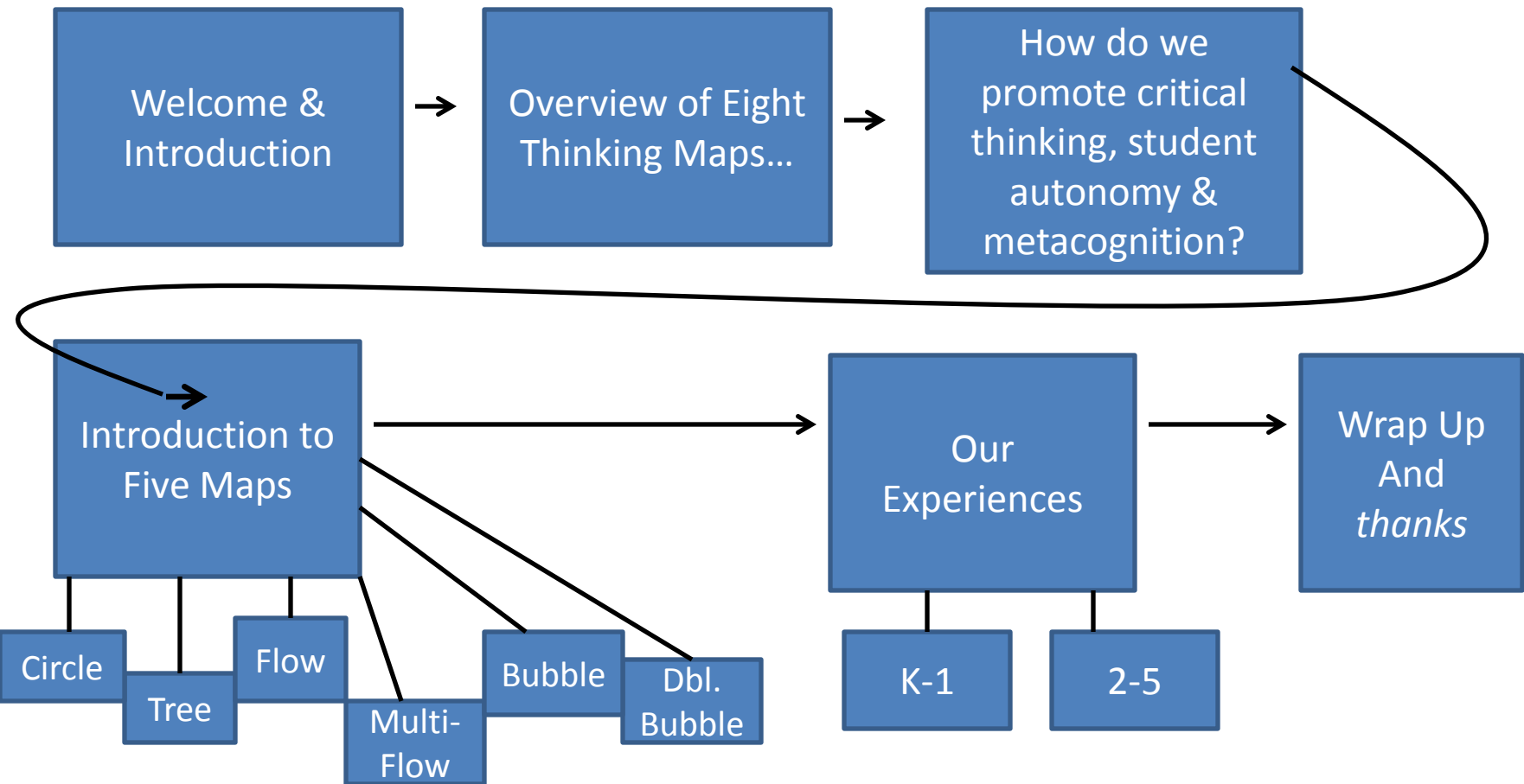# Using Thinking Maps
to **promote critical thinking, student autonomy & metacognition**

Jeanne Canon, Jennifer Jagde & Mari Doyle
Eastchester School District

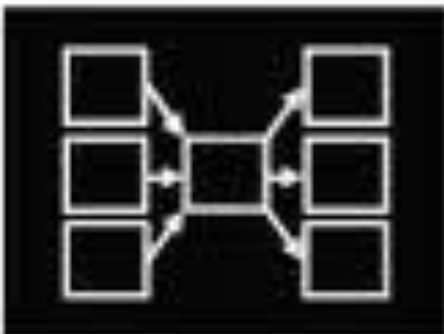Welcome & Introduction → Overview of Eight Thinking Maps… → How do we promote critical thinking, student autonomy & metacognition?

Introduction to Five Maps → Our Experiences → Wrap Up And *thanks*

Introduction to Five Maps:
- Circle
- Tree
- Flow
- Multi-Flow
- Bubble
- Dbl. Bubble

Our Experiences:
- K-1
- 2-5

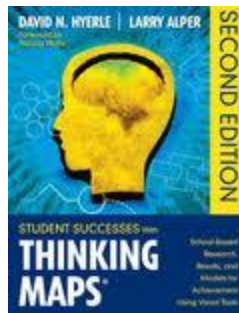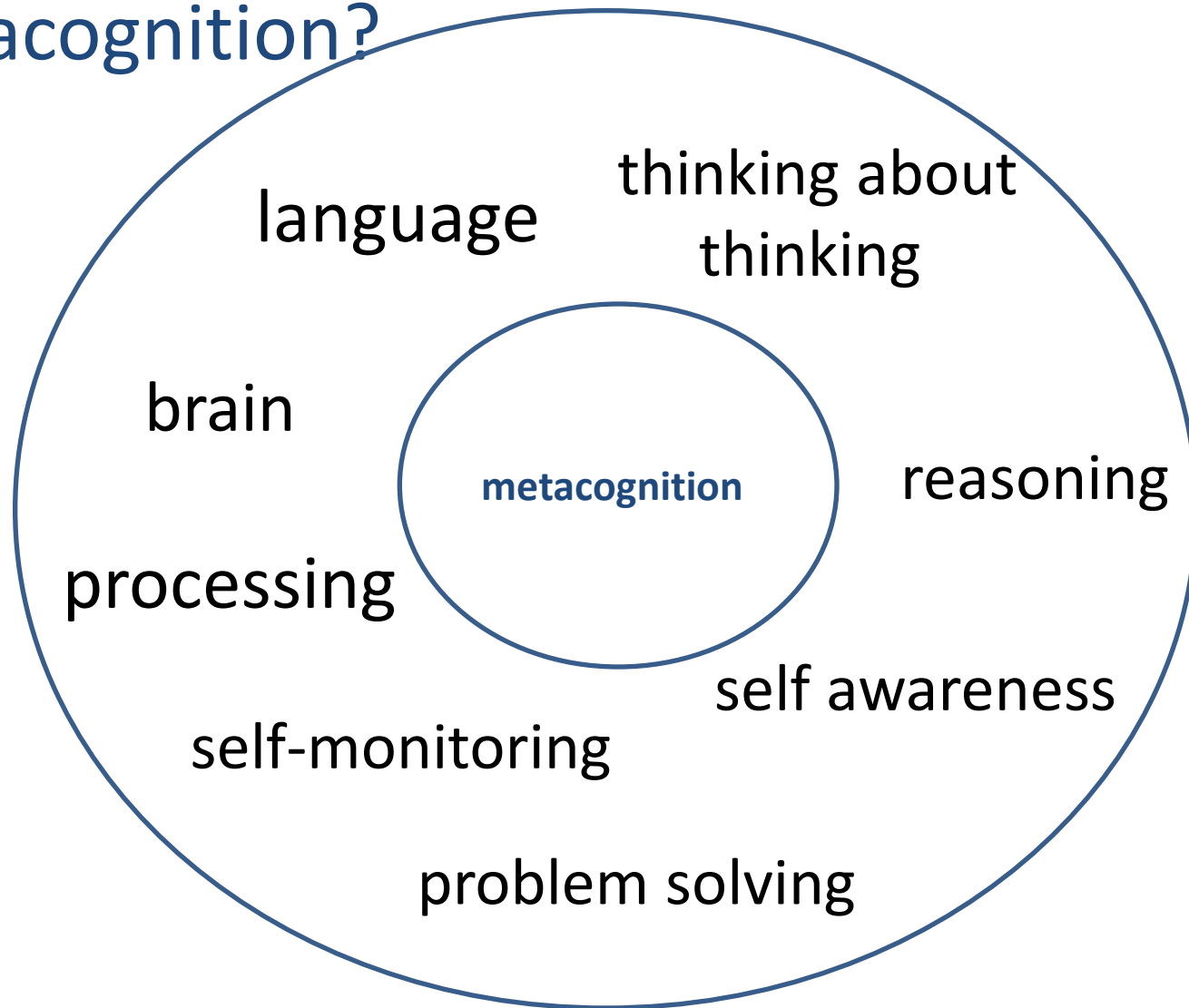| **Circle** Brainstorm	**Tree** Categorize	**Bubble** Describe	**Dbl. Bubble** Compare/Contrast
Flow Sequence	**Multi- Flow** Cause/Effect	**Brace** Part to Whole	**Bridge** See Relationships

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

metacognition

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 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?

Peel and core the apples.

Cut the apples.

Put the apples in a pot and add water.

Cook the mixture.

Add lemon juice and salt.

Mash the apples.

