Using Thinking Maps to promote critical thinking, student autonomy & metacognition

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Circle: Brainstorm
Tree: Categorize
Bubble: Describe
Dbl. Bubble: Compare/Contrast

Flow: Sequence
Multi-Flow: Cause/Effect
Brace: Part to Whole
Bridge: See Relationships
A Bit of Background...

• Brainchild of Dr. David Hyerle
  (cognitive-neuroscience & collaborative teaching and learning models)

• Dr. Estee Lopez (consultant)
Circle Map - Brainstorming

What comes to mind when you think of metacognition?

- Language
- Thinking about thinking
- Brain
- Reasoning
- Processing
- Self awareness
- Self-monitoring
- Problem solving
The Tree Map – Used for Classifying
What are the story elements of The Three Bears?

Story Elements of The Three Bears

- **characters**
  - Goldilocks
  - Papa Bear
  - Mama Bear
  - Baby Bear

- **setting**
  - In the Three Bears’ House in a forest

- **problem**
  - Goldilocks let herself into the Three Bears’ house and ruined their things

- **solution**
  - The Three Bears came home, frightened Goldilocks, so she ran away
Flow Map- Sequencing

How do you make apple sauce?

1. Peel and core the apples.
2. Cut the apples.
3. Put the apples in a pot and add water.
4. Cook the mixture.
5. Add lemon juice and salt.
6. Mash the apples.
7. Let the applesauce cool. (Add cinnamon and sugar, if you like.)
8. Serve and enjoy!
What Did You Notice about Brian After the Crash?

How did you know this?

- Brian only has "a $20 bill, a quarter3 dimes, a nickel and 2 pennies. A fingernail clipper, a billfold with a $20 bill. And on his belt somehow, the hatchet his mother had given him” p. 46
- "Maybe even today. They might come today.” p. 44
- "He drank water and did not know if it was clean or dirty.” p. 47

After the crash Brian was...

- unprepared
- positive
- unrealistic
- motivated
- desperate

Perpich was always telling kids to get motivated.” p. 46

p. 50 "... tried to stay positive."
Double Bubble Map - Compare & Contrast

What are some important differences between the city and the country?

City:
- Urban
- Overcrowding
- More pollution
- Many buildings

Country:
- Rural
- More wild animals
- Less people
- Farmland
Multi-Flow – Cause & Effect
What are the causes and effects of people becoming homeless?

People lose their jobs
People have drug problems
People foreclose

People become homeless

How do you know this?
NPR Report
My parents talking

People move in with family members
People go to homeless shelters
People move to areas with cheaper rents
How do we promote critical thinking, student autonomy & metacognition?

As language teachers, we can...

Provide scaffolds to create independence and allow all students access to challenging work.

Prepare students to develop questions that guide their own learning.

Help students to ask questions of themselves to determine knowledge gaps.

Ask open-ended questions that guide students to think more critically.

Isolate vocabulary needed to respond to challenging questions.

Create multiple opportunities for students to present work, providing occasions for presenters to explain their approach to the task.

Differentiate our lessons to include rigor for all students – from the newcomer to the advanced learner.
Promoting Differentiation-
Beginners are active participants.

Students can display their understanding of concepts as they develop the language to express their understanding.

Autonomy requires and ensures differentiation.
Students expand ideas into complete sentences.

Students use pictures to generate ideas.
Students tell a sequenced story with details.

First, Camila went to school. She didn’t have any news.
Second, she went to the bakery. She bought the finish bred. The bakery decoridita cake.
Next, she went to the library. She took 5 books and mom took 1 book.
Next, they see the mill curiaie.
Then, new rancherries and her name is Cristina.
Next door is empty.
Last, Camila went to the school.
She shared good news about her new friend Cristina.
Promoting presentation skills in a supportive environment

Students focus on the language of their presentation—because they’ve done the content work already!
Promoting Presentation Skills

Lead Debaters from the Cat Team make supporting statements for their argument (opposing team is taking notes).

Lead Debaters from the Dog Team make their opposing points (opposing team is taking notes).

Both teams have a 5 minute time-out to prepare questions.

The Cat Team takes turns asking questions while the Dog Team responds to the questions.

The Dog Team takes turns asking questions while the Cat Team responds to the questions.

