



*A New Way
Of Thinking*

David Wolff
District Coordinator of Gifted
& Talented Services
Austin Public Schools



THINKING MAPS

Today's Objectives

David's presentation on Thinking Maps

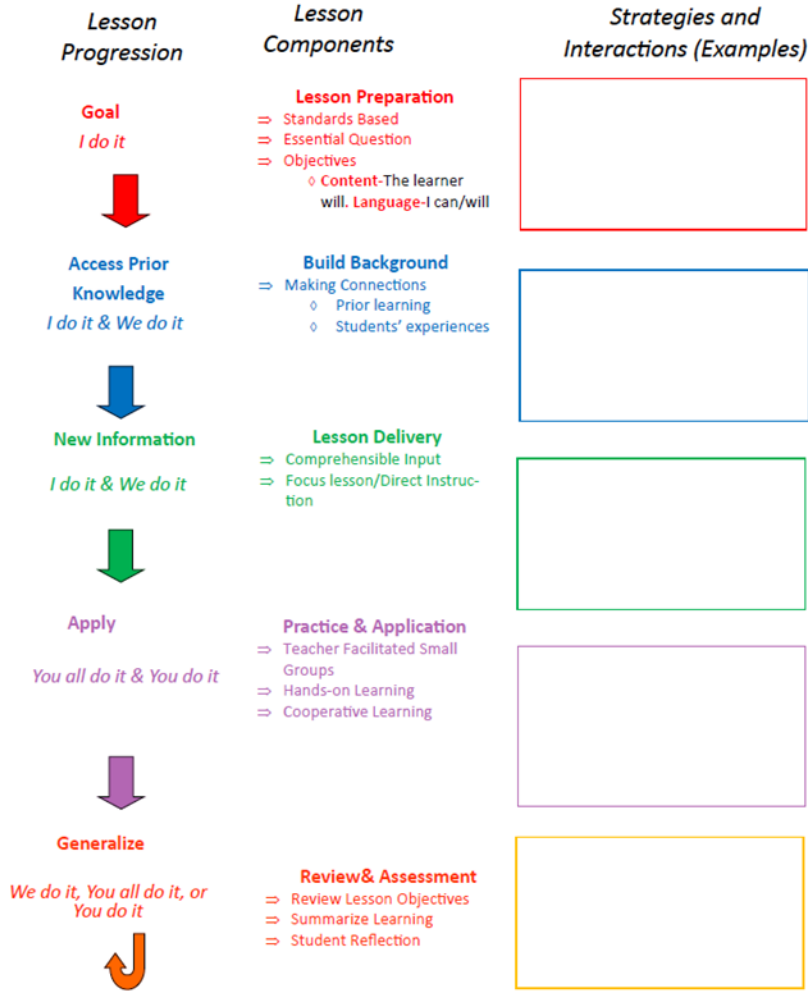
The learner will use a variety of Thinking Maps to organize their thoughts.

Learners will practice using Thinking Maps

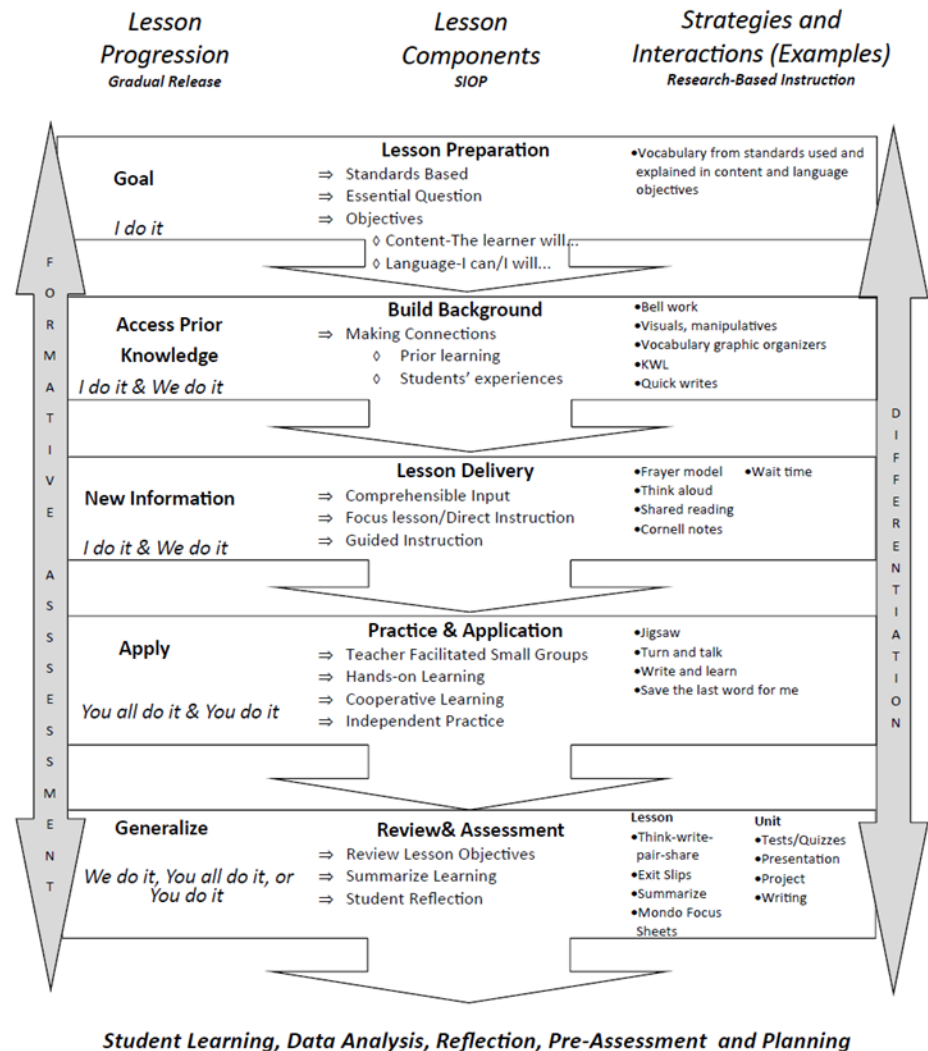
Learners will use Thinking Maps to answer questions

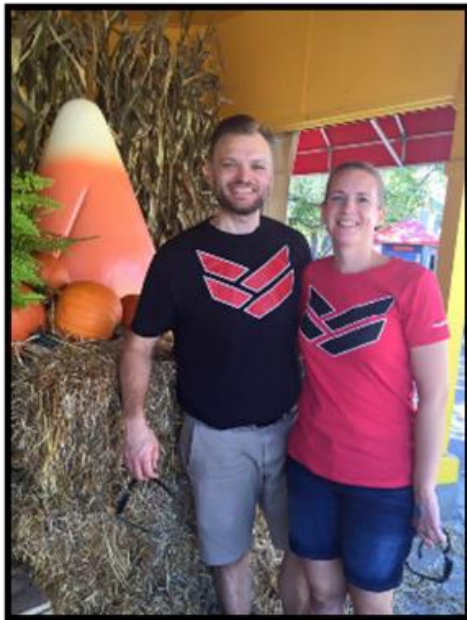
Students critical thinking will increase

Instructional Model



Instructional Model





16 years in Teaching; 10 in the classroom, 5 as District Coordinator, and 1 semester with WSU

Enjoy CrossFit, Skiing, & Running

Enjoy Baking & Cooking

Married to Melissa [BSN]

David Wolff

Father to Elliot [6th] and Chloe [2nd]

Puppy named Lizzy

Serve on MEGT Board of Directors

Mentor for MN Adult and Teen Challenge

Serve on Math Masters of MN Board of Directors

Leader for Children's Ministry at Cornerstone Church





Who are you?

Define
yourself.

Tell about your
interests/hobbies.

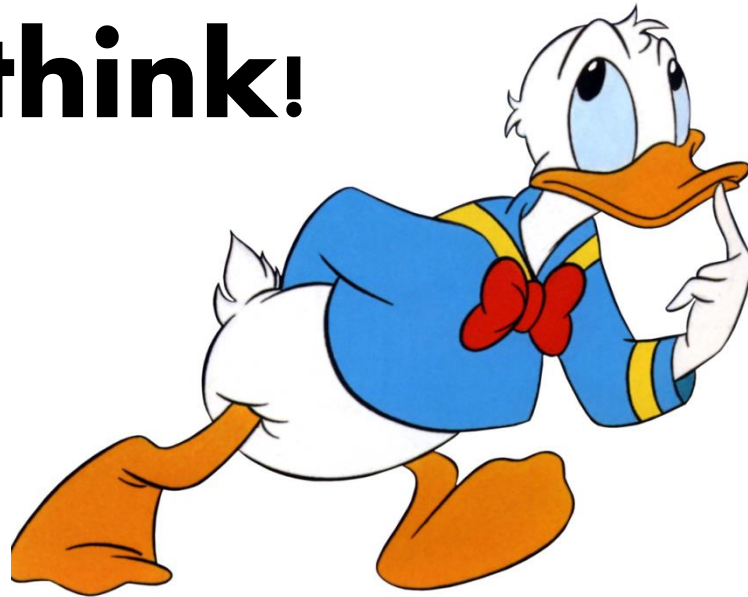
Your
Name

Tell about your
school life.

Tell about your
family

WHAT ARE THINKING MAPS?

We all think!



THINK



Defining
Thinking
Maps:

Uses Visuals Patterns
- Our Brain looks for
Patterns

Helps Students
become
independent
learners

Used by ALL
Teachers

Thinking
Maps

Based on 8 ways of
thinking

Used in ALL
subject areas

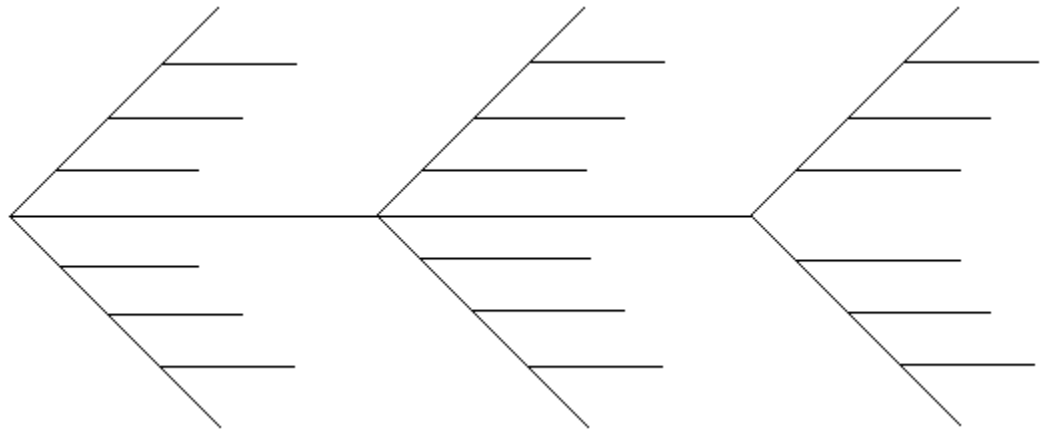
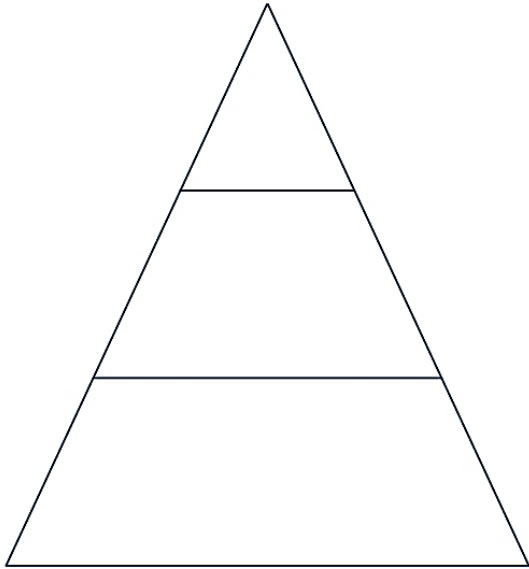
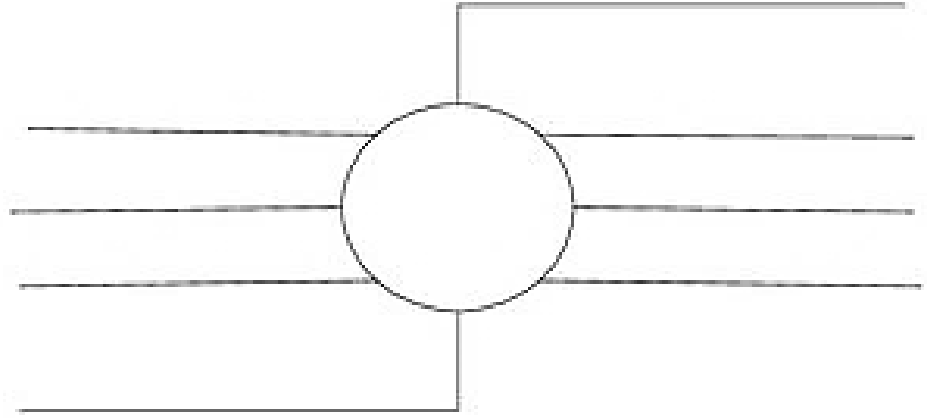
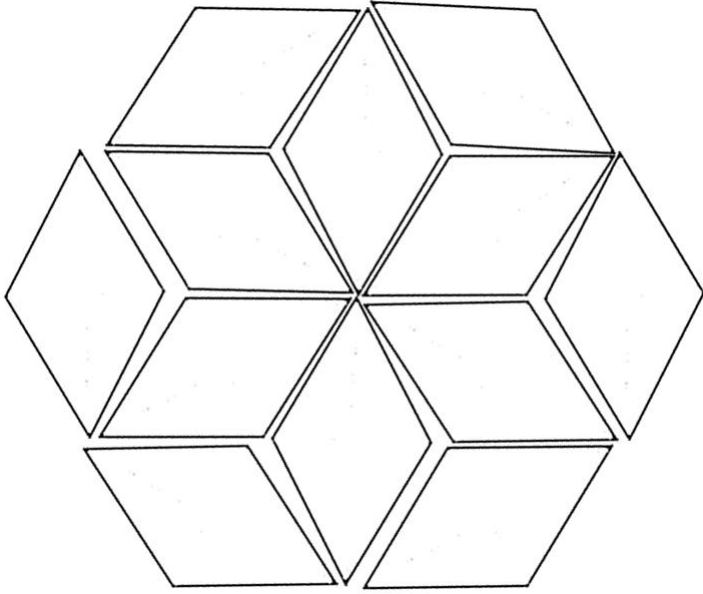
Can be combined

Not Graphic
Organizers

Brain Research

Best Teaching
Practices

How do I use these?



How do I use this?

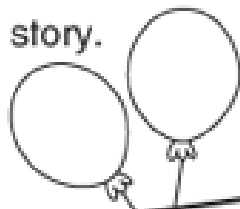
Name _____

Writing Ideas

Topic organizer

Showtime!