Let the applesauce cool. (Add cinnamon and sugar, if you like.)
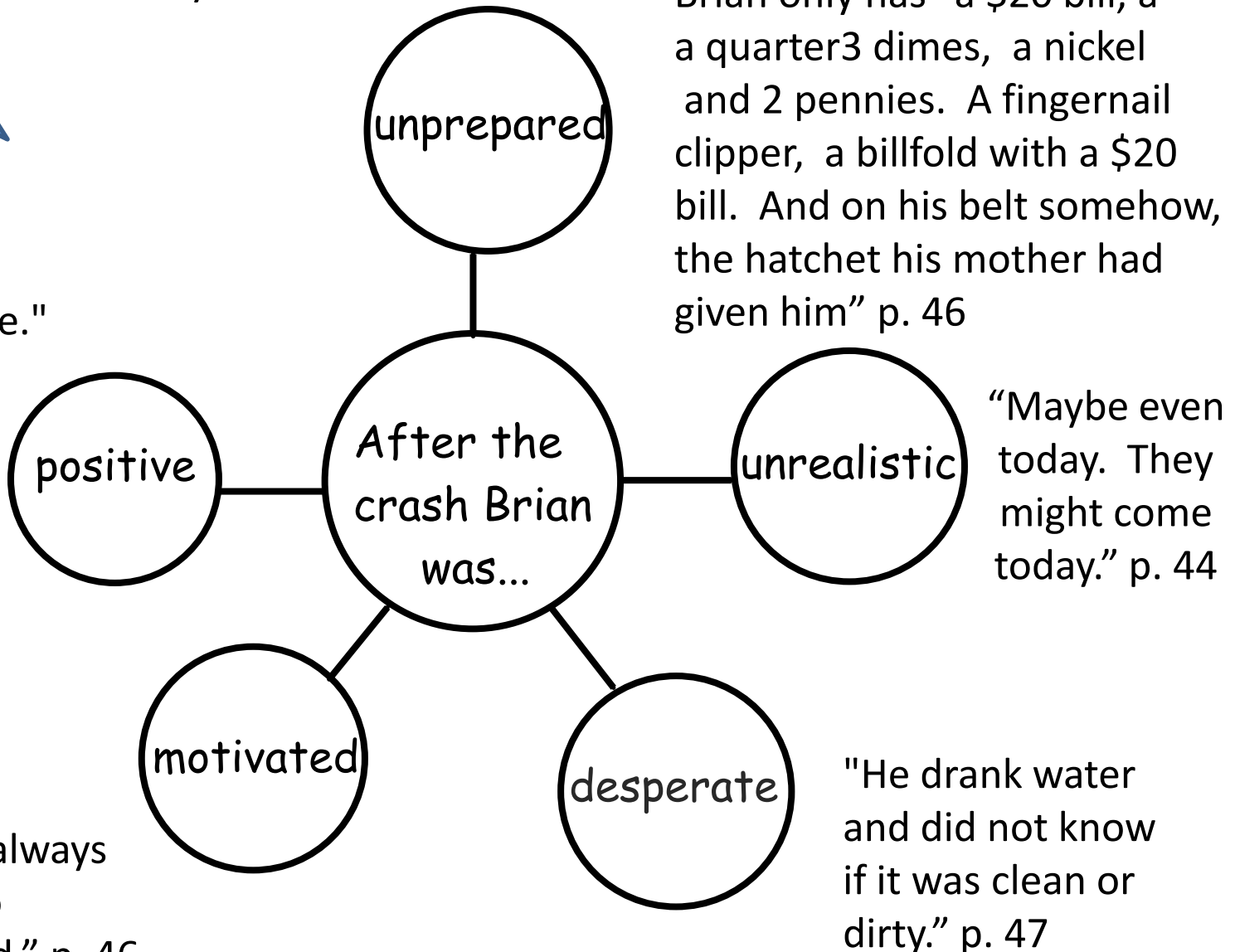

Serve and enjoy!

What Did You Notice about Brian After the Crash?

How did you know this?

p. 50
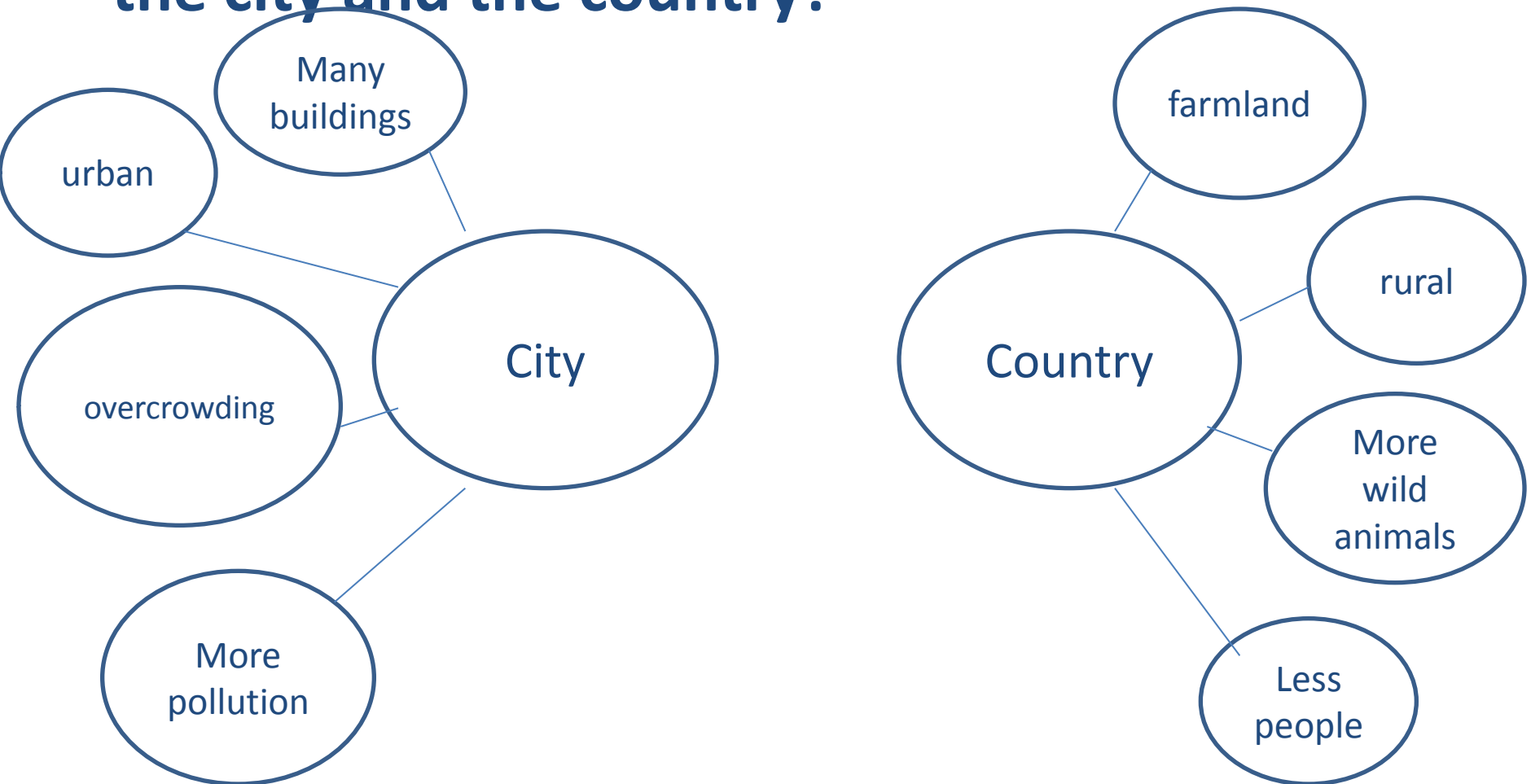"... tried to stay positive."

Brian only has "a $20 bill, a 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

unprepared

positive

After the crash Brian was...

unrealistic

"Maybe even today. They might come today." p. 44

motivated

desperate

"He drank water and did not know if it was clean or dirty." p. 47

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

Double Bubble Map - Compare & Contrast

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

Many buildings

urban

farmland

rural

City

Country

overcrowding

More wild animals

More pollution

Less people

Multi-Flow – Cause & Effect

What are the causes and effects of people becoming homeless?

How do you know this?

People lose their jobs

People have drug problems

People foreclose

People become homeless

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…

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

Prepare students to develop questions that guide their own learning.

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

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

Isolate vocabulary needed to respond to challenging questions.

Differentiate our lessons to include rigor for all students – from the newcomer to the advanced learner.