Both teams have a 5 minute time-out to summarize their main points.

The Cat Team summarizes their main points.

The Dog Team summarizes their main points.
Providing support to answer questions.

- file:///H:/IMG_0234.MOV
- file:///H:/IMG_0233.MOV
- file:///H:/IMG_0239.MOV
Facilitate higher order thinking skills

What were the causes/effects of Martin Luther King Jr.'s "I have a dream" speech?

- Black people had to sit in the back of the bus.
- There were many places with "Whites Only" signs.
- Rosa Parks got arrested for not giving up her seat.
- There were many unfair laws.
- All people of all colors were not being treated equally.
- Someone threw a bomb into Dr. King's house.
- Martin Luther King Jr. wanted things to change.

Martin Luther King Jr. gave his "I have a dream" speech.

He got shot and killed in 1968.

All of the "White Only" signs had to be taken down.

Black and white people could go to the same restaurants, restrooms, parks and schools.

The laws changed.

MLK won the Nobel Peace Prize.

We honor him and celebrate his birthday in January every year.

Serves as a summative assessment.
Students Can Use Partial Flow Maps to Make Inferences.

Why do you think that Mrs. Johansen took the girls to Uncle Henrick's house?

- Soldiers were on every corner in Copenhagen.
- Nazi soldiers went to the synagogues and got names and addresses of Jewish families.
- Mrs. Johansen took the girls to Uncle Henrick's.
- Nazi's came to the Johansen's apartment at night and asked about Ellen.
Teachers Can More Easily See Students’ Challenges and Successes Interacting with Texts Than with Multiple Choice

Please complete the Multi-flow map below
There may be more than one cause or effect.

The Danes had destroyed their own naval fleet, blowing up the vessels one by one, as the Germans approached to take over the ships for their own use.

p. 15 causes event p. 32 effects

The Danes destroyed their own naval fleet.
Children work cooperatively to create a circle map.

We give thanks for...

Animals
My car
My room
Clothes
The sky
My big sister
Pilo and Blacita
My grandma

Camp

Levs
trees

America

Flag

Food

ESL classroom

Water

Because we are thankful.

Say thanks?

You something you have to say it.
Parents brainstorm goals for their children using a circle map.

The goals I have for my child are...
- to stay focused
- to be confident
- to become a part of the society
- to make a lot of friends
- to be more social

Maps have multiple purposes!
Circle Maps Can Serve as Checklists for Students

Debate Checklist
for 3rd Grade

Name ______________________

Debate Tips

- Listen to what others say!
- Speak slowly, loudly and clearly.
- Have eye-contact with the audience.
- Always be respectful.
- Take turns.
- You can improvise if you need to.
- Stay on topic.
- Stand up straight and don't fidget with your hands.
- Children can self-monitor.
Promoting development of academic language in context

How can we best describe Yertle the Turtle?

- mean
- not pleased
- selfish
- concerned about himself and not the other turtles
- stubborn
- turtles wanted to eat and he refused
- bad temper
- ruling poorly
- carrying him and hurt
- he's not worried that they are
- mad/angry
- for a higher throne
- more turtles
- poor self control
- screaming at Max
- controlling
- bad king (leader)
Martin Luther King Jr. is/was...

- Smart
- Powerful
- Good
- Nice
- Hero
- Friendly
- Strong
- Brave
- Black
- Good
- Hero
- He was born
- Nice
- Kind
- Awesome
- Loved
- Great
- Later
- Bespoke
- African American
- Strong
- Brave
- Black

Because he went to college at age 15. He worked at the mill. He got shot in 1968.
Provide opportunities for students to locate text evidence to support ideas.

What evidence in the story proves these character traits?

- She said a prayer for the angry mob twice a day.
- She was scared to go to school but she still did it.

Ruby Bridges

- Kind
- Brave
- Studious
- Peaceful
- Friendly (X)

She didn't say angry things back to the mob.

She was studious because she learned without other children around.

Thinking Maps help learners to notice when a conclusion is not supported by the text.
Isolating specific vocabulary to aid in developing accurate responses.

Tell me about the differences between day and night.
Generating vocabulary and expanding ideas in response to questions and prompts.

How are day and night the same?
How are they different?
At night there are fireworks. During the day stores are open.
Promoting inference skills...
What makes it likely that these children will become friends?