Plan a story.



Topic: _____

Main idea: _____

Detail: _____

Detail: _____



Bonus: Use your plan to write a story.

How do I use this?

Name _____ Date _____



Read the story. In the puzzle pieces, write the important **DETAILS** from the passage.
Then, put **ALL** of the **DETAILS** together to determine the **MAIN IDEA/TOPIC** of the passage.
*Remember, the **DETAILS** support the **MAIN IDEA/TOPIC**.*

Detail	Detail
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Detail	Detail

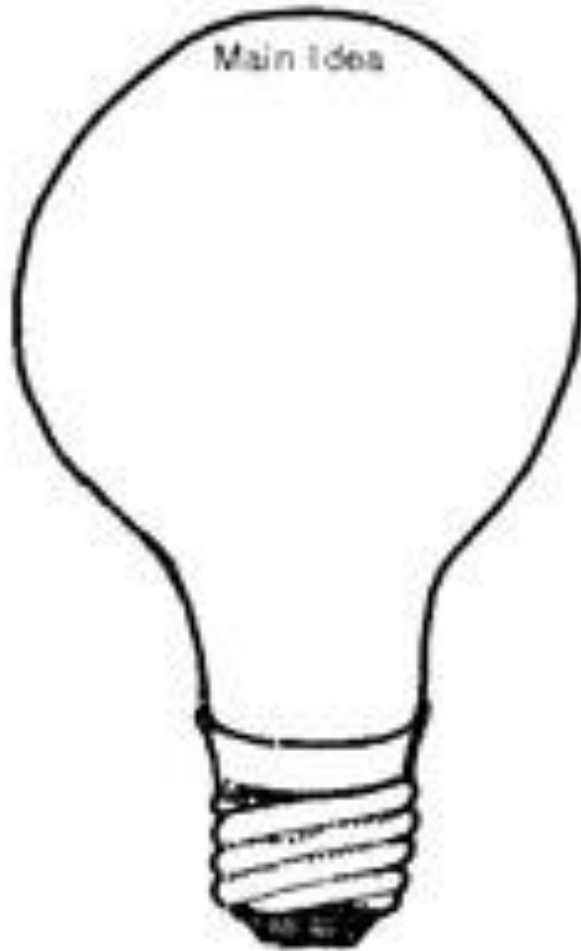
Main Idea/Topic

How do I use this?

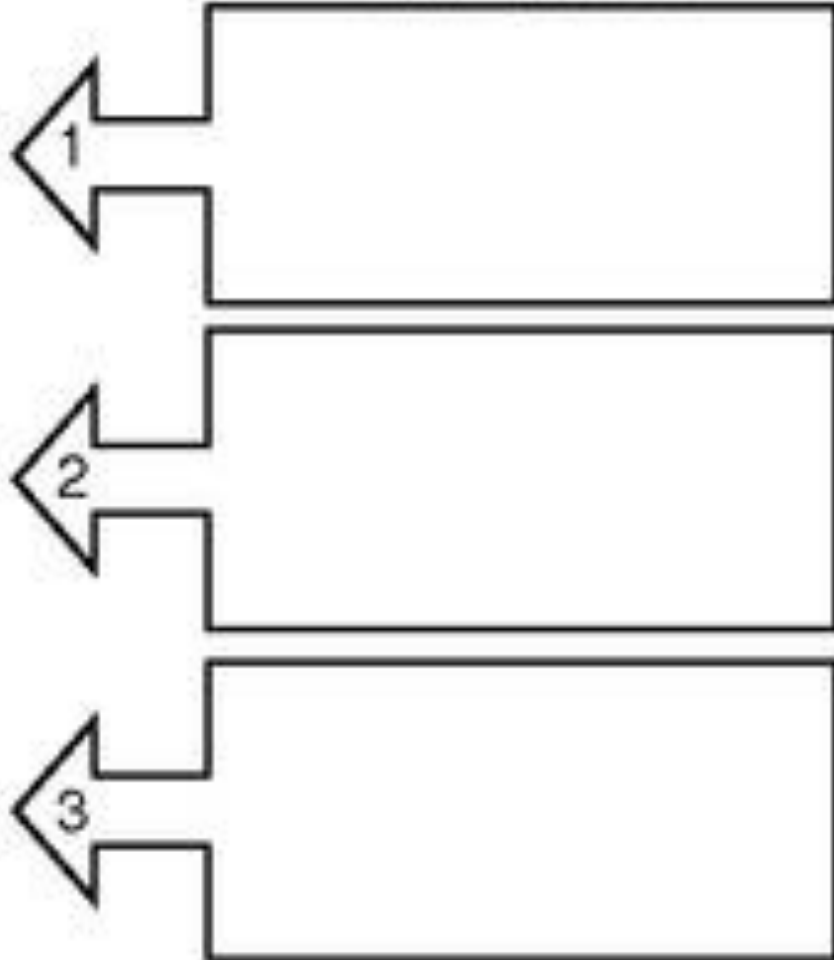
Name _____

Date _____

Main Idea with Supporting Details



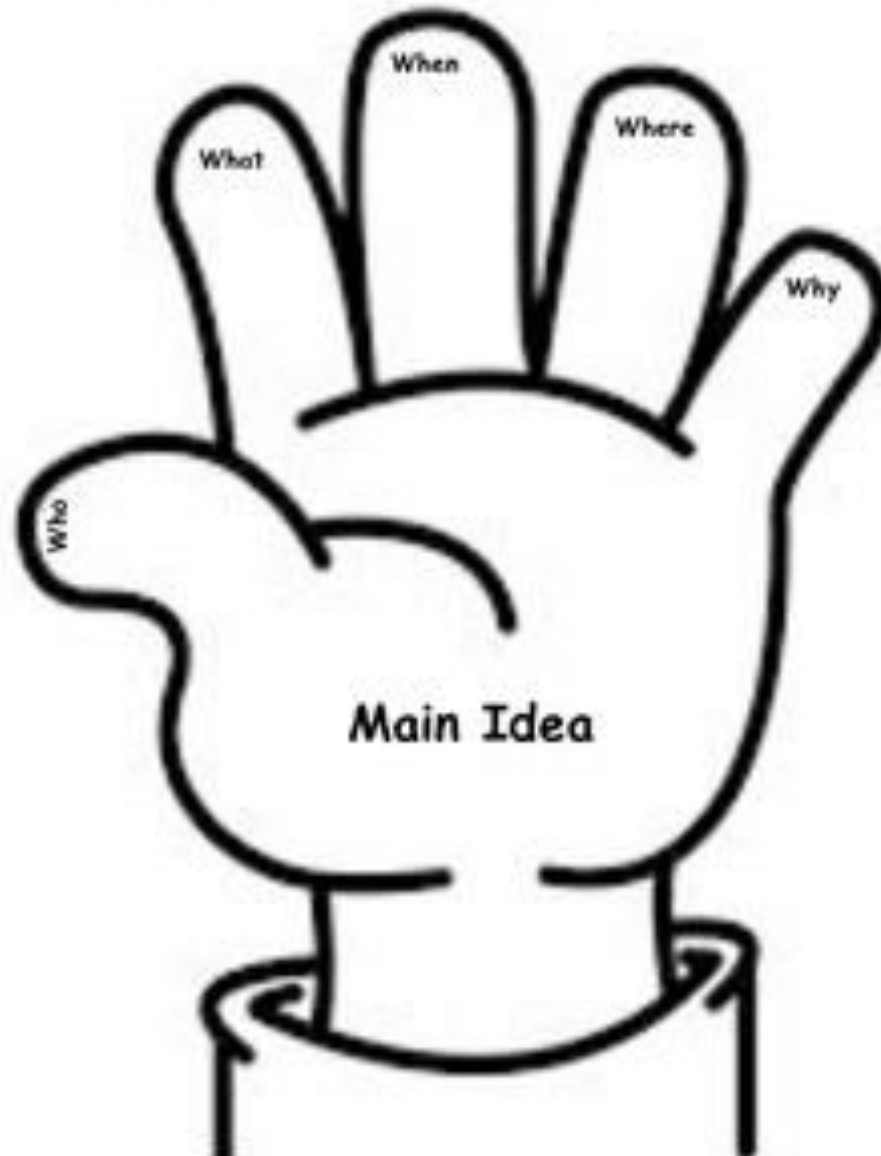
Supporting Details



Three empty rectangular boxes are stacked vertically. To the left of each box is a large arrow pointing towards the lightbulb. The arrows are numbered 1, 2, and 3 from top to bottom.

How do I use this?

Name: _____ Date: _____



Relating Factor:
Focuses on

**Graphic
Organizers**

**Thinking
Maps**

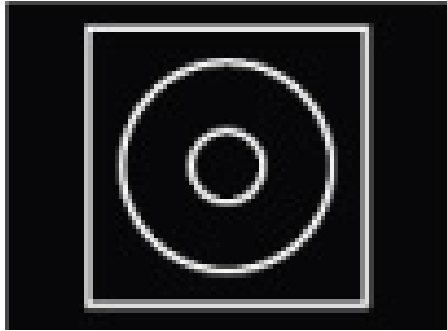
**Product or
what we turn
in for a grade**

**Process or
the first step
to help us
organize our
ideas**

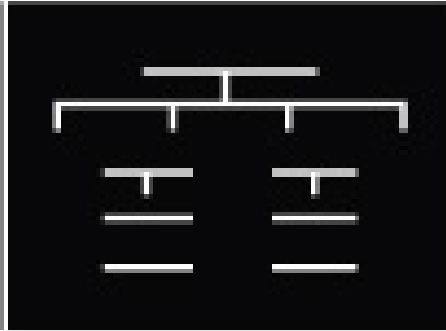
OVERVIEW OF THINKING MAPS

8 Thinking Maps

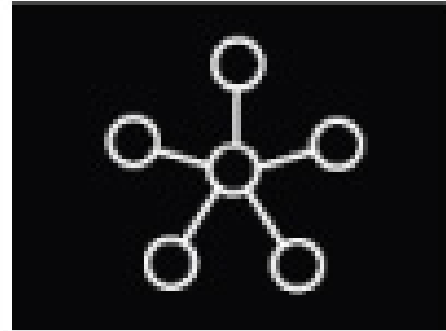
Circle



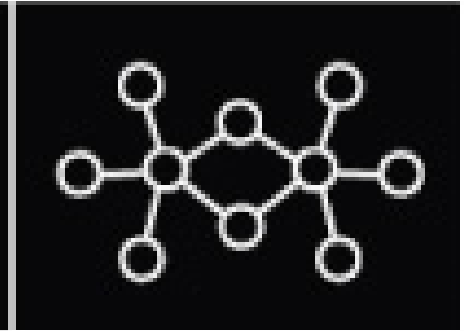
Tree



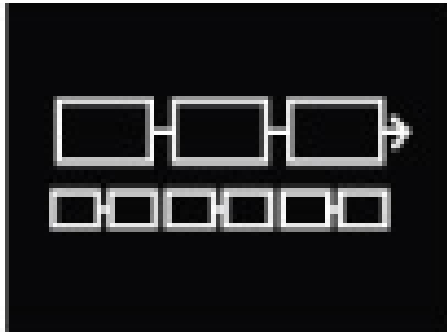
Bubble



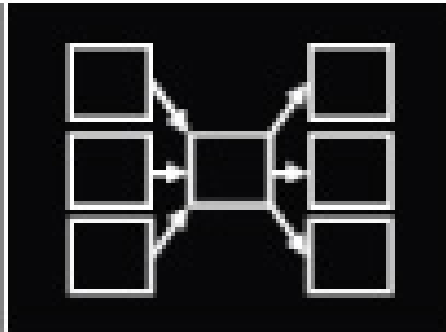
Double Bubble



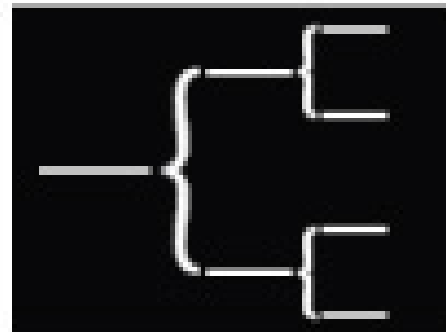
Flow



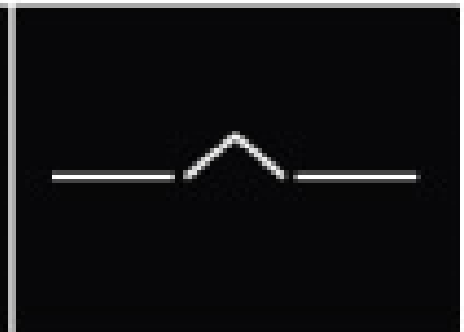
Multi Flow



Brace



Bridge



8
Thinking
Maps

Circle Map – Brainstorming or Defining a Context

Bubble Map – Describing

Double Bubble Map – Comparing & Contrasting

Tree Map – Classifying & Sorting

Brace Map – Analyzing Whole-Part Relationships

Flow Map – Sequencing

Multi Flow Map – Analyzing Cause & Effect Relationships

Bridge Map – Seeing Analogies

EXAMPLES OF THINKING MAPS

Rocks breaking down

Grand Canyon

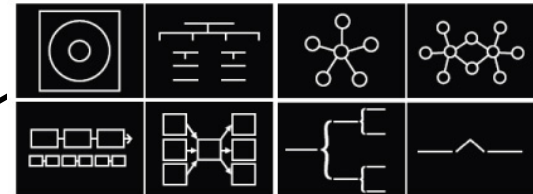


Erosion

Because of water

Glaciers, rain,
snow

Changes rocks



**WHAT INFLUENCED
MACBETH'S
CHARACTER?**

"DOOBLE, DOOBLE,
TOIL AND TROUBLE
FIRE BURN AND
CAULDRON BUBBLE"
4.1.10-11 MACBETH

"LIFE IS A TALE
TOLD BY IDIOTS"
MACBETH



"HELL IS MURKY"

"WHY SHOULD
I PLAY THE
ROMAN FOOT..."

**WHO INFLUENCES
MACBETH'S CHARACTER**

SOURCE:
(MACBETH TEXT)

Quantitative Reasoning

assign meaning to variables

using variables or "unknown"

Common core

provide clear evidence of understanding

• relate numerical representations to events

• use symbols when appropriate

identify useless info

test/question whether answer is viable

• attend to rules/properties of mathematics

Strategy choice

Strong math vocabulary (grade levels)

• express meaning of quantities

• use the correct units appropriately

units

know there is more than one way to solve

• investigate possible avenues or pathways to understand the problem.

Contextualize - explain meaning of each part

number operations

decontextualize - take important info out of problem

background knowledge

SMP #2 Reason abstractly & quantitatively

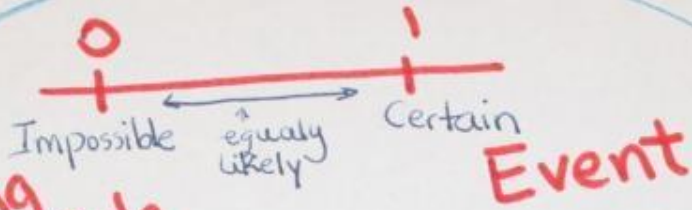
multiple strategies

Able to make future predictions
Able to justify thinking/explanations

E.Q. How do you define probability?