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

Promoting Differentiation-
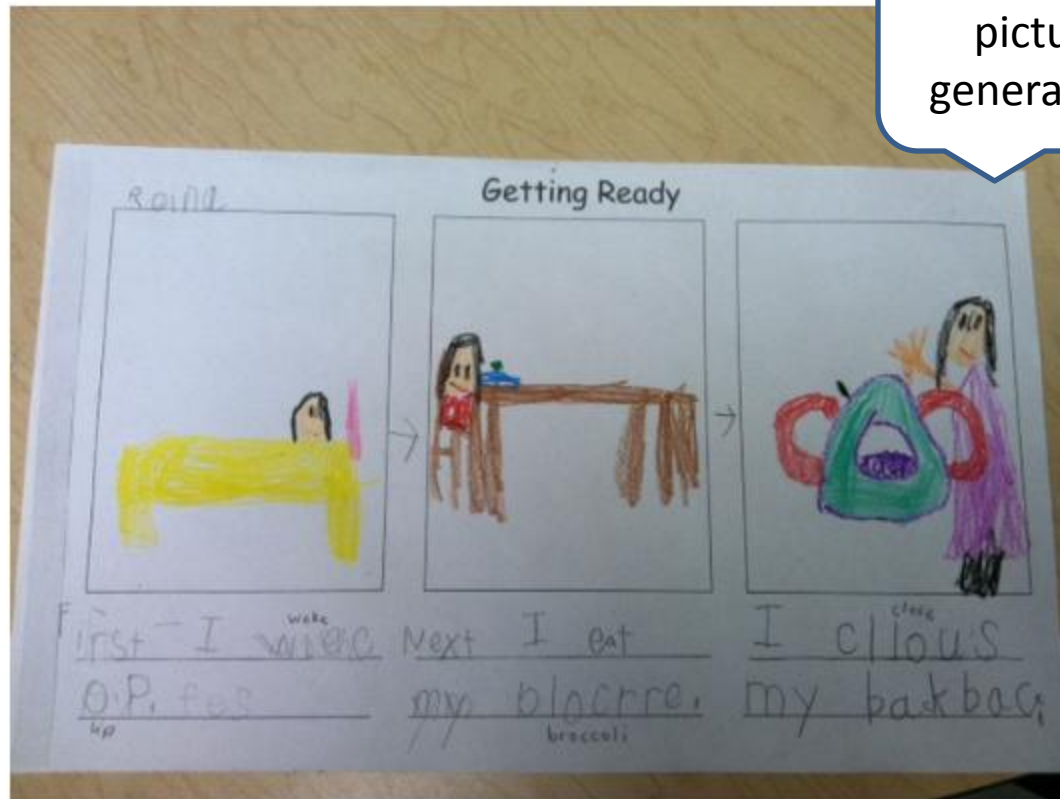## Beginners are active participants.
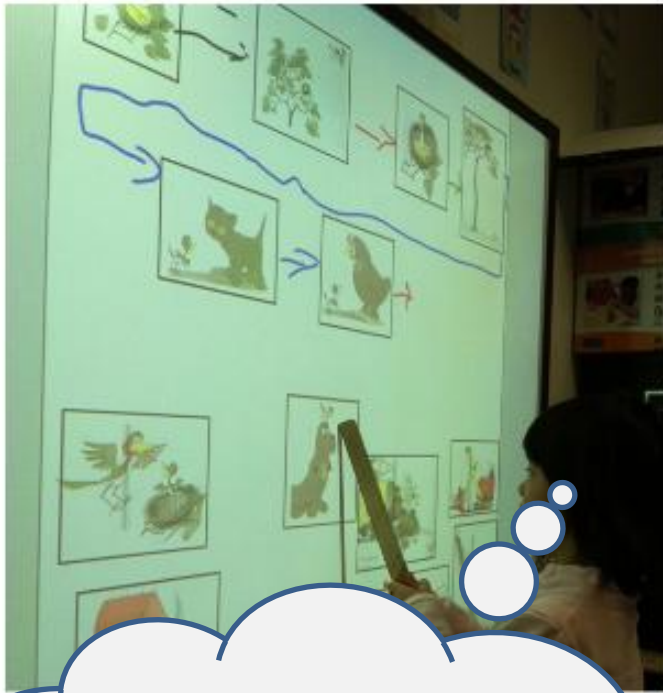
Students can display their understanding of concepts- as they develop the language to express their understanding
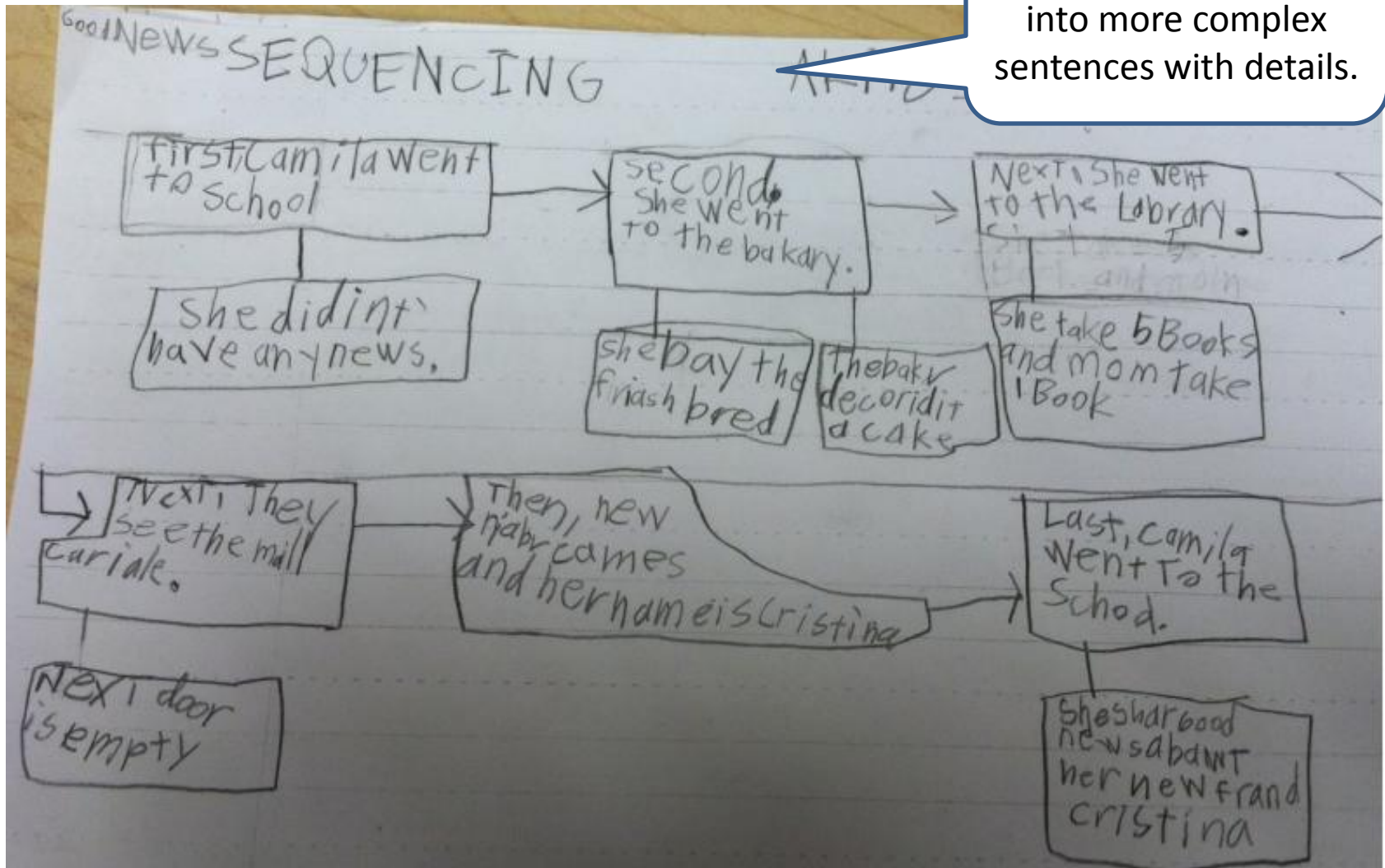
Autonomy requires and ensures differentiation.

Students expand ideas into complete sentences.

Students tell a sequenced story with details.

Students expand ideas into more complex sentences with details.

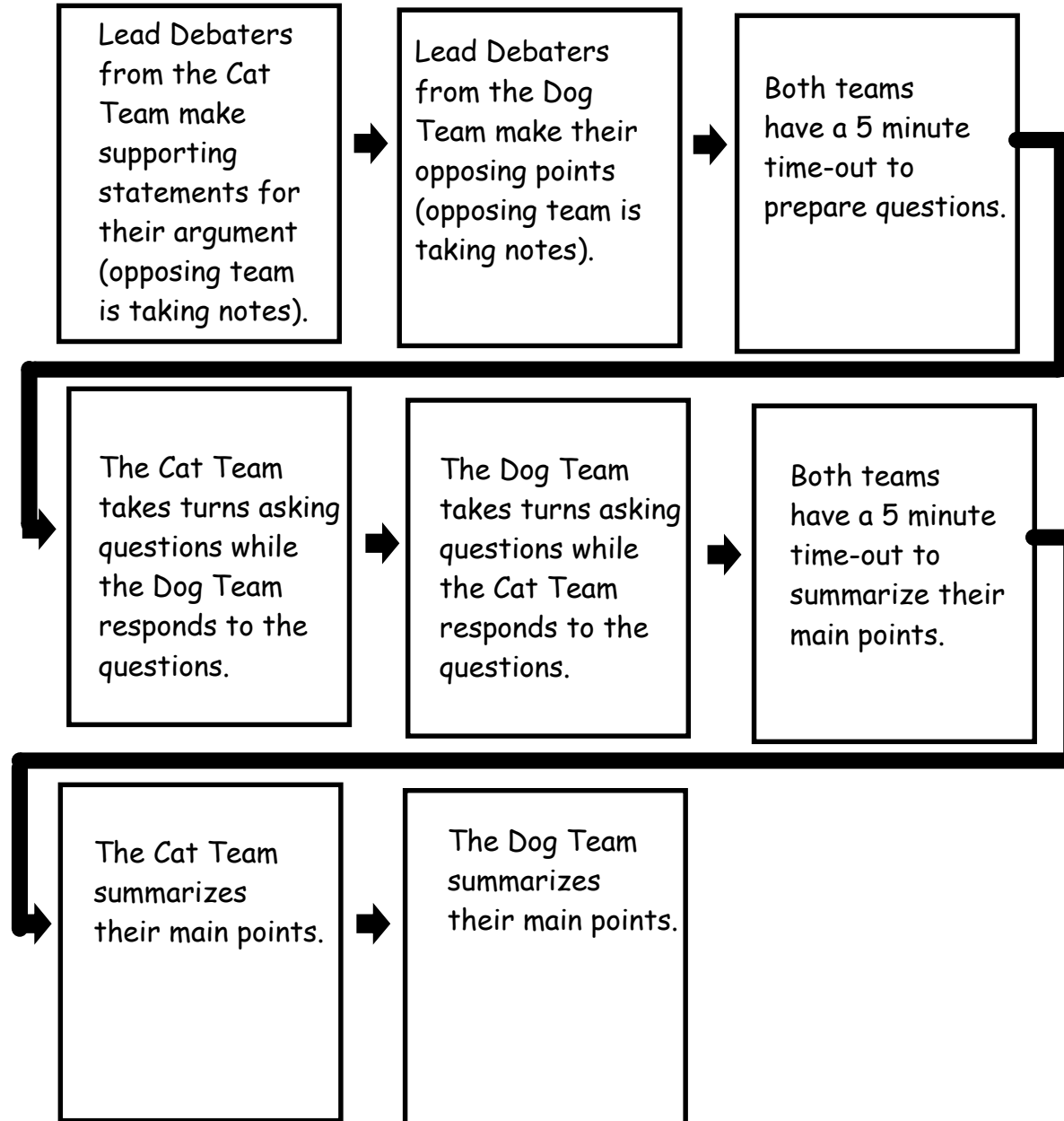# Promoting presentation skills in a supportive environment

