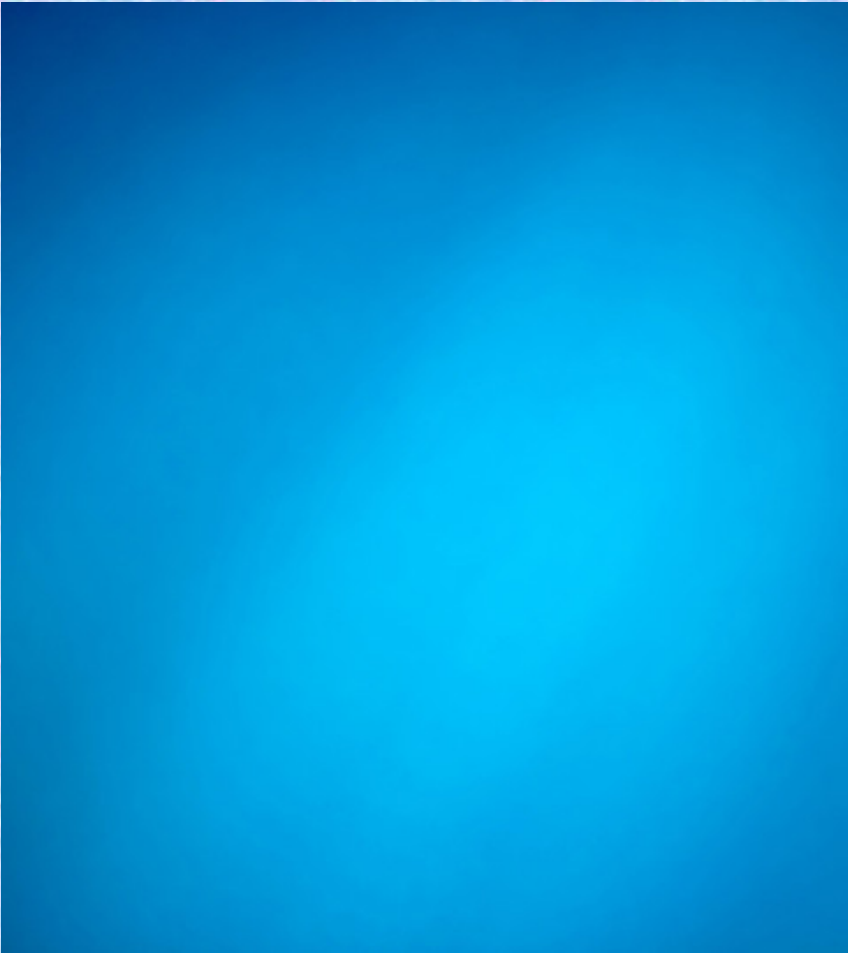
**Symbol**

**Image**

# COLOUR, SYMBOL, IMAGE...



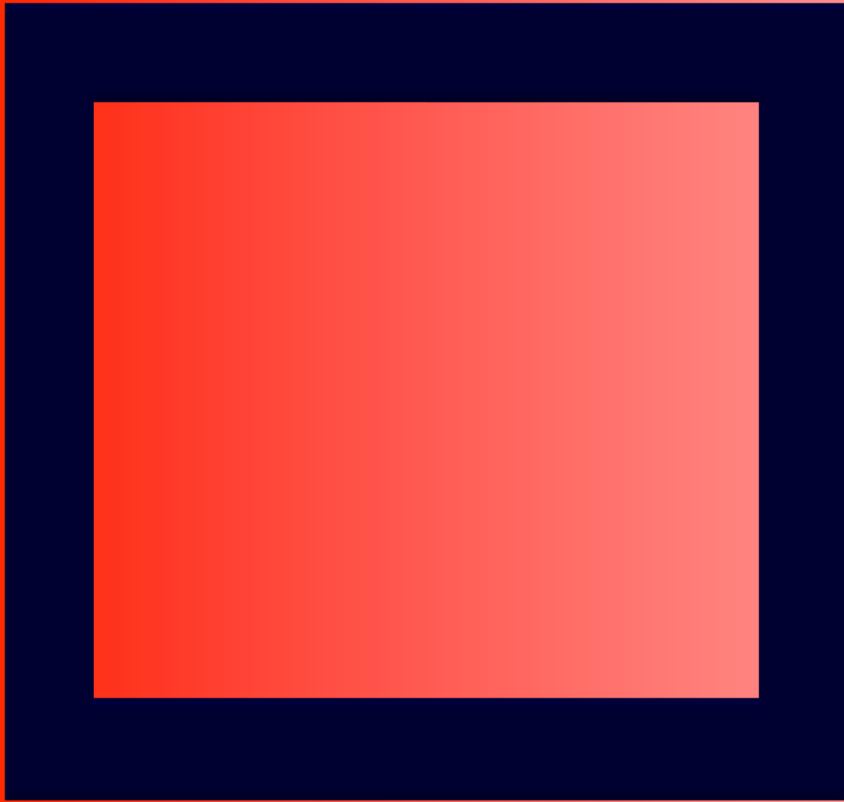
# Colour



Anne longs to do whatever she wants when she wants, which she cannot do in hiding. She wants to be able to move around freely.