Internet

Previous teachers



Counting Principle



How many outfits can I come up with?

Probability

Sample space



Independent event

rolling a die



outcomes

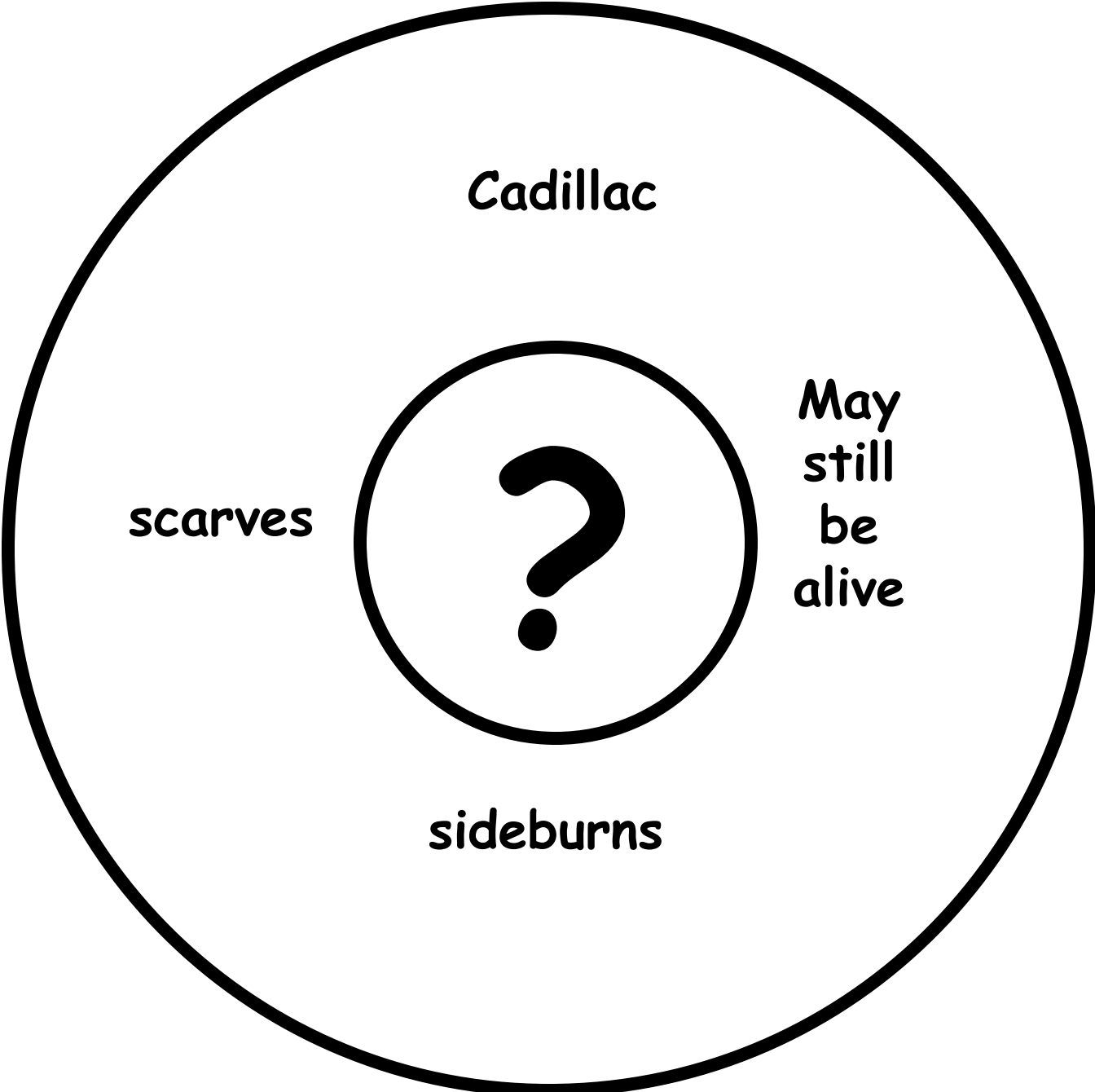
$$\frac{3}{9} = \frac{1}{3} \quad \frac{2}{9} \quad \frac{4}{9}$$



Mrs. Rogers

Text books

Math, 8th Grade



Cadillac

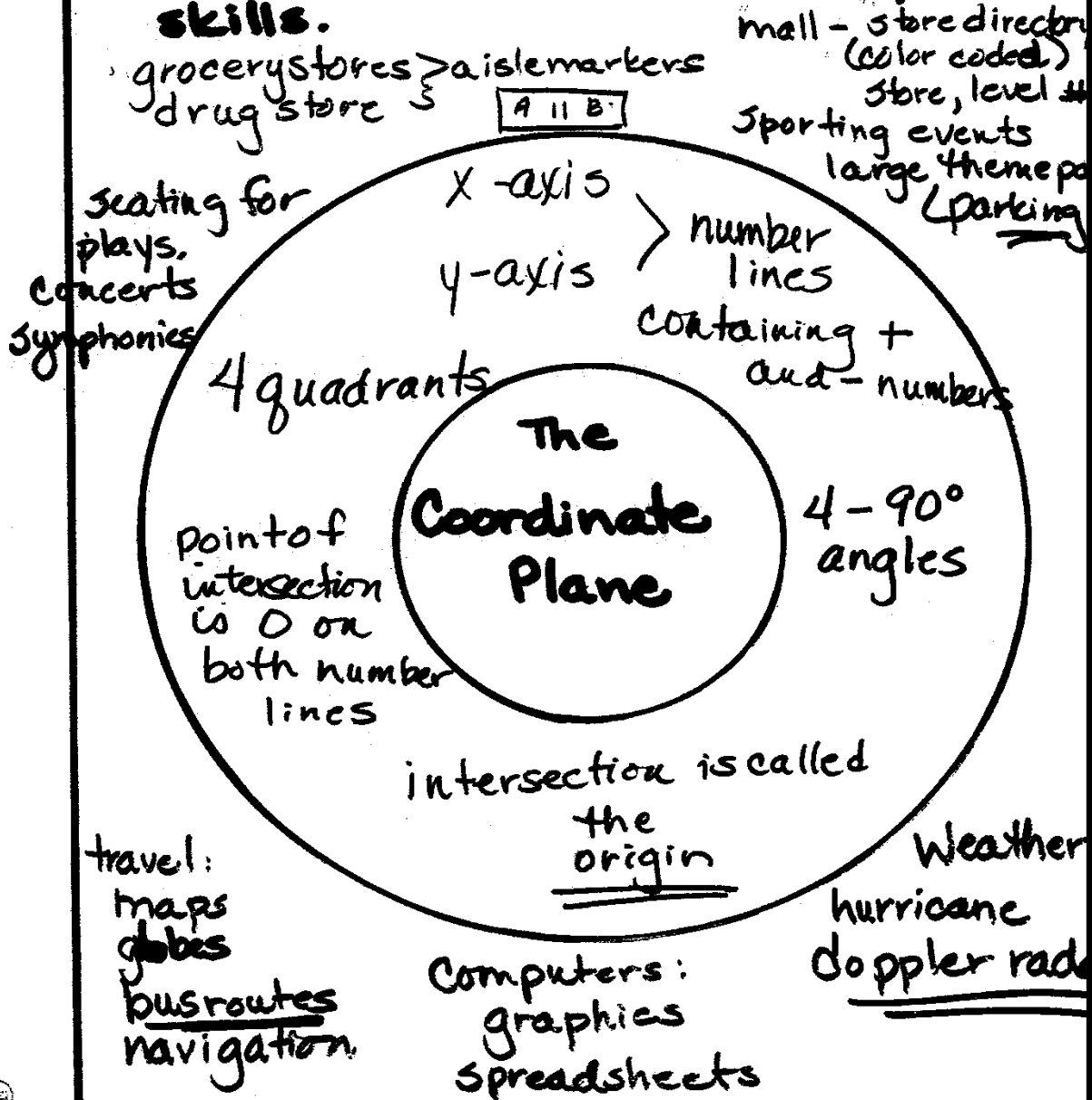
scarves



**May
still
be
alive**

sideburns

Real-life uses of coordinate plane skills.



Jmae

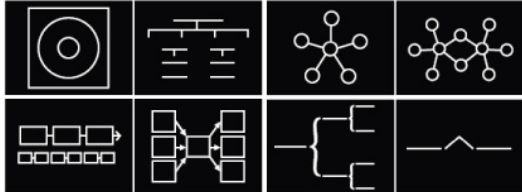
Hard

colorful

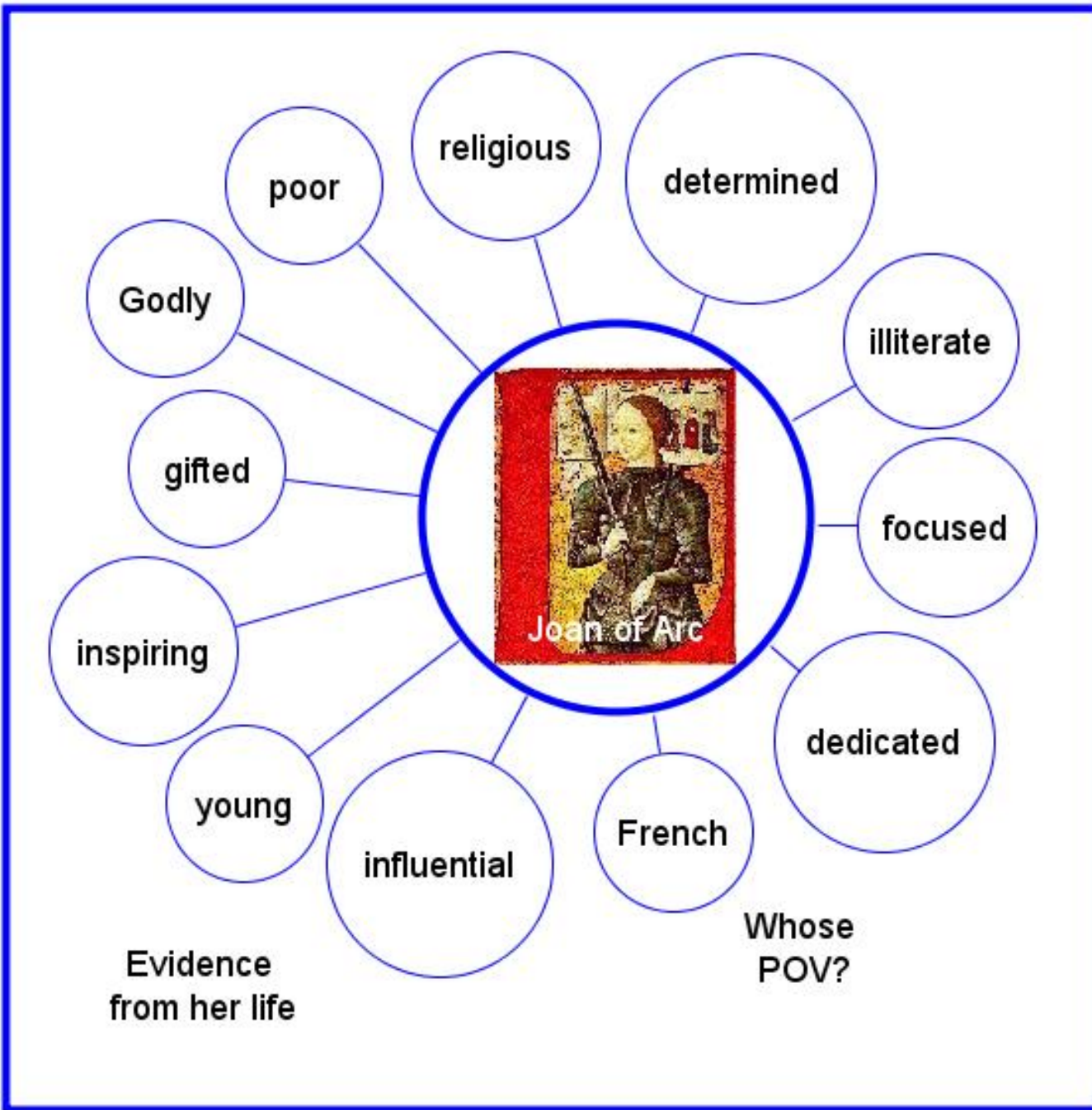
Rocks

Heavy

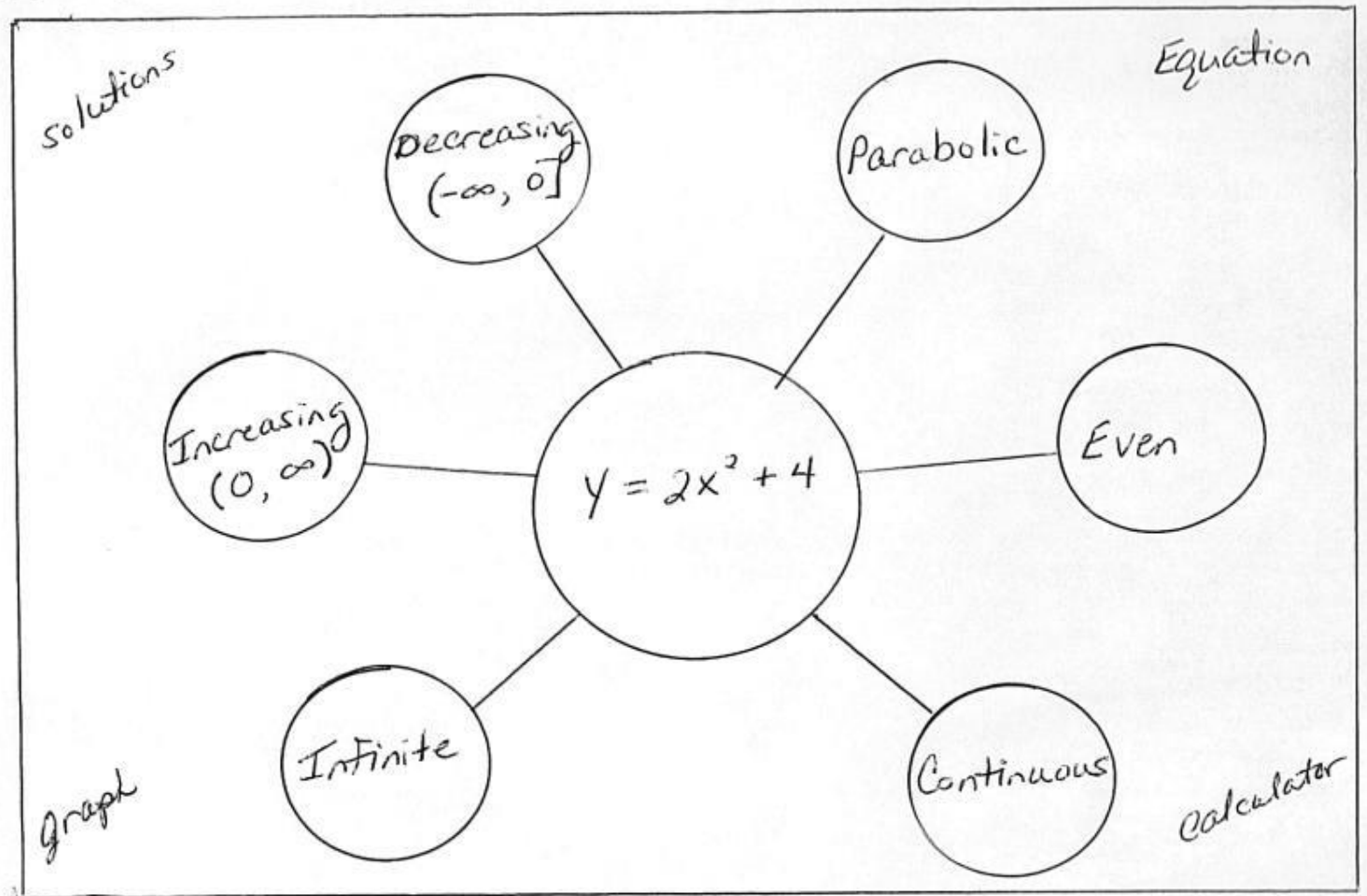
numerous



**Middle
School
Social
Studies**



Frame: How do I know this?