What do the children have in common that makes it likely that they will become friends?

- Children on the left
  - Live in same neighborhood
  - Pets
  - Baseball gloves
  - A girl and boys
  - Have brothers and sisters
  - Kids
  - Middle class
  - Curious

- Children on the right
Students can Compare and Contrast Texts to Identify Genre.

Why is this information important?

- they may have some real information
- the pictures are usually illustrations
- sometimes there is a table of contents

fiction

- they have titles
- you can learn from both of them

informative text

- they contain real information
- the pictures are usually photographs
- there is usually a table of contents
- they can have tables

We need to know if a book is fiction or informative text so we know if it’s real or not.

If we understand parts of informative texts, we can get more information from them.
Scaffolds facilitate vocabulary production and sentence construction.

Organizing information to make sentences.

I taste

Foods based on how they taste

Salty  Sweet  Sour

Pretzels, bacon and French fries taste salty.

Pretzels, bekm 

and French fries taste salty.

Cheeset. Chek, sabali

and Chekelt taste sweet

Gripfret, gree napol.  

and Sour patch ket taste sour
Newcomers organize ideas to write a fictional story.

My paper bird came to life and can eat bugs.


My friend can and can't.
Students use their organized ideas to write creatively.

MY EATING BIRD

My paper bird came to life and can eat bugs. One day, my paper bird came to life!! My paper bird eats bugs. He only eats in breakfast, lunch dinner. He eats worms. He eats in, not I watch my paper bird eat.
What are the facts you remember from the reading about cicadas?

- Some cicadas have bad wings.
- Dog-day cicadas have green markings.
- Periodical cicadas have red eyes.

- Cicadas spend 4-7 years underground.
- Nymphs eat root sap.
- Transparent wings.
- 1/2 inches long (4 centimeters).
- Don't sting or bite.
- Babies born after parental disc.
- Males buzz to attract a mate.
- Males have green abdomens.
- Eggs are laid in twigs on branches-shrubs.
- DD have dark eyes.
- Some never mate.
- Cicadas only live above ground for 4-6 weeks.
- PC live underground for 14-17 years.
- Some never live above ground.
- Shed their skin before mating.
- Males buzz using their abdomens.
- Shed their skin above ground.
- Day 200-600 eggs.
- Eggs are laid in twigs on branches-shrubs.
- Eggs get stuck in skin and climb billion per sq. mile at them.
How can I best categorize important facts about cicadas?

Cicadas are interesting insects.

Habitat       Eat       Life Cycle       Physical Characteristics       Interesting "Extras"

Nymphs, born above ground, go underground for most of their lives, on logs and twigs, shrubs, branches, Periodical, Dog Day, http://kids.nationalgeographic.com/kids/animals/creaturefeature/cicadas/
Beginners Use Tree Maps to Sort Information into Categories

<table>
<thead>
<tr>
<th>Urban Communities</th>
<th>Suburban Communities</th>
<th>Rural Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>many buildings, stores, and restaurants.</td>
<td>people travel to work on trains and buses.</td>
<td>The population is small.</td>
</tr>
<tr>
<td>things are close together</td>
<td>places things are more spread out than in cities</td>
<td>There are many big open spaces for farming</td>
</tr>
<tr>
<td>people speak many languages</td>
<td>suburban communities</td>
<td>People have farms and grow fruit, and vegetables.</td>
</tr>
<tr>
<td>There are many restaurants with different foods.</td>
<td>new york cities</td>
<td>farmers.</td>
</tr>
<tr>
<td>many people</td>
<td>people live in houses</td>
<td>submarine</td>
</tr>
</tbody>
</table>
Then Beginners Use Flow Maps to Logically Sequence Information

Communities are ____________ There are three types of communities, ____________, ____________, and _____________. These communities have different features.

One kind of community is _________________. A __________ community has....(give details from tree maps).

A second type of community is a ____________ community. A _________ community is ...(give details from tree maps).

The last example kind of community is a ____________ community. A _________ community has...(give details from tree maps)

There are different types of communities. (name the kinds of communities and write an ending)
Communities are places where people work, live, and have fun. There are three types of communities: rural, urban, and suburban. These communities have different features.