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.

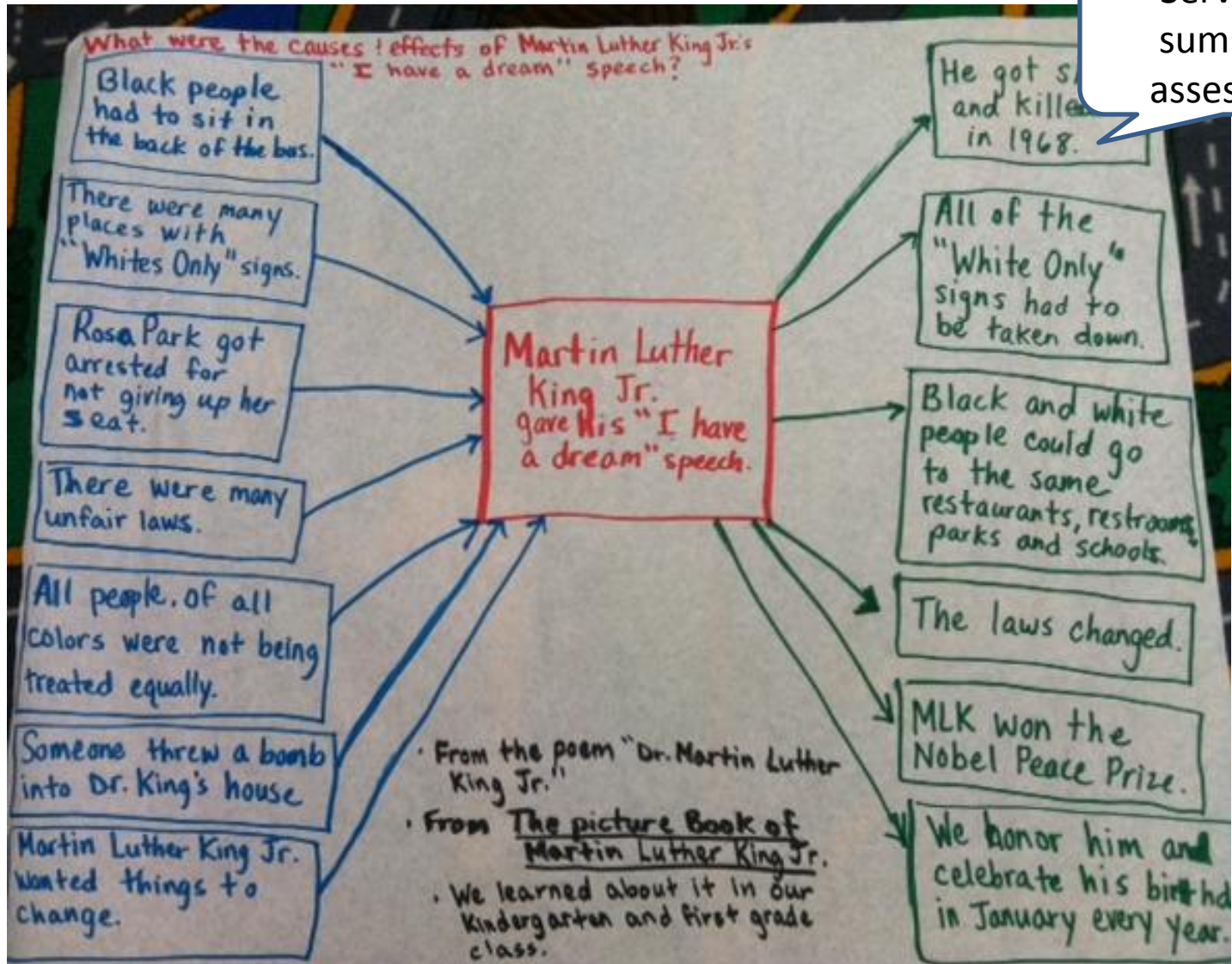The Cat Team summarizes their main points.

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
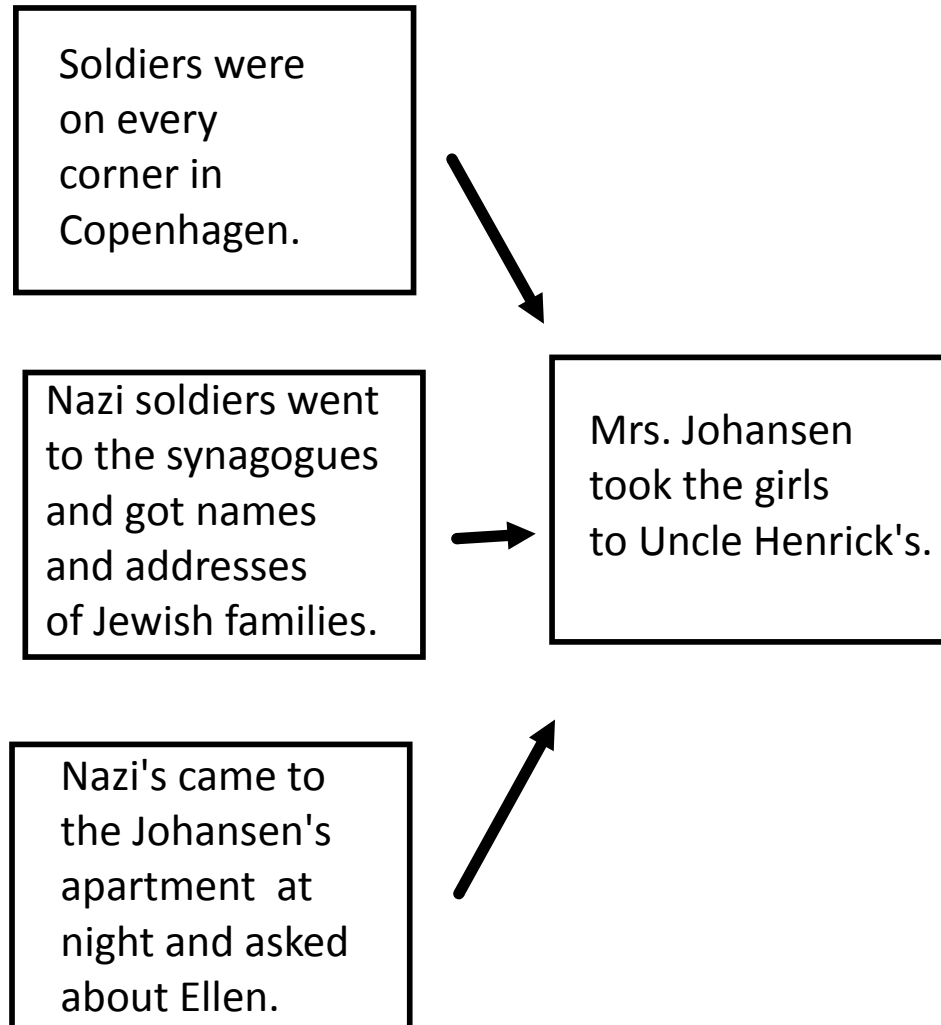
Facilitate higher order thinking skills

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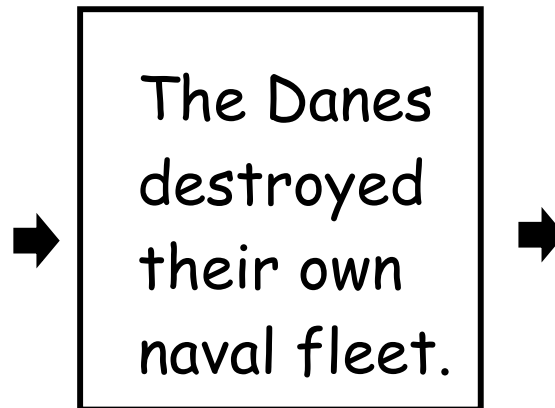
Please complete the Multi-flow map below
There may be more than one cause or effect.