Advanced Functions or Advanced Math

Table Map:

Lady Macbeth

concerned
concerned

P. 65 line 3

Lady Macbeth: "Say to the king, I would attend his leisure For a few words." - William Shakespeare
(speaking to the servant)

afraid
scared

P. 8 line 52

Macbeth: "Give me the daggers. Sleeping and the dead are pictures 'Tis the eye of childhood that fears a painted devil. If he do bleed, I'll gild my face withal, must seem their guilt."

William Shakespeare

↳ Shows voice to her - winning

Fake
fake

P. 54 line 116

Lady Macbeth: "Help me hence, ho!"

(Lady Macbeth is carried out)

- William Shakespeare

good!

GUILTY
guilty

P. 106 line 50

Lady Macbeth: "Here's the smell of the blood still. All the perfumes of Arabia will not sweeten this little hand. Oh, Oh, Oh!"

- William Shakespeare

determined
determined

P. 41 line 60

Lady Macbeth: "We fail? But screw your courage to the sticking-place. And we'll not fail!"

- William Shakespeare

Lady Macbeth

**Lab
Observations**

metallic

brittle



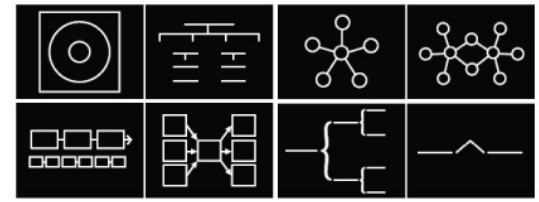
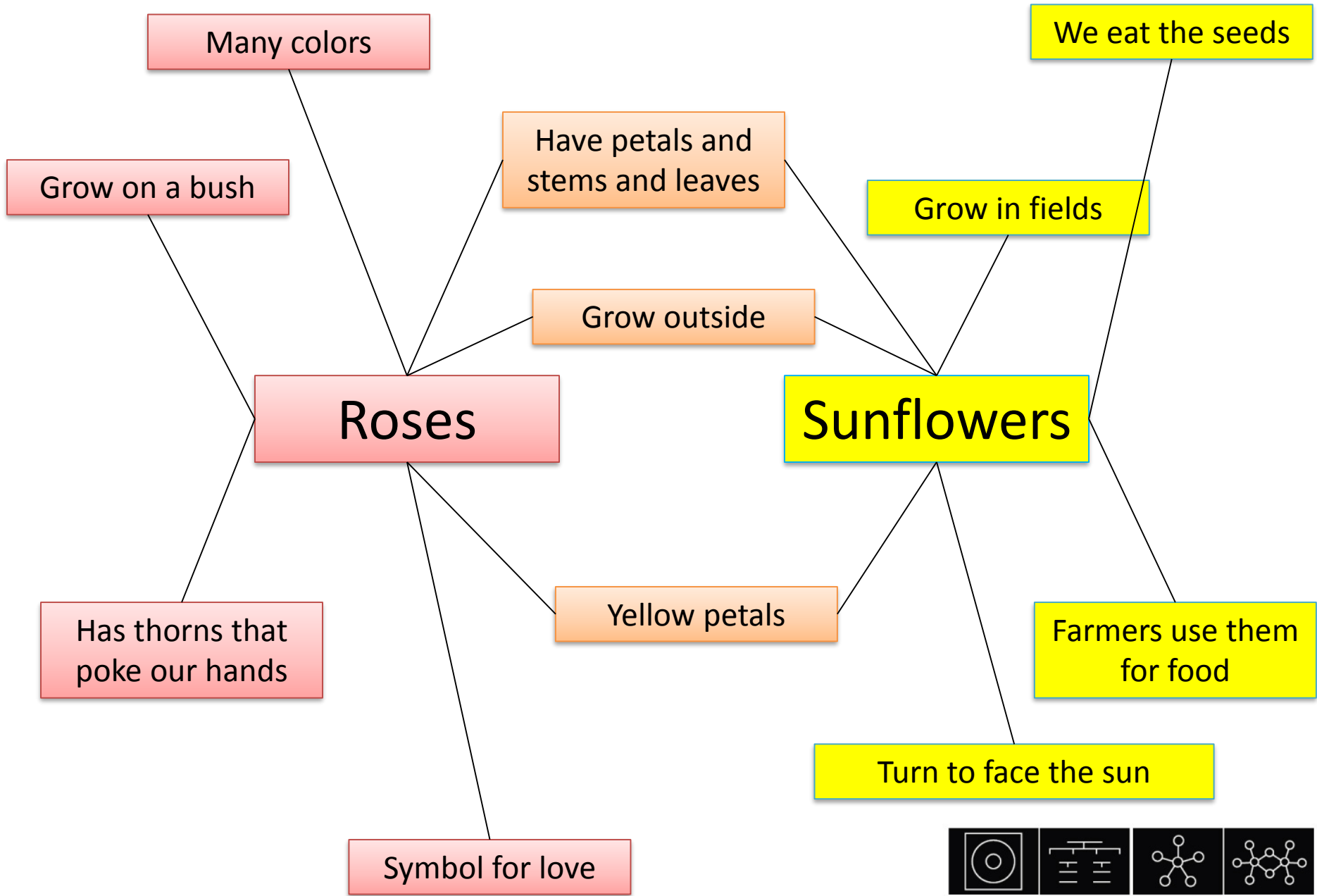
plentiful

gray

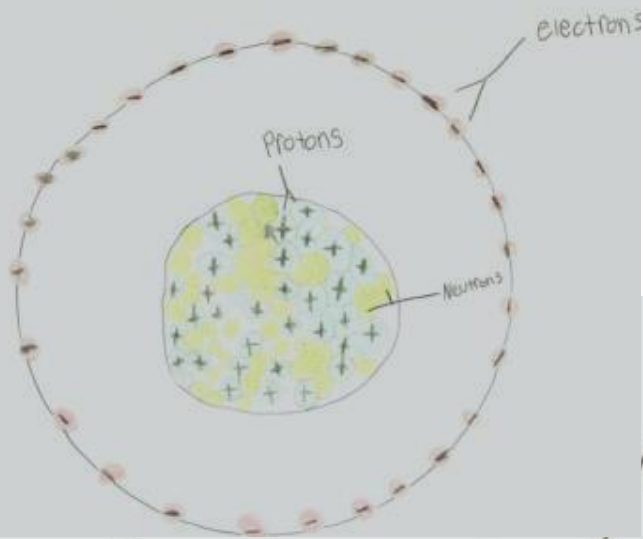
silver

**Observations
using our 5
senses**

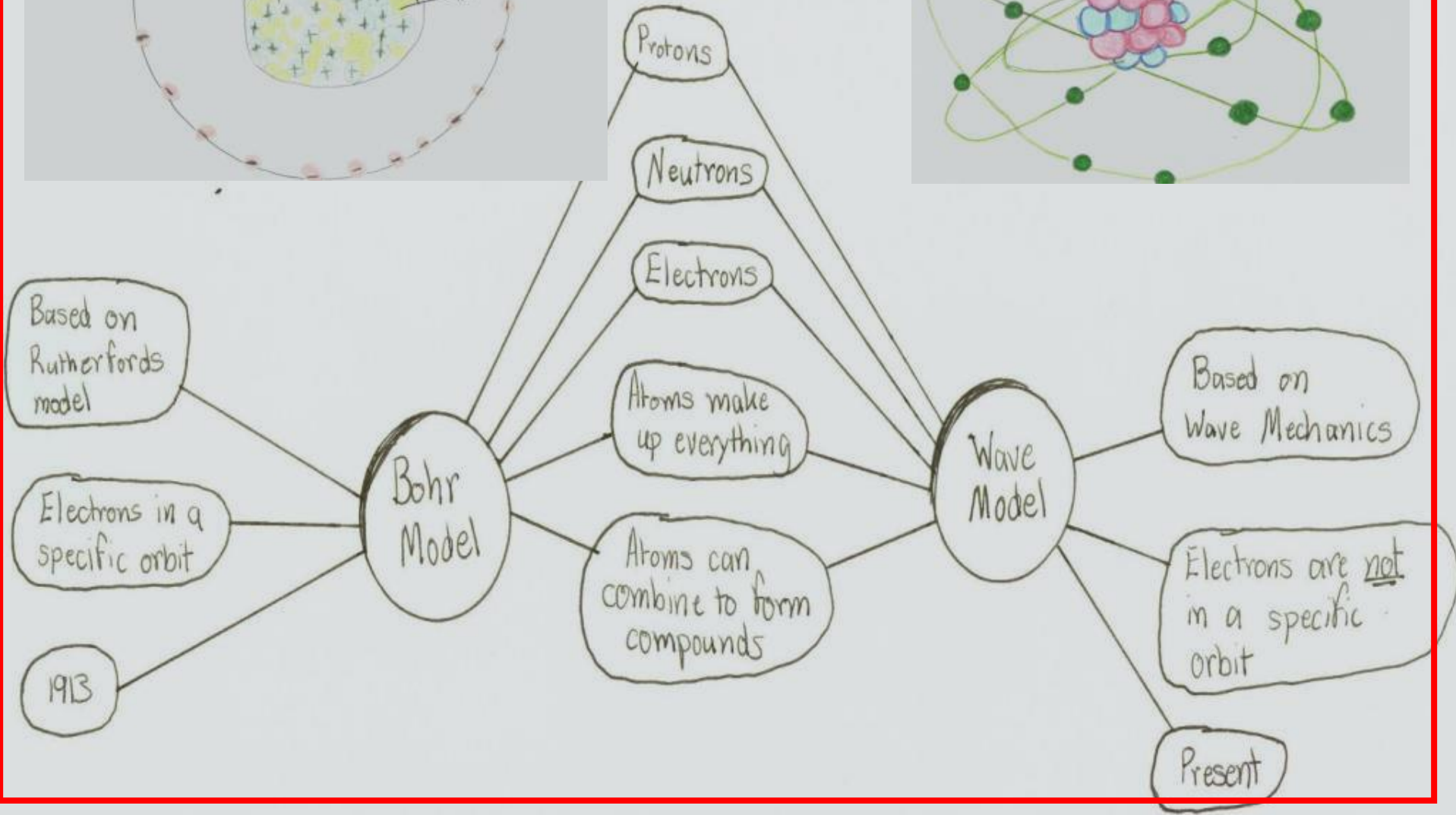
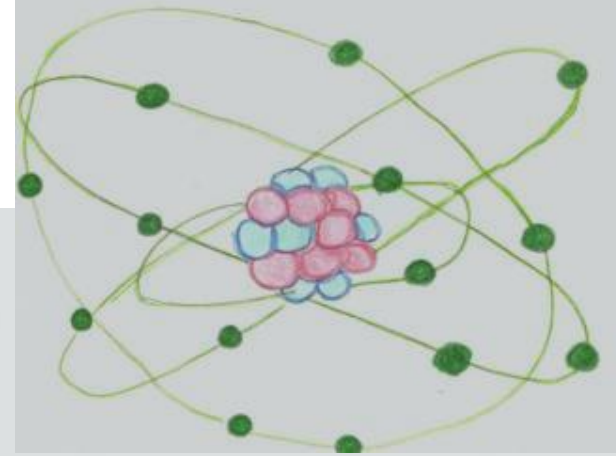
Tier 2