Sky blue represents the outside sky and free will.

# SYMBOL



Anne can't go outside and often gets criticized for her own thoughts. Thinking "outside the box" is unnecessary – is what her life tends to say. This box represents the box Anne longs to think and be outside of.

# Image



**In this diary entry Anne talks about how much she wants her old life back. She wants her own private life back. This eagle represents the freedom Anne desires.**

# “Mindstreaming”





**Connect**  
Extend

Challenge



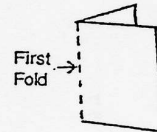


# Jigsaw Book

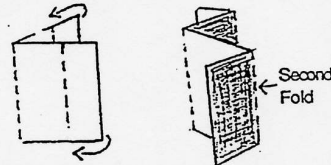
## Materials:

- 12 x 18 construction paper (any color)
- 9 x 12 construction paper (white)
- scissors
- ruler

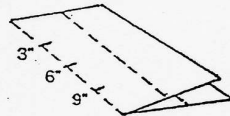
1. Fold 12 x 18 paper in half.



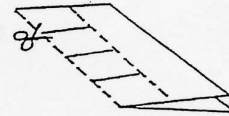
2. Fold each side in half again to make flaps.



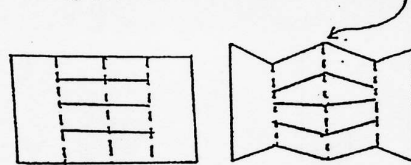
3. Lay it flat (folded in half). Measure edge of first fold into fourths. Mark at 3, 6 and 9 inches.



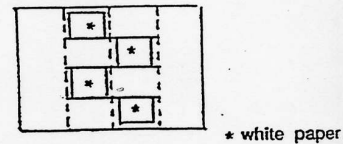
4. Cut through first fold to second fold at 3, 6 and 9 inches to make 3 slits.



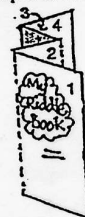
5. Lay it out flat. Be sure the center fold faces up.



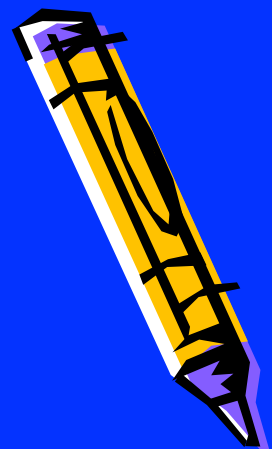
6. Cut the white paper lengthwise into 2 strips. Weave the strips through the slits in the 12" x 18 paper.



7. Fold the 12 x 18 paper in half again and fold the flaps back.



8. Gently pull the center folds apart. It will magically open up as a 4 page book. Now you can use the white parts of the book for writing and illustrating.



I used to  
think.....



But now  
I think...

**I used to think...**



*A routine for reflecting on how and why our thinking has changed*

**...but now I think...**



*A routine that sets the stage for deeper inquiry*



**think**

*What do you think you know about this topic?*



**puzzle**

*What questions or puzzles do you have?*



**explore**

*How can you explore this topic?*

A close-up photograph of a shovel digging into dark, rich soil. The shovel's blade is partially buried, and a mound of soil is being lifted. The background is a solid yellow color.

DIG  
DEEPER

*Interpretation with  
Justification Routine*



**What is going on?**

**What makes you say that?**



# Red light, yellow light



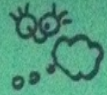
- Red – what made them stop in their reading?
- Yellow – What made them curious?
- Green – What is something new they learned?

Claim  
**SUPPORT**  
Question





# Peter Pan's shadow

Claim ?	Support 	Question ?
<ul style="list-style-type: none"><li>• Finkerbelle sees her reflection in the mirror (Daniel) because it's glass.</li></ul>	<ul style="list-style-type: none"><li>• She's moving in the mirror. (Emma)</li><li>• The mirror shows us what we look like. (Daniel)</li><li>• The mirror is the same as in my home. (Lea)</li></ul>	<ul style="list-style-type: none"><li>• Why does the glass make a reflection + how does it make a reflection? (Denzil)</li></ul>
<ul style="list-style-type: none"><li>• Shadows cannot run away. It's not real it's just for fun. (Zoë)</li></ul>	<ul style="list-style-type: none"><li>• The shadow connects to your feet. (Aziz) + everything on your body. (Denzil)</li><li>• When you move your shadow moves. (Daniel)</li></ul>	<ul style="list-style-type: none"><li>• Why does your shadow move when you move? (Zoë &amp; Daniel)</li></ul>



# Brainstorming



- Make a list of 40 uses of a plastic cup



- Do a concept map for “table” - what 10 words pop into your mind?

# Key Learnings...



# Reflections

- 1. What did I learn?**
- 2. How can I use this information?**





# RESOURCES

- Project Zero  
<http://www.pz.harvard.edu/>
- Making Learning Visible  
[www.mlvpz.org](http://www.mlvpz.org)
- Visible Thinking  
[www.visiblethinkingpz.org](http://www.visiblethinkingpz.org)

**TNT**

*Please keep in touch...*  
**kperez@stmarys-ca.edu**