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.

Parents brainstorm goals for their children using a circle map.

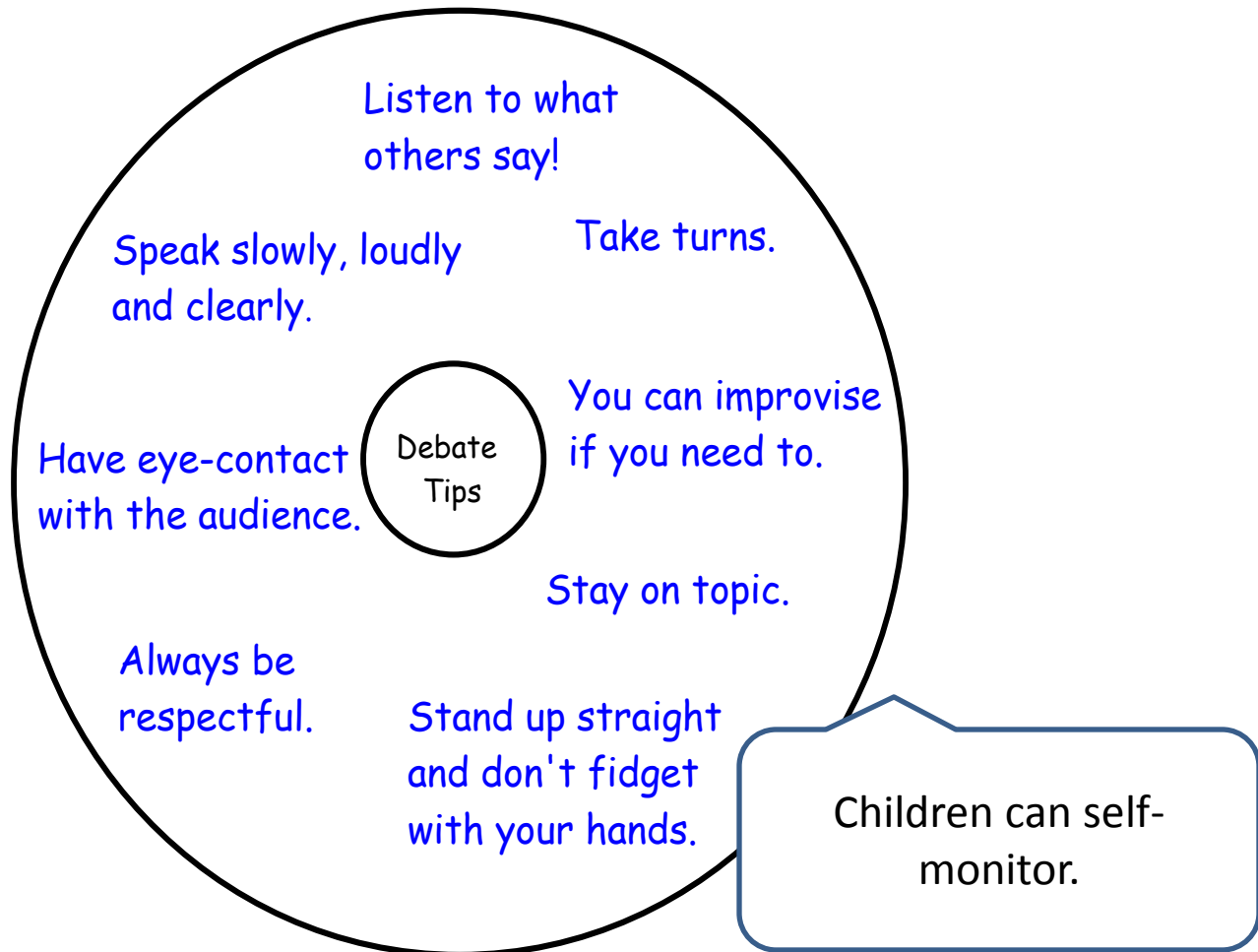# Circle Maps Can Serve as Checklists for Students

Debate Checklist
for 3rd Grade

Name _____

Listen to what others say!

Speak slowly, loudly and clearly.

Take turns.

You can improvise if you need to.

Have eye-contact with the audience.

Debate Tips

Stay on topic.

Always be respectful.

Stand up straight and don't fidget with your hands.

Children can self-monitor.

Promoting development of academic language in context
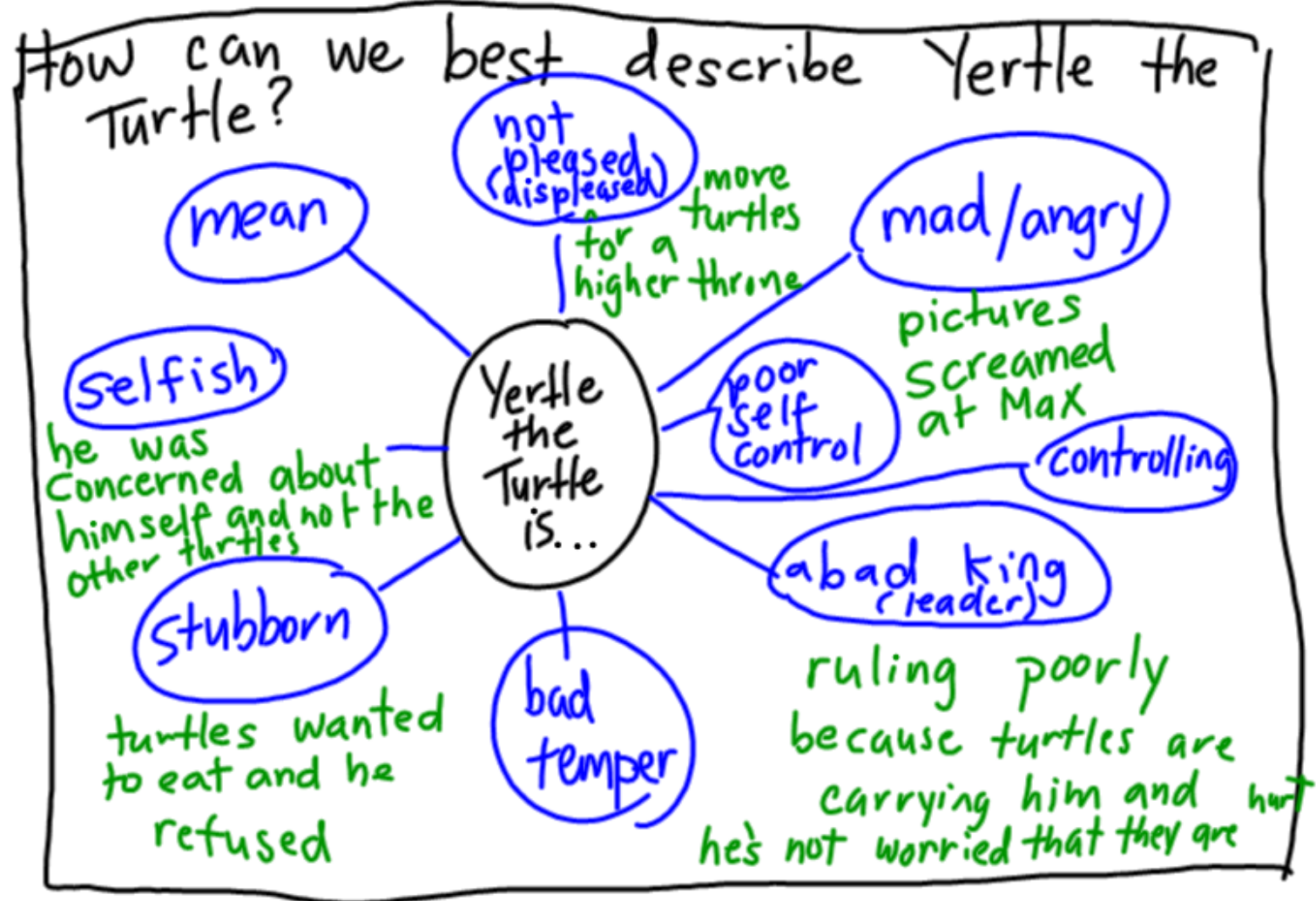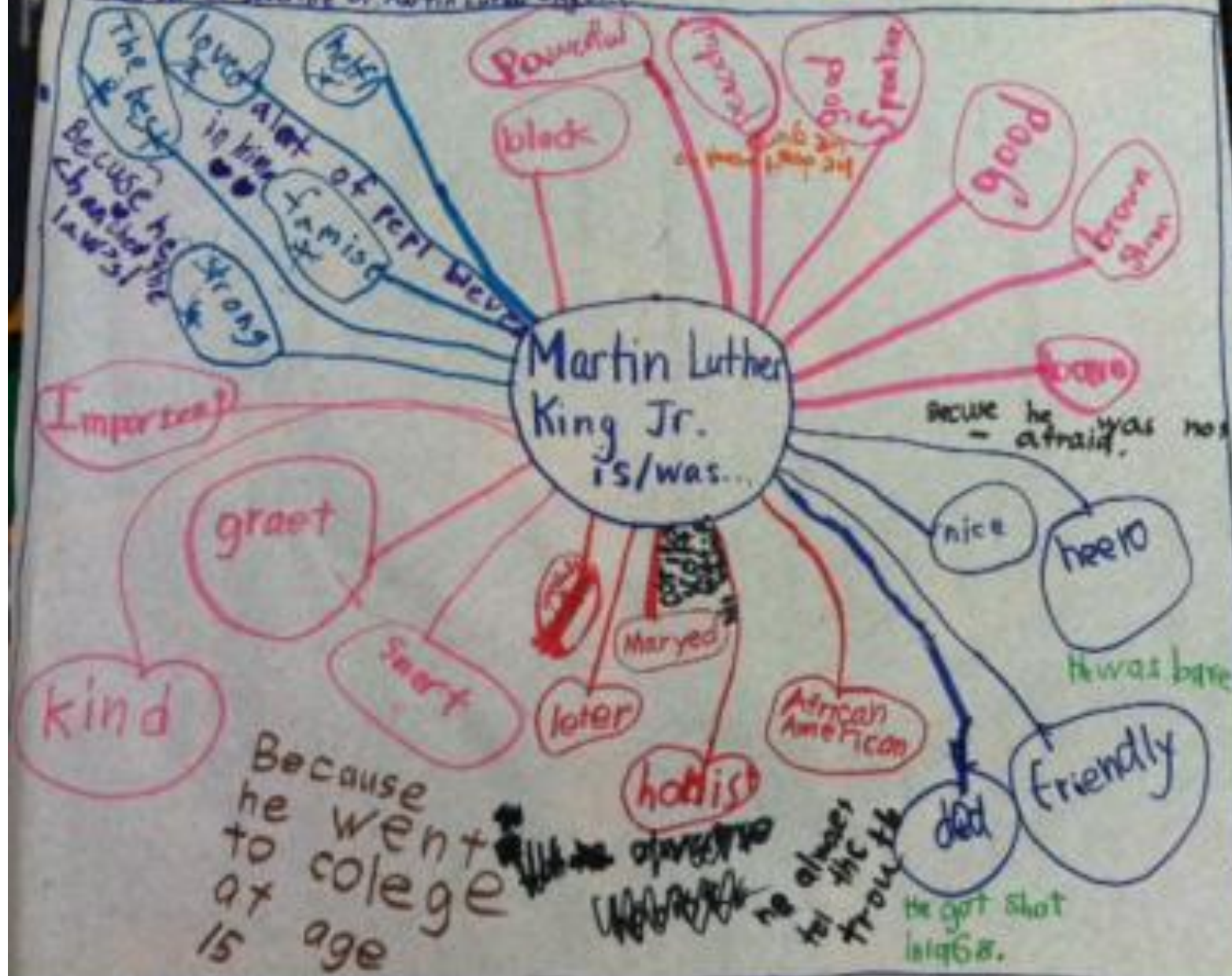
Provide opportunities for students to locate **text evidence** to support ideas