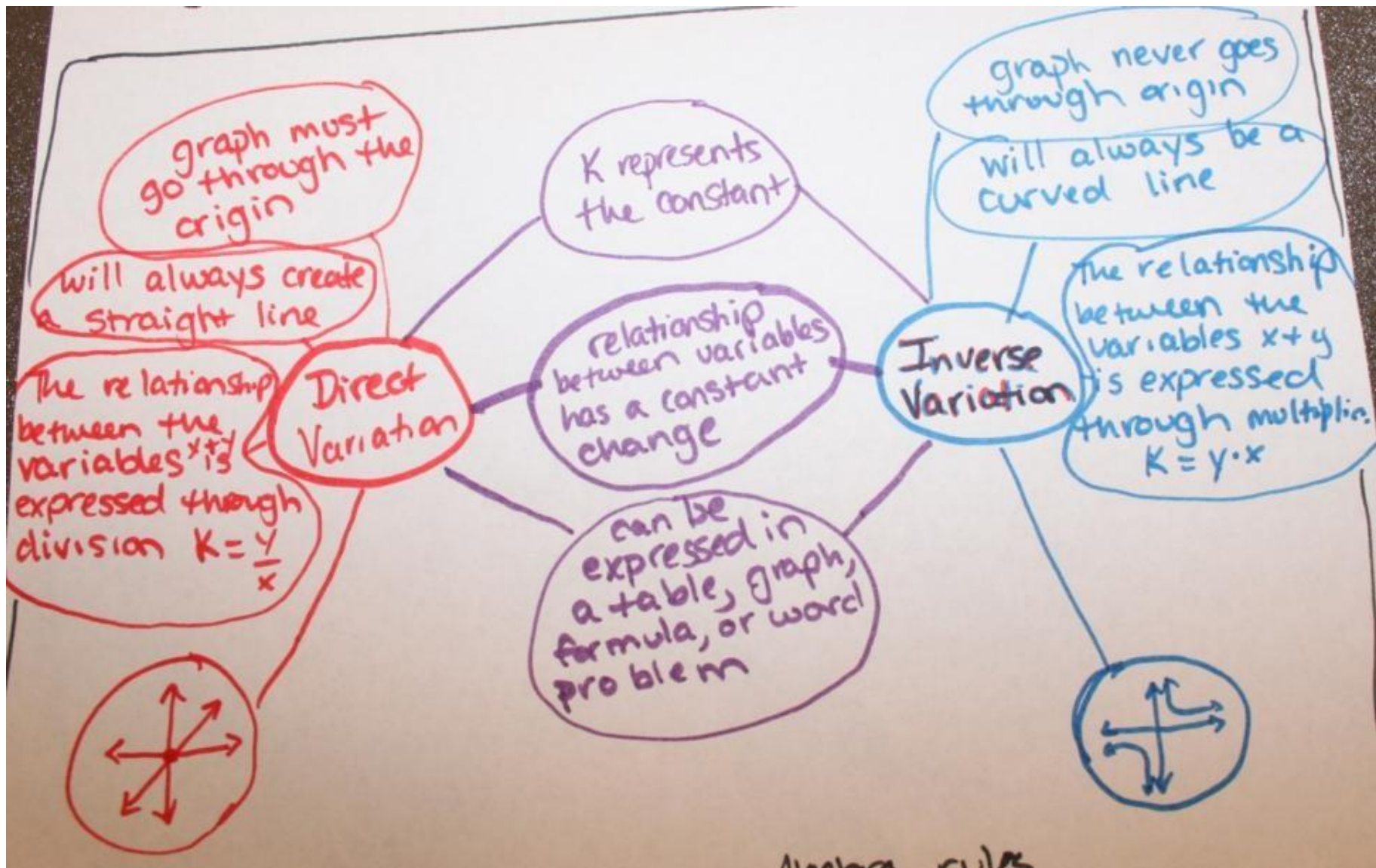


The Bohr Model

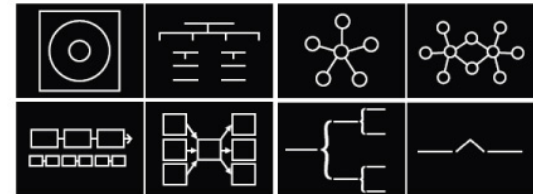
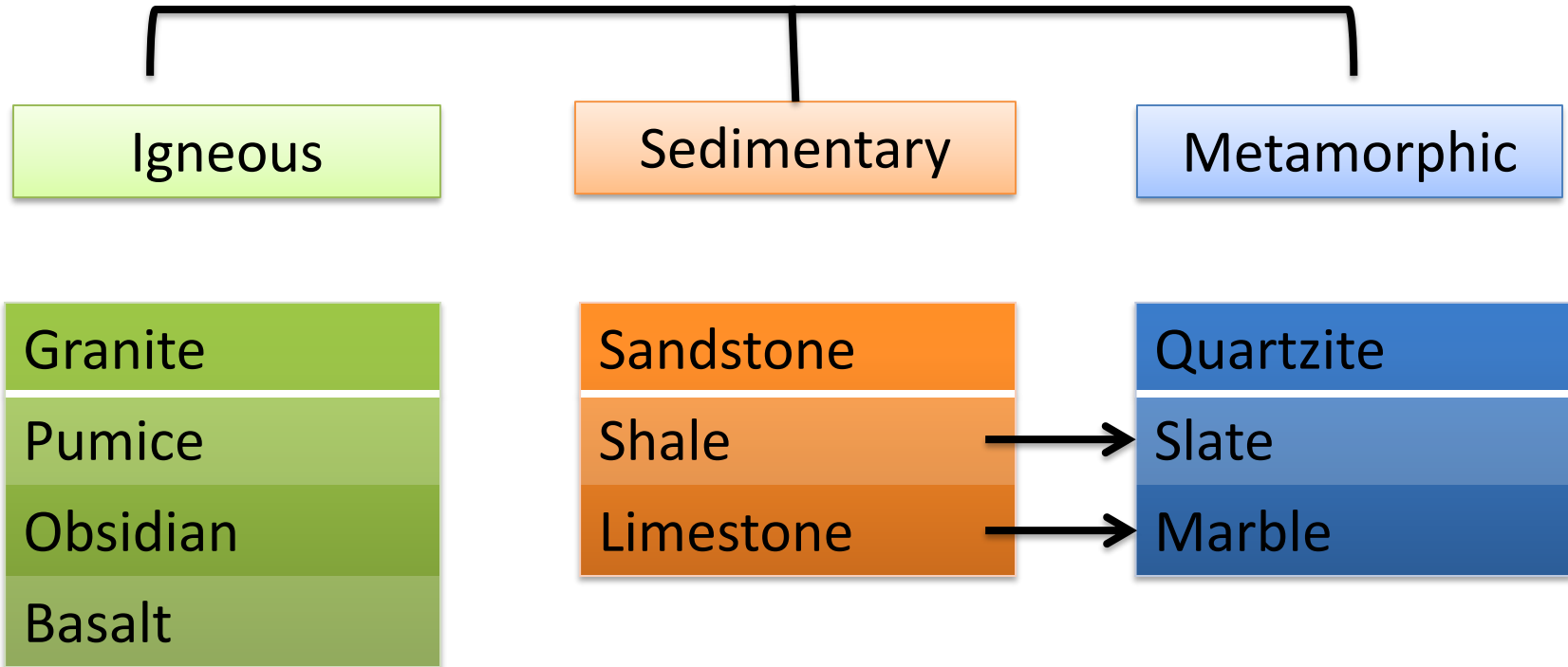


The Wave Model





Types of Rocks



Kali Cauthen
Justin Harper

Real Numbers!

Rational

2,222

$0.\overline{45}$

$\sqrt{144}$

$\sqrt{49}$

-212

0.123123...

$\frac{35}{5}$

-10

$\frac{\sqrt{81}}{3}$

-236,961

3

0.55

3.64

$\frac{42}{6}$

$\frac{\sqrt{18}}{\sqrt{2}}$

6.000

-3.25

-0.3

$\frac{\sqrt{25}}{\sqrt{49}}$

Irrational

2.364123...

$\sqrt{5}$

$-\sqrt{37}$

$\frac{\sqrt{181}}{12}$

$-\sqrt{163}$

0.31311...

$\sqrt{91}$

Types of Figurative Language



The puppy's bark was as loud as thunder.

The puppy was as guilty as a criminal.

The puppy was so happy and energetic every second of the day.

The puppy was as energetic as a wild animal.

The puppy ran like a cheetah when he chased his ball.

alliteration

The puppy with purple pants was happy.

Sad Sam sat sadly.

The puppy kept his tail to wag in the kitchen and

Look! Look! Look! Cucumbers!

The cat kept his four paws inside and paws!

Simile

The puppy is as cute as a newborn baby.

The puppy ran as fast as a road runner.

The puppy looked like a statue standing on the floor.

Puppies snore like a lion at night.

metaphor

The puppy is a silly clown.

The puppy is a gust of wind.

He is a puppy that has no heart.

The puppy is an invention.

The puppy was a lightning bolt.

hyperbole

The puppy will drink up all the water in the world.

The puppy likes me as much as I like the color blue.

You touch my foot, and I'll be angry at you. Angelic FOOT!

As the dog barked, the ground shook.

The puppy was so happy, I had to get a new dog.

The puppy yelled at the top of his lungs.

personification

The puppy's smiling brightly and dancing to the music.

The puppy's eyes had everything he needed to see.

The puppy's head bobbed and tilted.

The puppy barked at me as if I were a stranger.

onomatopoeia

Whimper

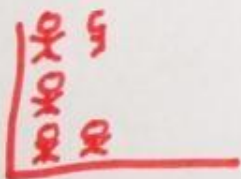
The puppy whined when he was hungry in the kitchen.

The dog gave a whimper and I knew he was hungry.

Graphs

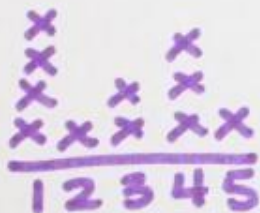
pictograph

use pictures or symbols to represent amount of data



lineplots

show frequencies of values



bar graphs

display countable data that are group in categories



line graphs

shows change over time



histogram

shows the frequency of occurrences within each interval.



M6D1c. Choose appropriate graphs to be consistent with the nature of the data.

- Math 6th grade -

Free Map

close ecological relationships between
2 or more organisms

Symbiosis

Mutualism

both species benefit

ants / acacia

+ / +

Commensalism

one species benefits, the other is unaffected

demodex / humans

+ / 0

Parasitism

one species benefits, the other is harmed

tape worm / human

+ / -

Author's Purpose

Inform

KISD back to school schedule

...

Keller ISD OKs \$156 million for 2004-05 budget

The district's tax rate could rise 1 cent this year, depending on the outcome of the bond election.

National Night Out party set for Saturday in Keller

...

Entertain

Testing out the turf



Notice!

Career Fairs

Monday, August 2, 2004 (10:00 AM - 12:00 PM)

Wednesday, August 4, 2004 (10:00 AM - 12:00 PM)

Friday, August 6, 2004 (10:00 AM - 12:00 PM)

Monday, August 9, 2004 (10:00 AM - 12:00 PM)

Wednesday, August 11, 2004 (10:00 AM - 12:00 PM)

Friday, August 13, 2004 (10:00 AM - 12:00 PM)

Reserve the Dates:
Wednesday, September 15, 10:00-4:00
Thursday, September 16, 10:00-4:00

Keller Public Library
1000 Keller Road, Keller, TX 76248
Phone: 940-361-1111

GARFIELD



Persuade

Free to visit

...

Street Sassy

OPEN JESUS!

Join us for "Open Jesus" with "Celebrating with Jesus" at 10:00 AM. It's a chance for all to worship!



10:00 AM - Open Jesus
10:00 AM - Open Jesus
10:00 AM - Open Jesus
10:00 AM - Open Jesus
10:00 AM - Open Jesus

Functions

math I

$$f(x) = x$$

Linear

Line

largest exponent is 1

x	f(x)
-2	-2
-1	-1
0	0
1	1
2	2



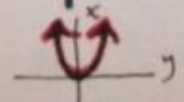
$$f(x) = x^2$$

Quadratic

U-shaped

largest exponent is 2

x	f(x)
-2	4
-1	1
0	0
1	1
2	4



$$f(x) = x^3$$

Cubic

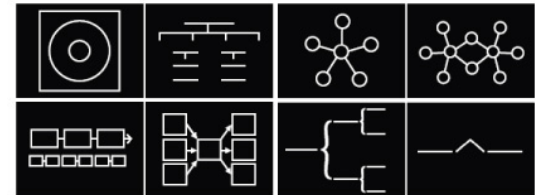
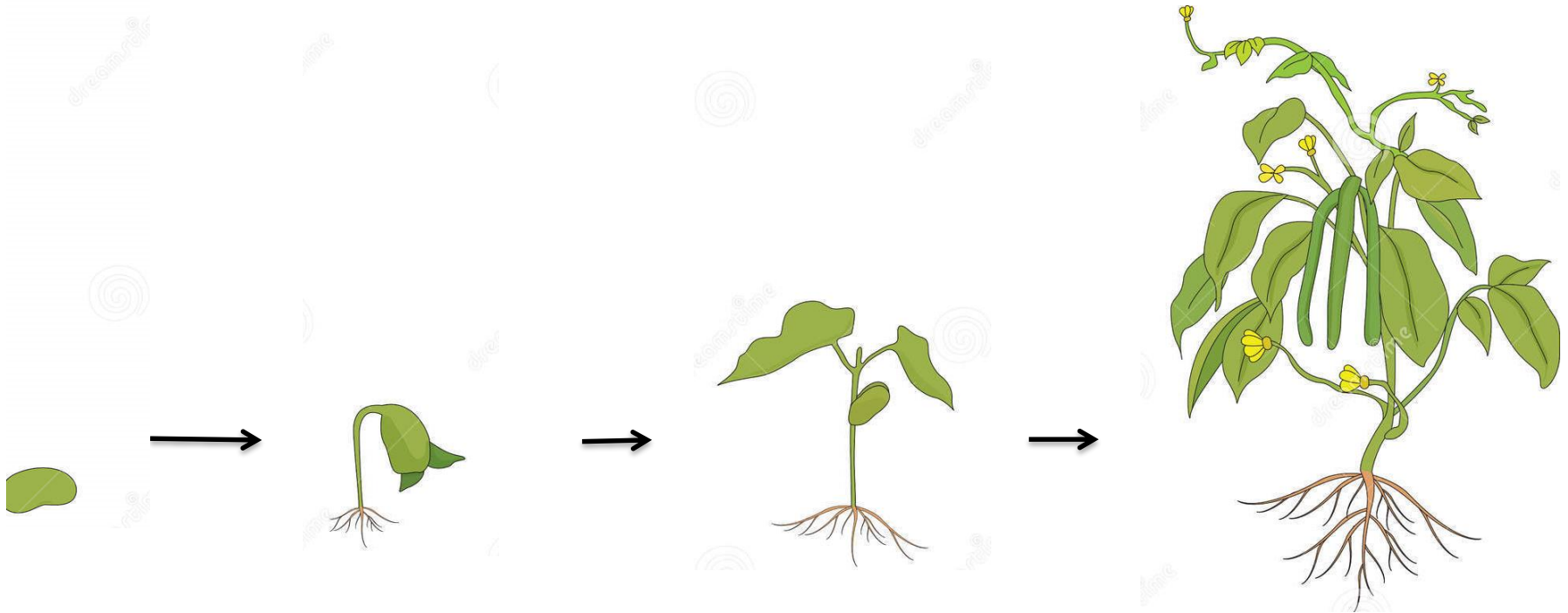
S-shaped

largest exponent is 3

x	f(x)
-2	-8
-1	-1
0	0
1	1
2	8



Plant Growth



Mitosis

Prophase



Metaphase



Anaphase



Telophase



Interphase



2.22.1

Adding and Subtracting Matrices (MATH3)

Make sure
Matrices
have the
same
dimensions

If not
can't add

Add/subtract
corresponding
entries

Pay attention
to your
signs

Resulting
Matrix is
your
answer

Matrix
should have
same dimension

$$\begin{pmatrix} 2 & -5 \\ 11 & 4 \end{pmatrix} + \begin{pmatrix} -3 & -9 \\ 14 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2+(-3) & -5+(-9) \\ 11+14 & 4+1 \end{pmatrix}$$

$$\begin{pmatrix} -1 & -14 \\ 25 & 5 \end{pmatrix}$$

$$\begin{pmatrix} 2 & -5 \\ 11 & 4 \end{pmatrix} - \begin{pmatrix} -3 & -9 \\ 14 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2-(-3) & -5-(-9) \\ 11-14 & 4-1 \end{pmatrix}$$

$$\begin{pmatrix} 5 & 4 \\ -3 & 3 \end{pmatrix}$$

Adding and Subtracting Matrices (MATH3)

Make sure
Matrices
have the
same
dimensions

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$$\begin{pmatrix} 2 & -5 \\ 11 & 4 \end{pmatrix} + \begin{pmatrix} -3 & -9 \\ 14 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2+(-3) & -5+(-9) \\ 11+14 & 4+1 \end{pmatrix}$$

$$\begin{pmatrix} -1 & -14 \\ 25 & 5 \end{pmatrix}$$

$$\begin{pmatrix} 2 & -5 \\ 11 & 4 \end{pmatrix} - \begin{pmatrix} -3 & -9 \\ 14 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 2-(-3) & -5-(-9) \\ 11-14 & 4-1 \end{pmatrix}$$

$$\begin{pmatrix} 5 & 4 \\ -3 & 3 \end{pmatrix}$$

Flow Map

act ONE I



- the three witches tell Macbeth that he's going to be a king.
- (Banquo's sons will be king)



- Macbeth becomes a war hero (Thane of Cawdor)



- Macbeth sends a letter to Lady Macbeth saying that the witches said he's going to be king!