The first type is rural. A rural community has big, open spaces for farming. People have farms and grow fruit and vegetables. Farmers grow foods called crops. They also have livestock like cows, sheep, and chickens.

A second type of community is a suburban community. A suburban community is where people travel to work on trains and buses. Places are more spread out than in cities. Suburban communities are near cities like New York City.

The last example of a kind of community is an urban community. An urban community has many buildings, stores, and restaurants. People speak many languages. Many people work and live in cities.

There are different types of communities. These communities are rural, urban, and suburban.
Use This Tree Map Again in Your Assessment to Have Students Cite Other Examples of “Show Not Tell”

In *Number the Stars*, Lois Lowry Uses the technique of "Show not Tell"

- **Examples of showing anger**
  - Three years, Annemarie thought with contempt. Three years they've been in our country, and still they can't speak our language

- **Examples of showing fear**
  - Annemarie looked back too, and saw that Ellen's face, usually rosy-cheeked, was pale, and her dark eyes were wide.

- **Examples of showing worry**
  - Don't talk so much, she told herself. Just answer them, that's all.
  - "You girls walk a different way to school. Promise me, Annemarie."
Use Tree Maps to Build Students’ Academic Vocabulary

Argumentative Language

- Share your claim and refute counter-claims
  - The way I see it...
    - Based on...I can conclude to the conclusion that...
      - There is evidence to suggest that...
        - In my opinion...

- Build on the claims of others
  - So what you’re saying is...
    - What you said about... made me think of...
      - I agree with your argument because...
        - That was a great point because...

- Respectfully disagree with the claims of others
  - I respect your claim about, but in my opinion...
    - You said..., I’m going to disagree with you because...
      - You make a good point about...but the other side of the argument is...
Students Can Argue Their Opinions in an Organized and Cohesive Format

Cats Are Better Pets Than Dogs

Skills
- cats can learn 100 words
- they can flip over if they fall

Appearance
- cuddly
- adorable

Traits
- independent
- agile
- they live long lives

Care
- they need food and water
- they can mostly take care of themselves
Providing support to answer questions.
Providing support to answer questions.
Providing support to answer questions.
Characters in *Number the Stars* Use Code Words to Mask the True Meaning

- "Is the weather good for fishing?" as Is it safe for the refugees to escape?
- "She will be bringing one carton of cigarettes" as She will be bringing one Jewish person.
- "Tomorrow will be a good day for fishing." as Tomorrow they will help Jewish people escape.
- "The weather is right."

really means relating factor
A brace map to show the parts of informational texts
Add a Frame of Reference

Before We Read about Helen Keller

She's terrified.
She's not independent.
She has no friends.

She's worried.
She will not learn.
She was always in danger.
She won't advance.
She can't learn.
She can't change.

She's sad.

Why do you have these thoughts?

She's blind and deaf so she can't do anything.
To have friends you need to speak.

Maybe she can make friends by "acting things out."

Being blind makes her be in danger.
Students Can Reflect on How Their Opinions or Points of View Are Affected by Interacting with Literature

Before I read a biography about Helen Keller, I thought that Helen __________________________ because __________________________.

After I read a biography about Helen Keller, my point of view changed about Helen because __________________________ __________________________.

One reason why my point of view changed was because _____. For example __________________________.

Another reason why my point of view changed was because __________________________. For example __________________________.

The last reason why my point of view changed was because ________. For example __________________________.

In conclusion my point of view changed because _______ __________________________.

W2.2 Responding to Literature: Create and present a poem, narrative, play, artwork or literary review in response to a particular author or theme studied in class.
Before I read a biography about Helen Keller, I thought Helen would have a terrible life, she couldn’t be famous.

After I read the biography of Helen Keller my point of view changed because it said in the book “She had a great life even before she died” “And the book also said she went to Rodcliffe Colledge and she learned and became famous.” One reason why my point
of view changed was because she graduated college. Another reason
why my point of view changed was because she met presidents
and queens. In conclusion, my point of view about Helen Keller
covered because she was smart, colorful and famous. I thought
Students see relationships between words
Learners Sequence Their Writing
Students determine causes & effects
Students Brainstorm
Students Work Collaboratively in a Jigsaw-Style Activity to Determine Cause and Effect.
Contact us!

We are interested in your feedback!

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