What evidence in the story proves these character traits?

She said a prayer for the angry mob twice a day.

kind

peaceful

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

Ruby Bridges

friendly

She was scared to go to school but she still did it.

brave

Studious

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.
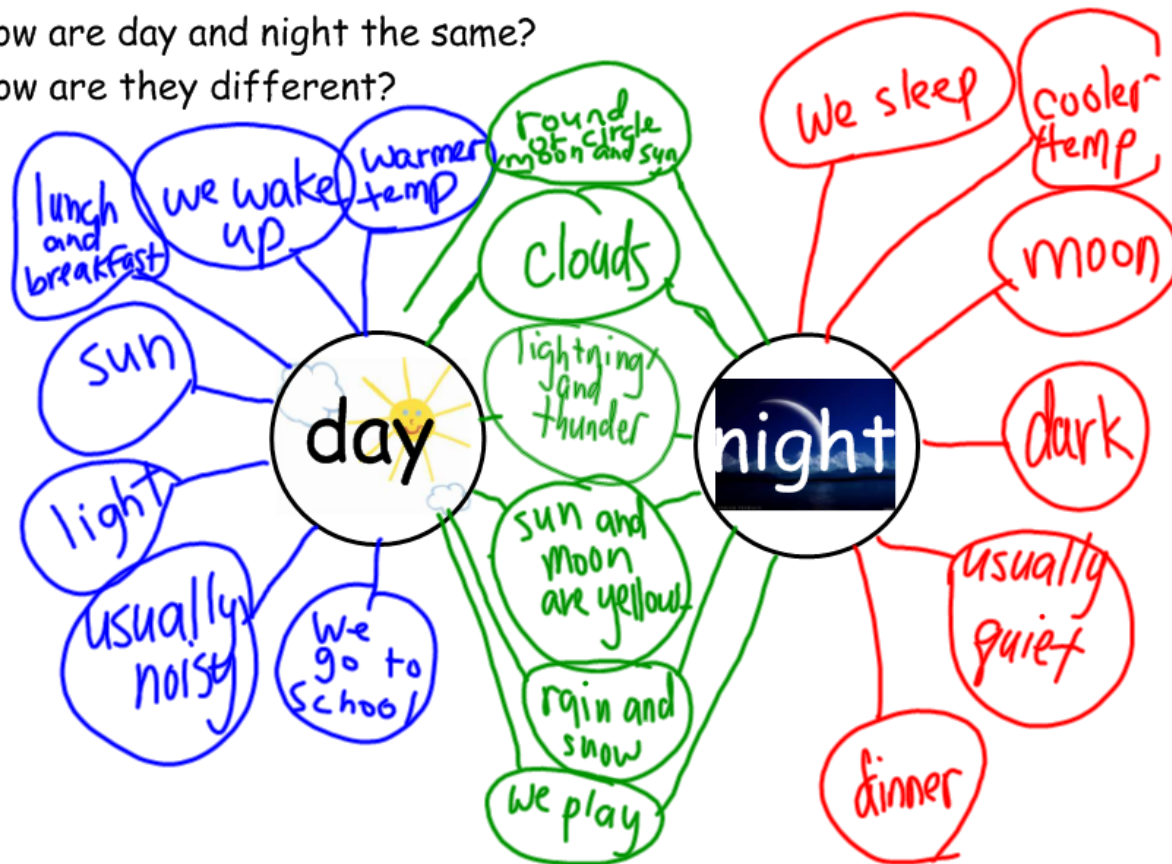
At night, there are finwrcks. During the day stores are open.

With ideas shared on the Dbl. Bubble Map, students focused on the difficult task of writing with prepositional phrases.

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

children on the right

live in same neighborhood =

pets

baseball gloves

a girl and boys

have brothers and sisters

kids

middle class

curious

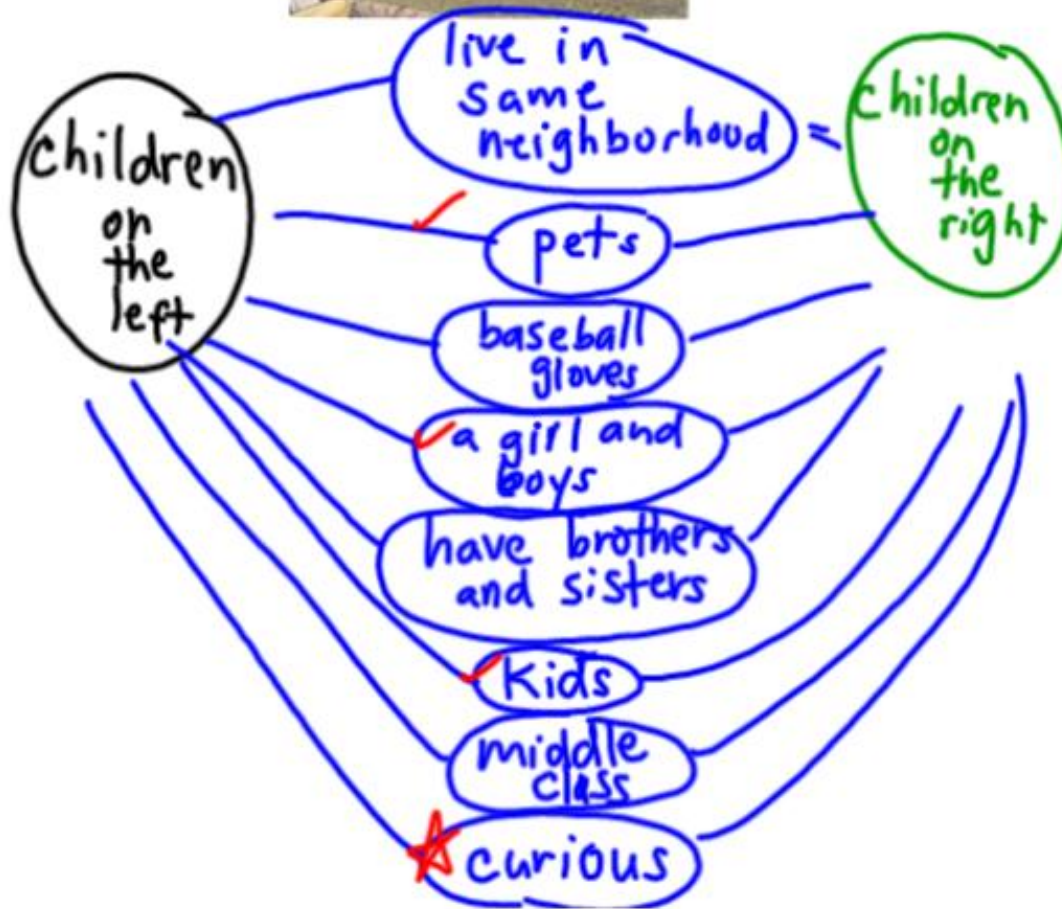# Students can Compare and Contrast Texts to Identify Genre.