- Lady Macbeth forcefully wants to kill the king & tells Macbeth that she's going to do the murder.



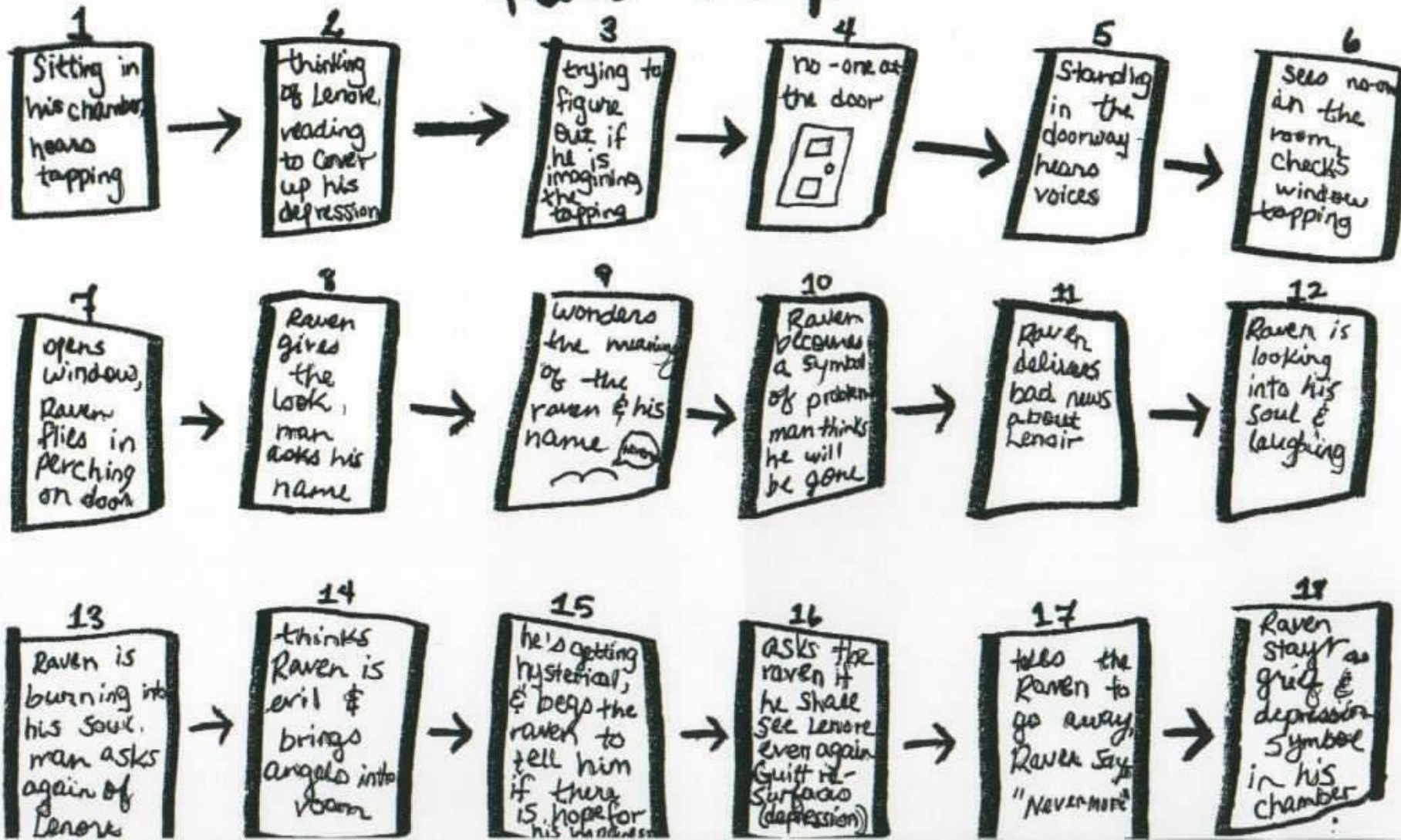
- Macbeth talks to the King about coming over to their house.

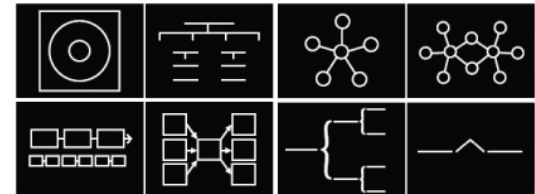
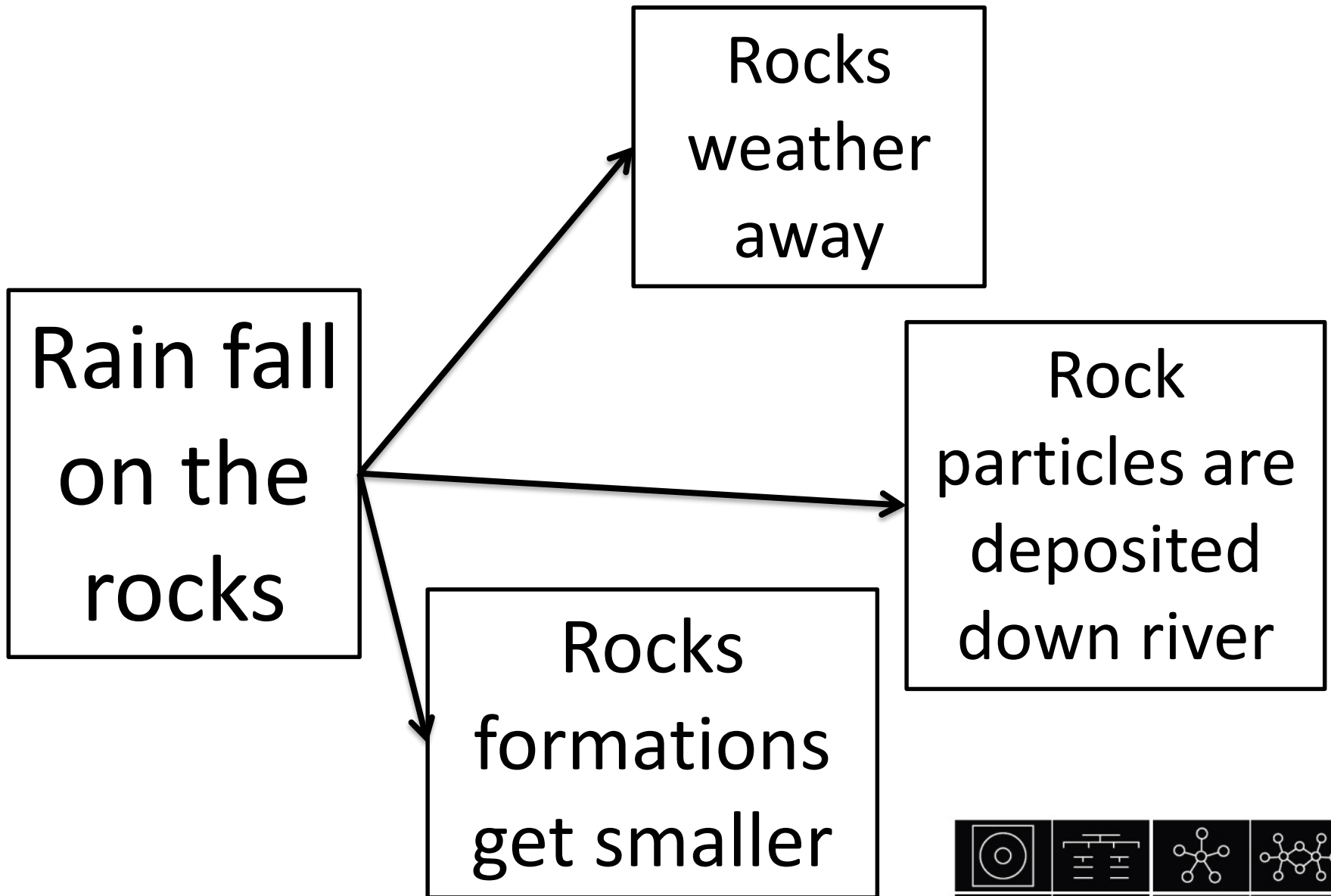


- King plans to come over!
- Macbeth's perfect set up!!

"THE RAVEN"

flow map





Lightening

Very hot and dry weather

Strong winds cause small fires to spread

people misusing matches and lighters

California Wildfires

Ashes everywhere

people have to leave their homes and things behind

Innocent people may be hurt or worse, die

Frustration

Harmful smoke and chemicals in the air

Animals die or suffer

We loose trees and grass

P.O.V. California Residents

Online References

P.O.V. Rescue workers

Time For Kids news article

Given
from the
picture
on page
p. 232 in
problem
#8

Given

$$\angle N \cong \angle P$$

$$\overline{NM} \cong \overline{PQ}$$

$$\angle NLM \cong \angle QPL$$

Angle
Angle
Side

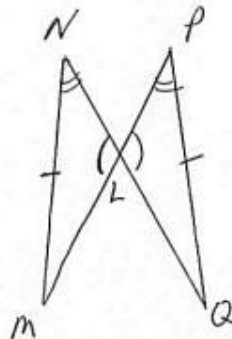
$$\triangle MNL \cong \triangle QPL$$

CPCTC

$$\angle M \cong \angle Q$$

$$\overline{NL} \cong \overline{PL}$$

$$\overline{ML} \cong \overline{QL}$$



Corresponding parts
Of Congruent Triangles
Are Congruent

Causes

- Entangled Alliances
- Arch Duke Ferdinand assassinated
- Austria blames Serbia
- Military build up
- attempted annexation of Bosnia
- Germans declare war on France
- land disputes
- Nationalism
- Militarism
- Imperialism



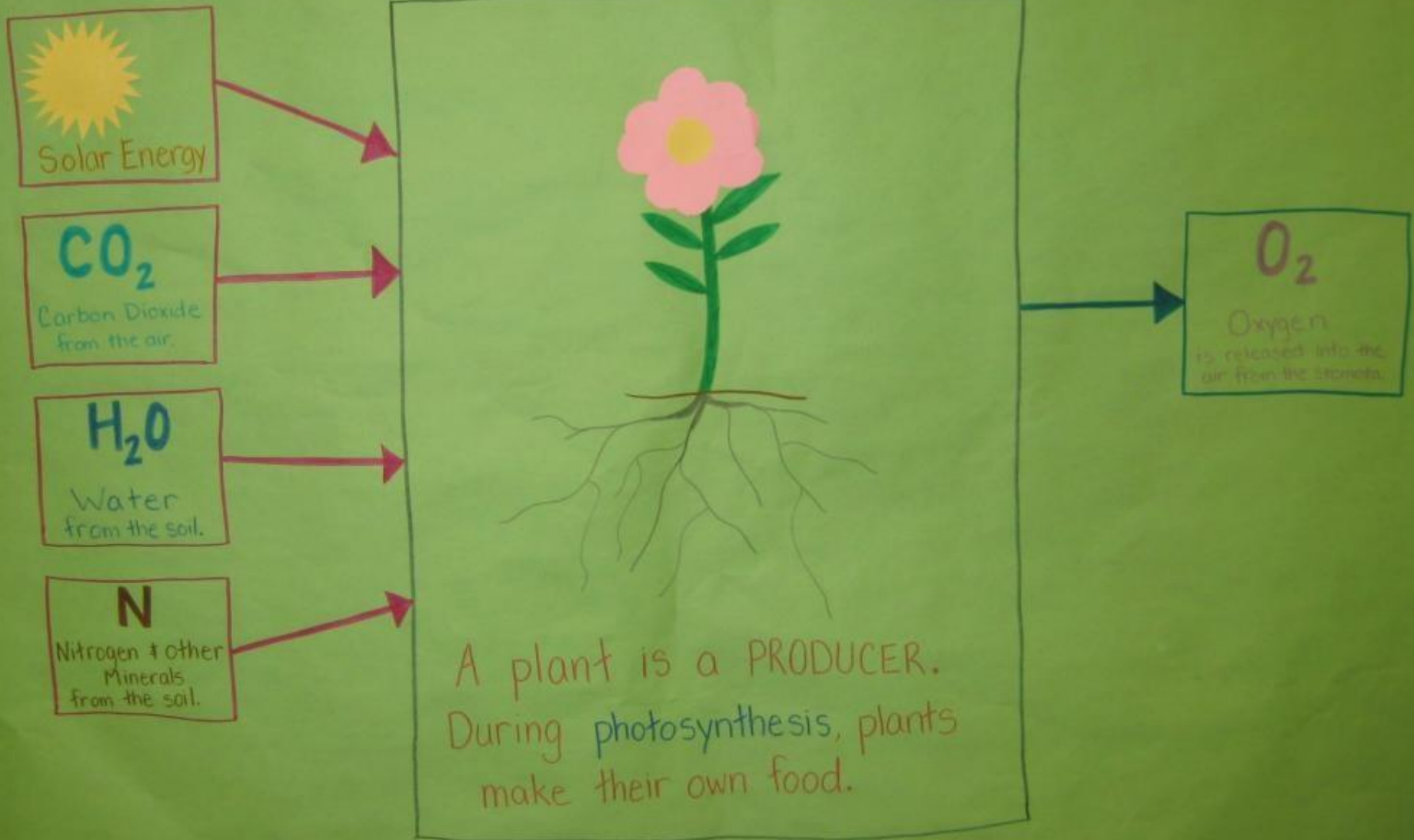
Effects

- Death of many people
- Sinking of the Lusitania
- Countries take side
- New weapons developed
- Huge trenches dug
- Use of poison gas
- Creation of the Uboat
- Boost in American economy
- Over 2 million howitzer shells were fired
- The Great Depression

We watched a video.



Photosynthesis



Causes and Effects of the Industrial Revolution

Causes

America was no longer relying on cheap British supplies. We needed more factories.

Science was popular and developed. So, ideas were born.

There was a demand for machinery such as trains. To produce trains, factories are needed.

Everyone had the opportunity to succeed. This gave ideas another chance.

Revolution

Industrial Revolution

The successful people became rich and famous.

Life was much more convenient with all the inventions.

In the Civil War, the Union had an advantage in the factories.

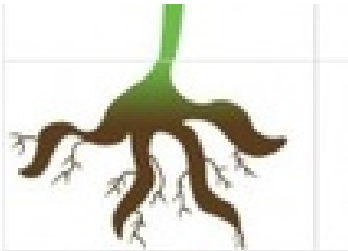
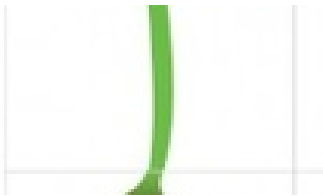
America became more advanced in technology.

A Flower

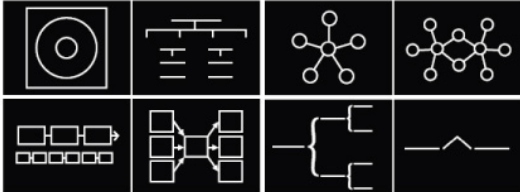


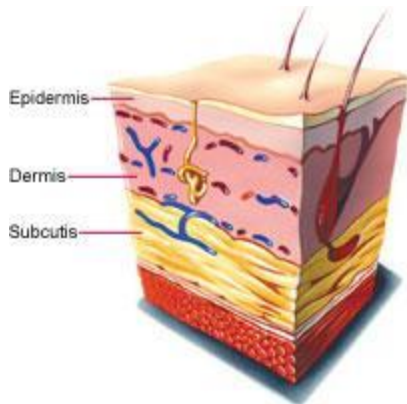
Petals

Pollen



Created by 201





epidermis

**epi
(top /
outer)**

**derm
(skin)**

is

Add the
meaning of
each part in
parentheses.



cornea

pupil

iris

lens

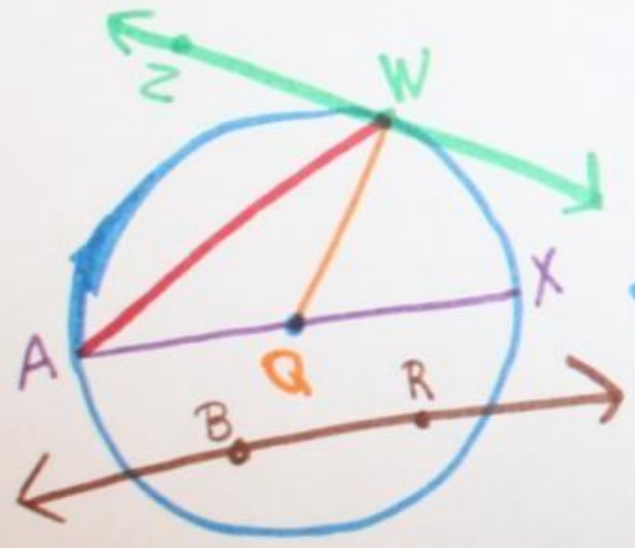
retina

rods

cones

optic
nerve

Math II circles

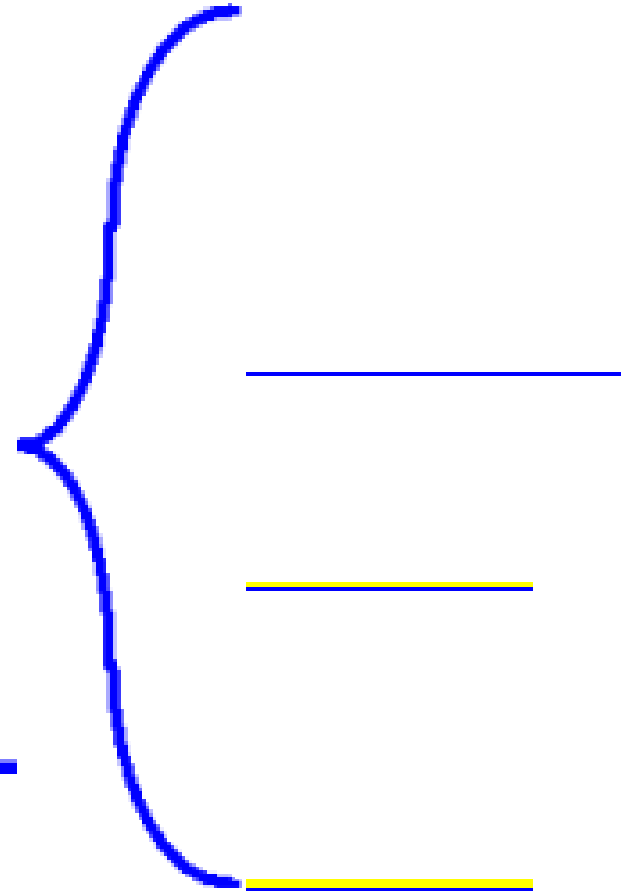


- diameter \overline{AX}
- Tangent \overleftrightarrow{ZW}
- Radius \overline{QW} \overline{QX} \overline{QA}
- chord \overline{AW} \overline{AX}
- Secant \overleftrightarrow{BR}
- Central $\angle WQX$
- Inscribed $\angle WAX$
- Center Q
- arcs \widehat{AW} \widehat{AWX} \widehat{AXW}

We need to know how to convert % to decimals.

We could use 10%.

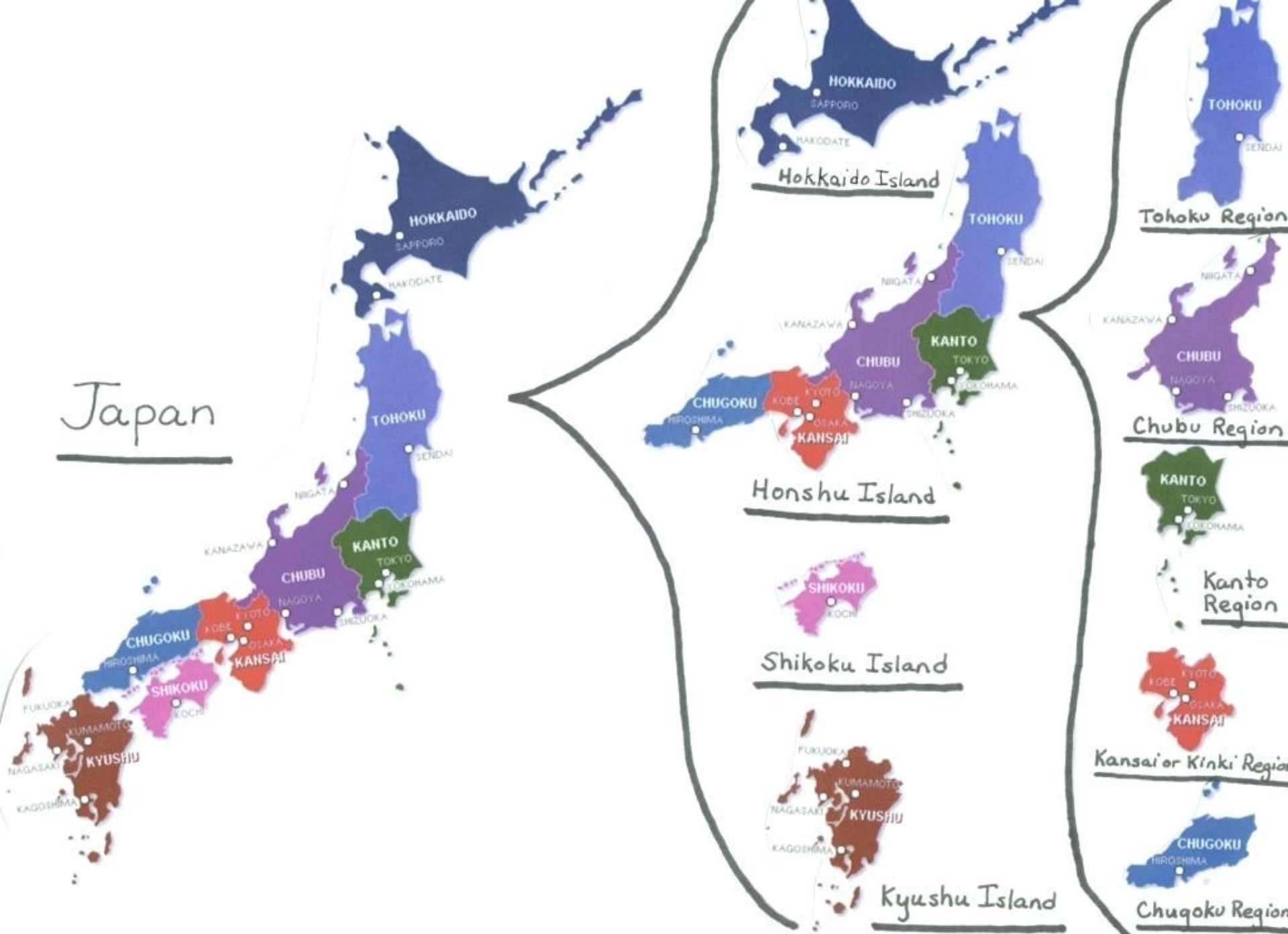
A vice president took a client to lunch. The lunch cost \$44.00. She left a 20% tip. What was the total cost of the lunch?



We have to know that this is a two step problem.

We need some prior knowledge about what a “tip” is.

Japan



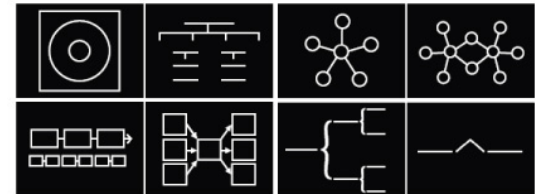
Relating Factor:
is part of

Petals

Head

Flower

Body



Music Champion

Solfege Hand Signs



ust
ike

Just
like

do



Just
like

re



Just
like

ti



fa

**USES
ARGUMENTS
TO**

Relating Factor



ARGUMENTS ARE REASONED, LOGICAL, AND INCLUDE EVIDENCE.

Vocabulary Development



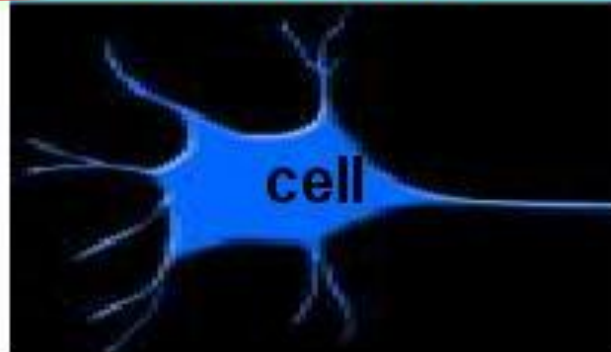
mitochondria



as

powers

Relating Factor





AP Photo

www.behindthesceneshistory.com

**was a
catalyst for**

Relating Factor

**Rosa Parks'
refusal to give
up her seat on
the bus**

as

?

**Civil Rights
Movement**

?

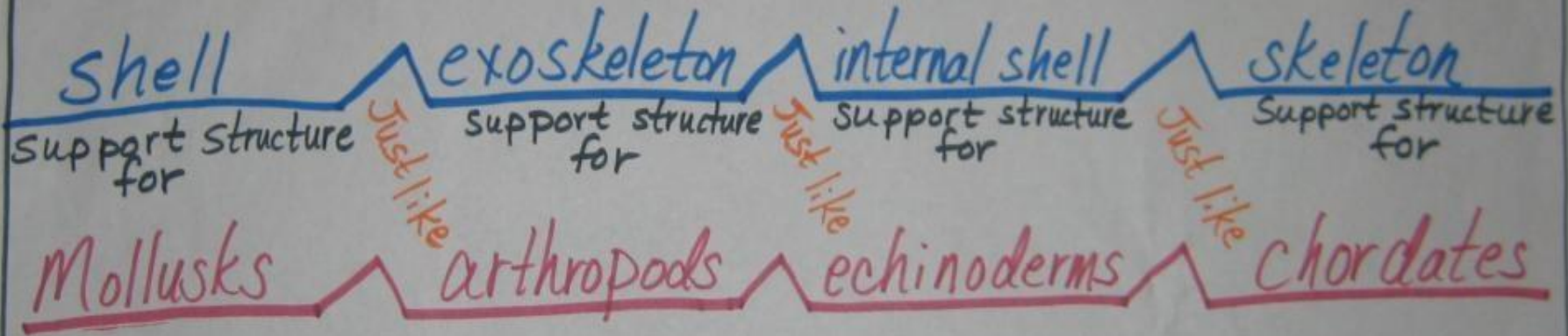


**Major events in history are
often have “trigger” causes.**

Support structure
relating factor

Spicules
Support structure
for
Sponges

Just like



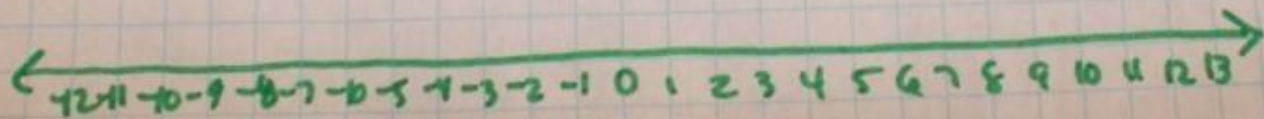
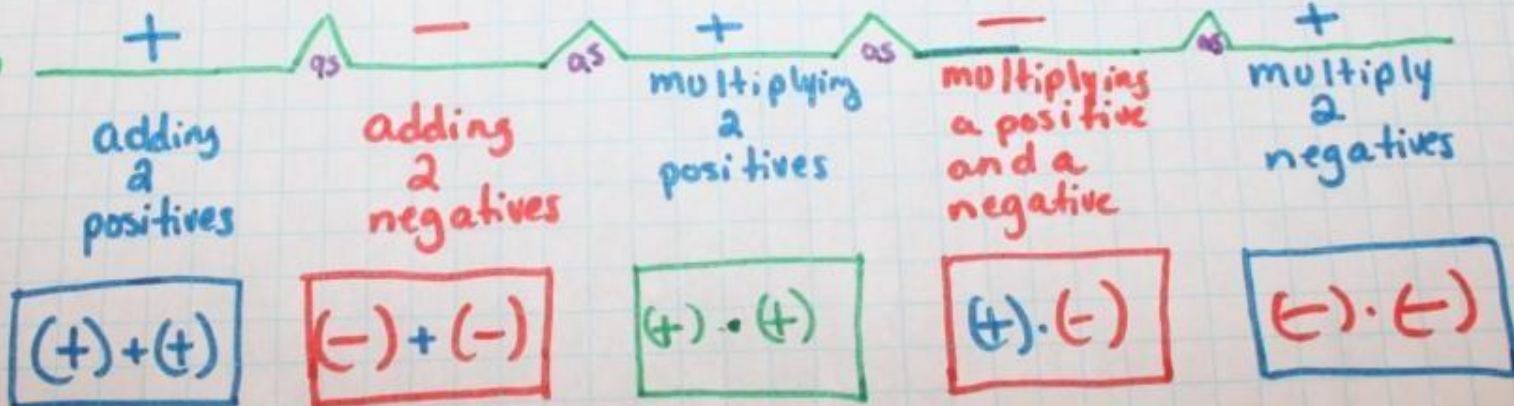
Understand support structures in animals