Why is this information important?

we enjoy reading both of them

they are written by authors

they may have some real information

they contain real information

fiction

they have titles

informational text

the pictures are usually illustrations

they have pictures

the pictures are usually photographs

sometimes there is a table of contents

there is usually a table of contents

they can have tables

you can learn from both of them

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

If we understand parts of informational 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.
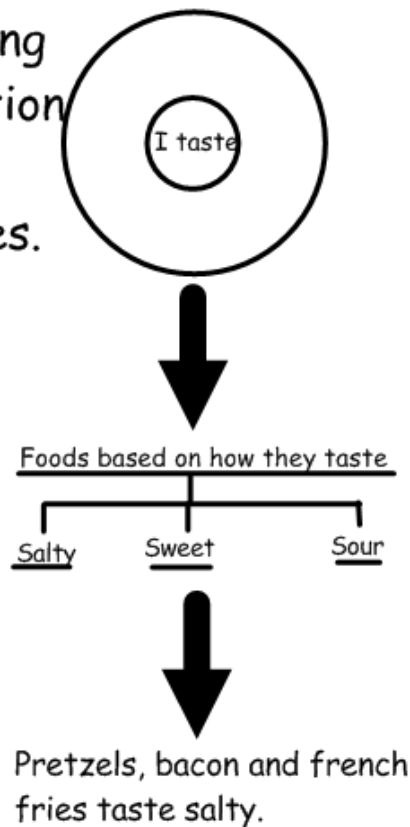
Newcomers organize ideas to write a fictional story.

Students use their organized ideas to write creatively.
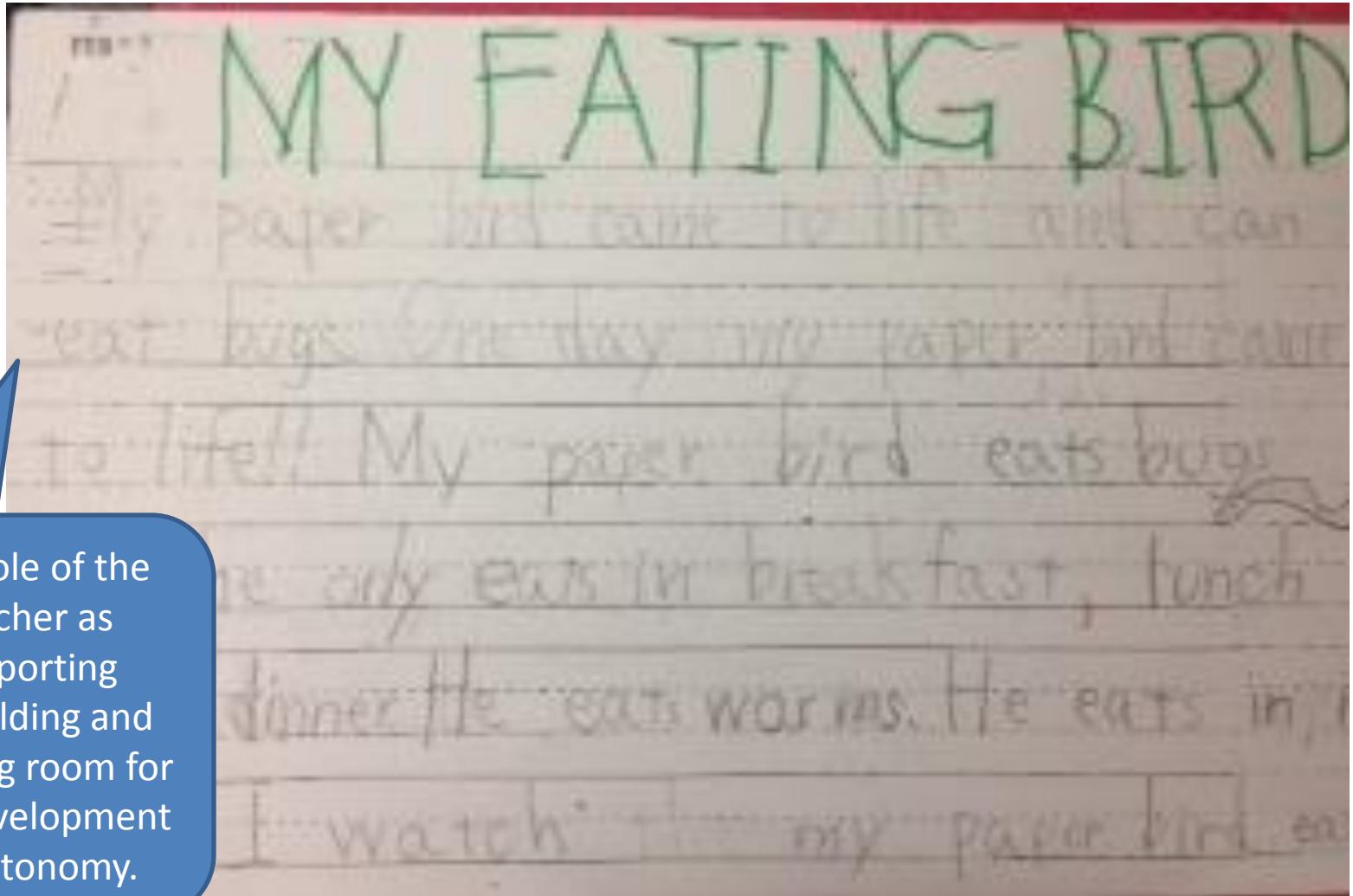
The role of the teacher as supporting scaffolding and creating room for the development of autonomy.

What are the facts you remember from the reading about cicadas?

- shed skin before mating
- lay 200-600 eggs
- Some cicadas have bad wings
- Dog-day cicadas have green markings
- Periodical cicadas have red eyes.
- can get stuck in skin
- males buzz using their abdomens
- eggs are laid in twigs on branches-shrubs
- DD have dark eyes.
- climb
- Cicadas
- DD spend 4-7 years underground
- billion per sq. mile
- Shed their skin above ground
- Some never have mates.
- PC live underground for 14-17 years.
- Nymphs eat root sap
- transparent wings
- Some animals eat them
- Cicadas only live above ground for 4-6 weeks.
- males buzz to attract a mate
- 1½ inches long (4 centimeters)
- don't sting or bite
- babies born after parents die
- Wings grow bigger
- 4 wings

How can I best categorize important facts about cicadas?

Cicadas are interesting insects.