simple → complex

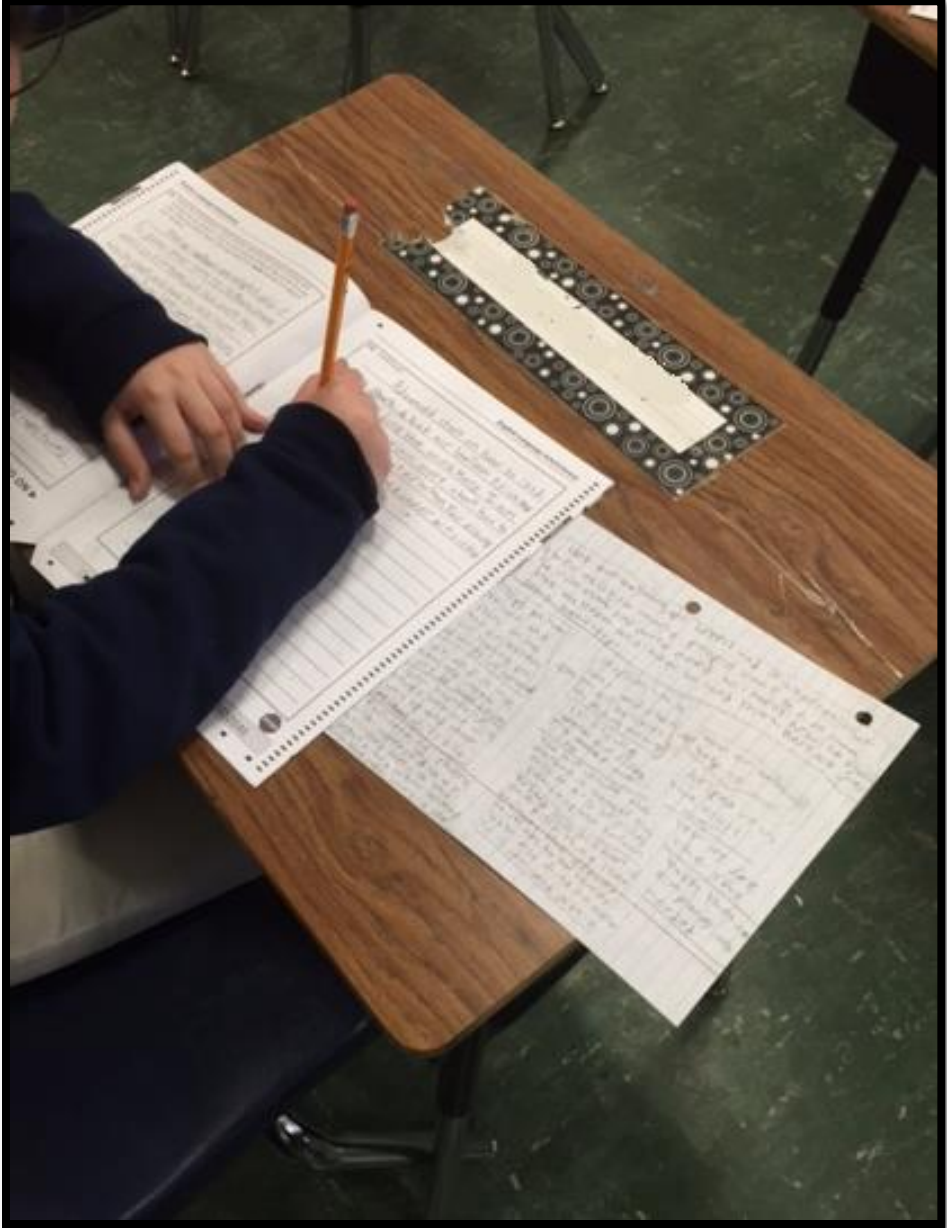
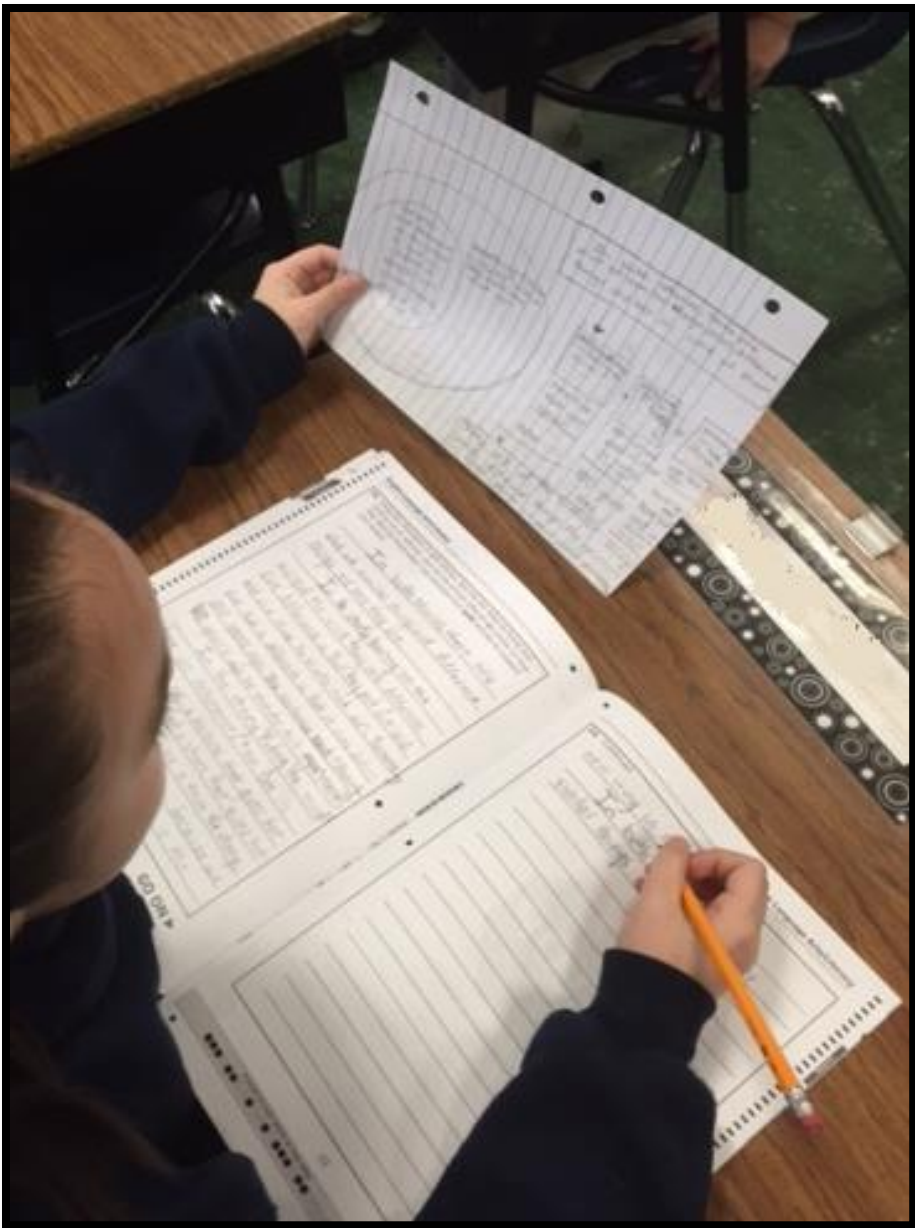
Rules For Integer Operations

Multiplication and Addition

results from
R.F



..... By using the number line

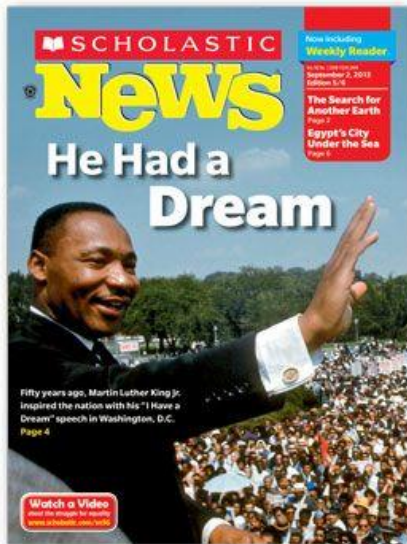


Applying Thinking Maps

First, you and a partner will choose one Scholastic News Magazine. Review it. [5 min.]

Then, you will work with a partner to create two questions that would require two different Thinking Maps to answer them. [5 min.]

Finally, share your article with another pair and the questions you created based on the article.



Cue Words

Bubble Map

looks
feels
sounds
smells
tastes like
is a
characteristic of
is a feature of

Double Bubble Map

Compare
and
as well as
both
like
each
neither
likewise
also
In the same way
Contrast
although
while
but
however
instead
whereas
yet
on the other
hand

Tree Map

types of
kinds of
for example
another
in fact
for instance
such as
in addition
one
most important
also

Brace Map

consists of
parts of
take apart
components
form
structure

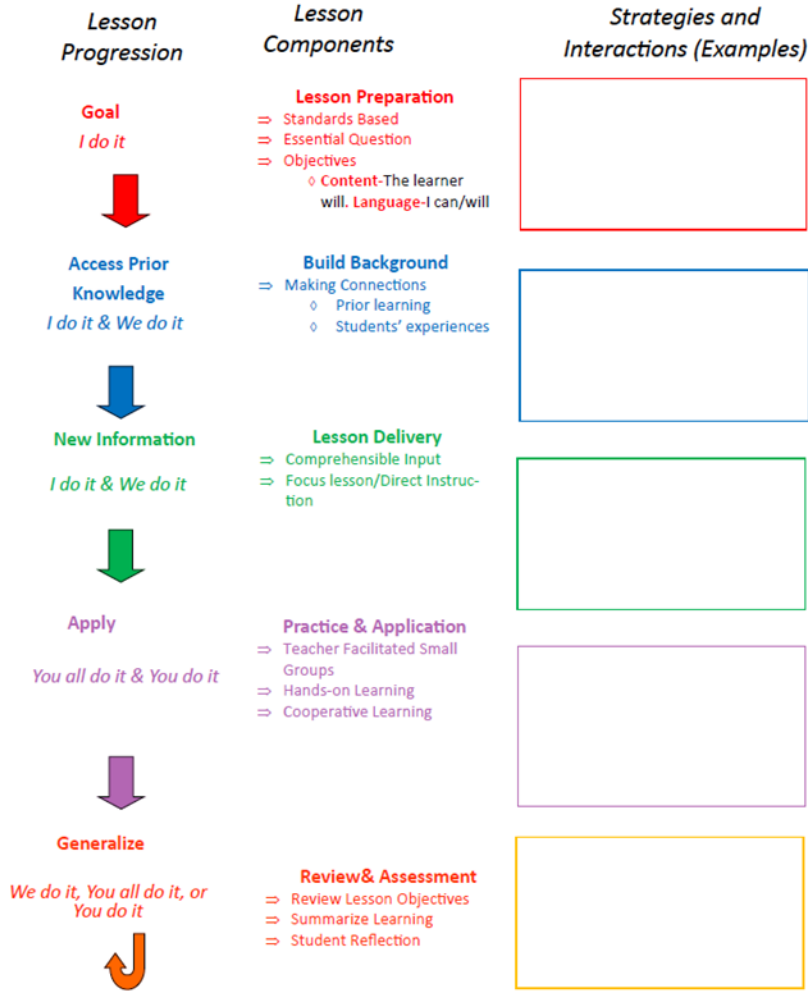
Flow Map

first
before
next
during
after
finally
past
present
since
when
on (date)
at (time)

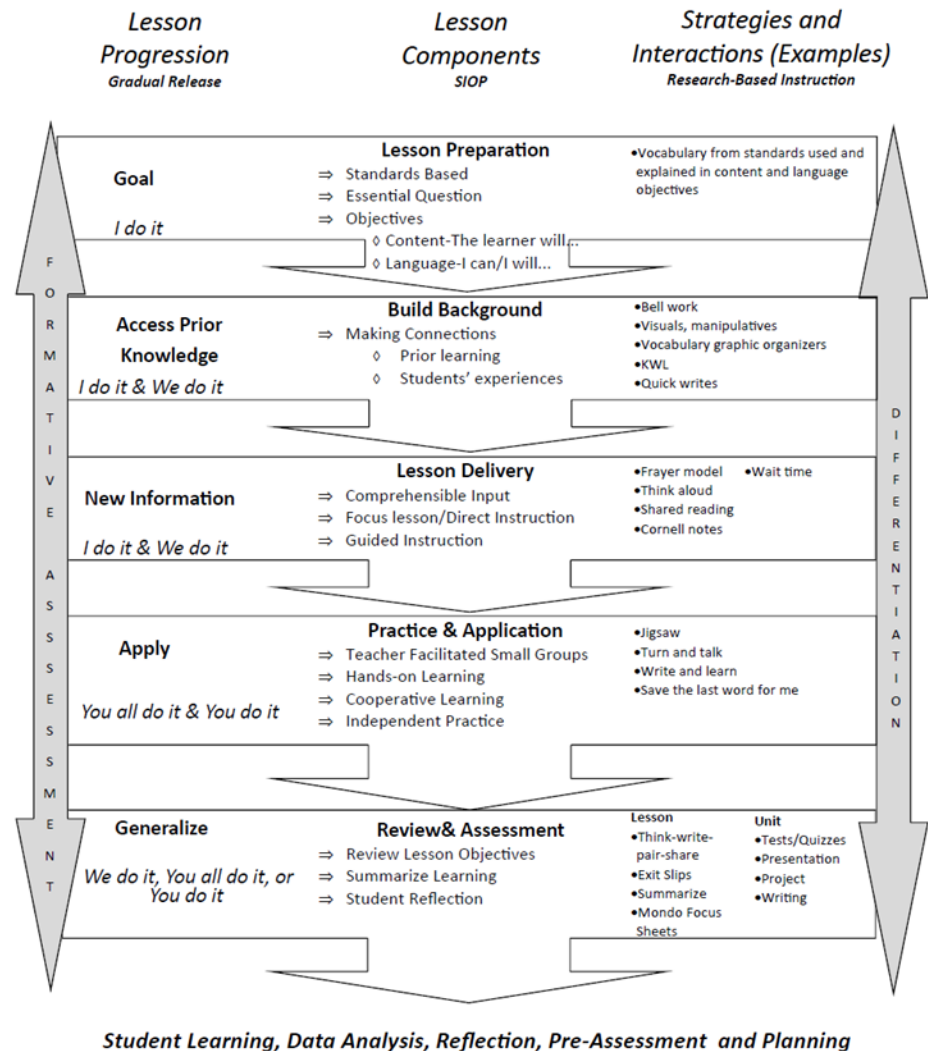
Multi-Flow Map

Cause
because
due to
leads to
reason
when
motive
why
as a result
since
if...then
Effect
as a result
because
benefits
consequences
impact
outcomes
so
since
therefore
thus

Instructional Model



Instructional Model



Today's Objectives

David's presentation on Thinking Maps

The learner will use a variety of Thinking Maps to organize their thoughts.

Learners will practice using Thinking Maps

Learners will use Thinking Maps to answer questions

Students critical thinking will increase