| Habitat | Eat | Life Cycle | Physical Characterists | Interesting "Extras" |

Habitat

Nymphs born above ground

go underground for most of their lives

on logs and twigs shrubs branches

Physical Characterists

Periodical   Dog Day
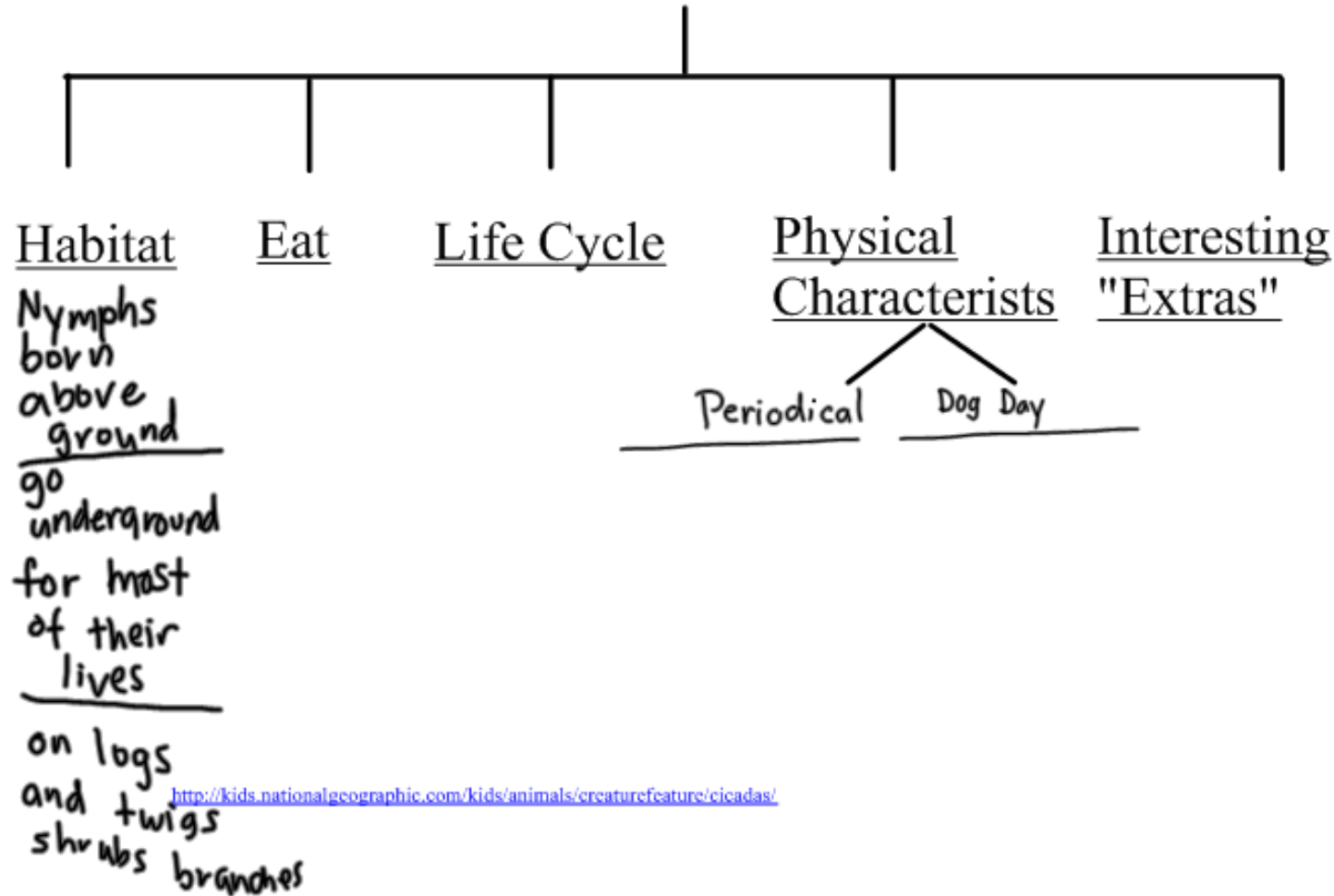
Beginners Use Tree Maps to Sort Information into Categories
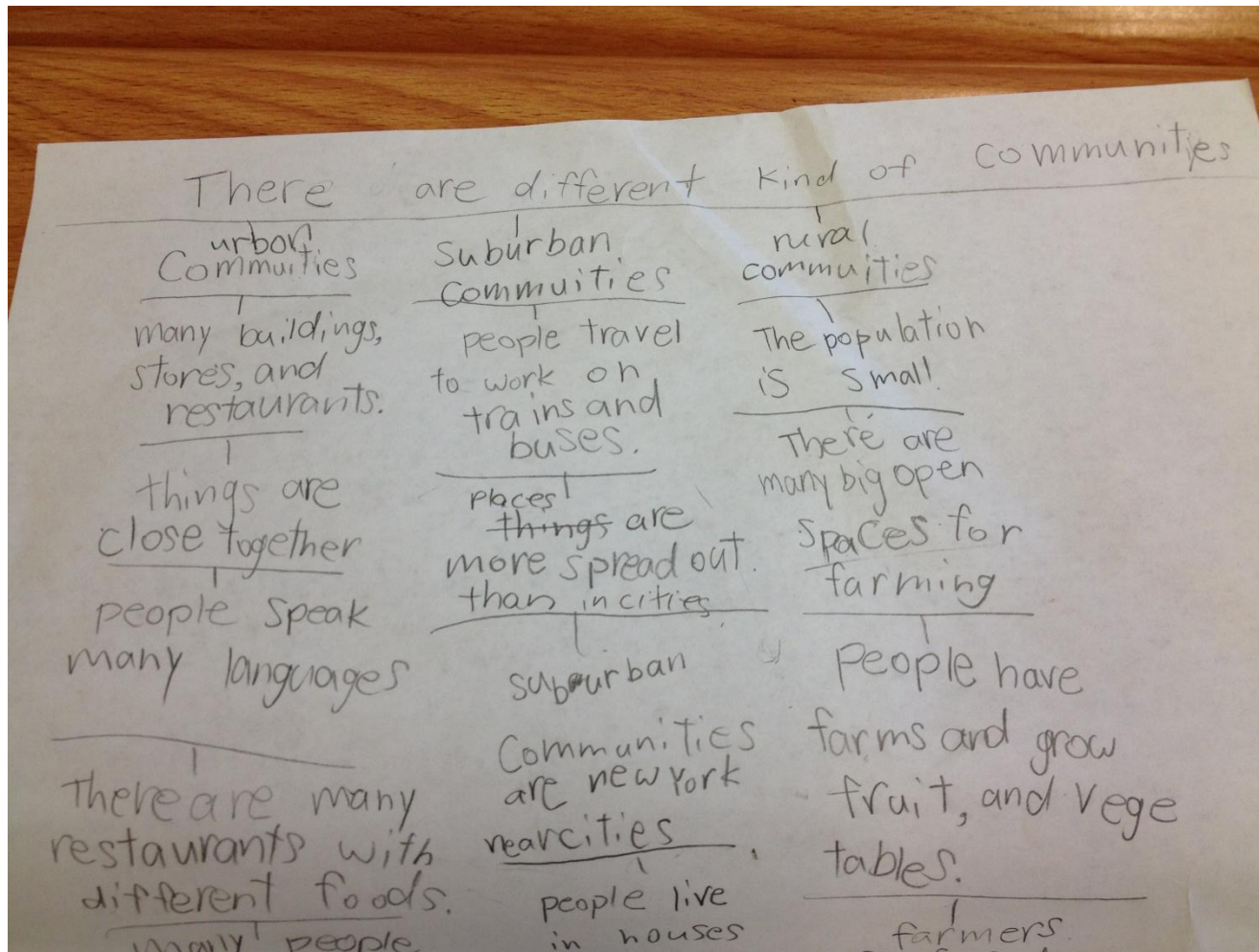
Then Beginners Use Flow Maps to Logically Sequence Information

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)

Tree Maps Combined with Flow Maps Help Beginners to Sort Information and Provide a Structure for Writing

Hana Kanehara   2/7
Mrs. Canon   ESL

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 community 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 live stock likes 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,

Use This Tree Map Again in Your Assessment to Have Students Cite Other Examples of "Show Not Tell"

In <u>Number the Stars</u>, Lois Lowry Uses the technique of "Show not Tell"

examples of showing anger

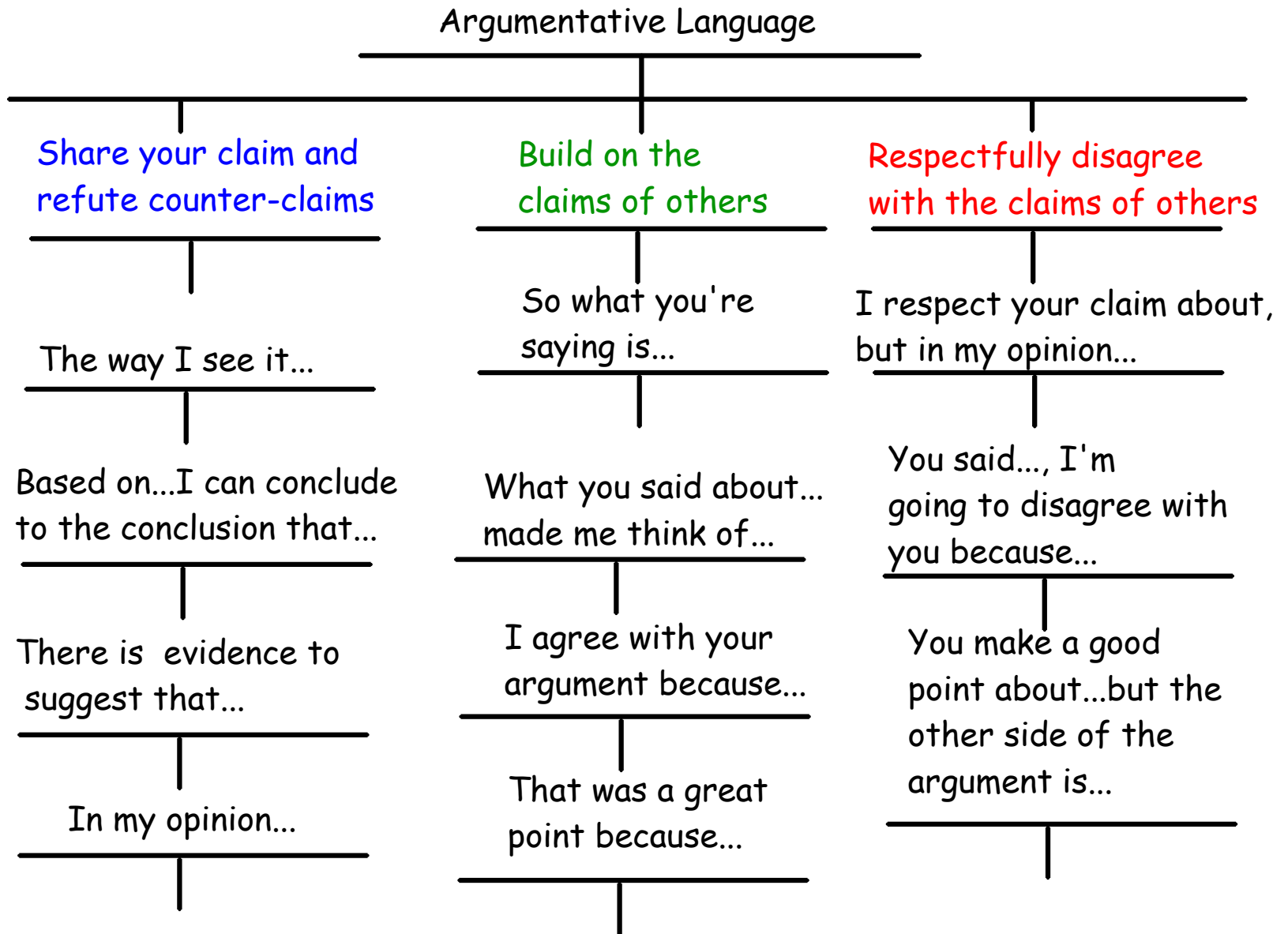Three years, Annemarie thought with contempt. Three years they've been in our country, and still they can't speak our language

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

Dont' 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
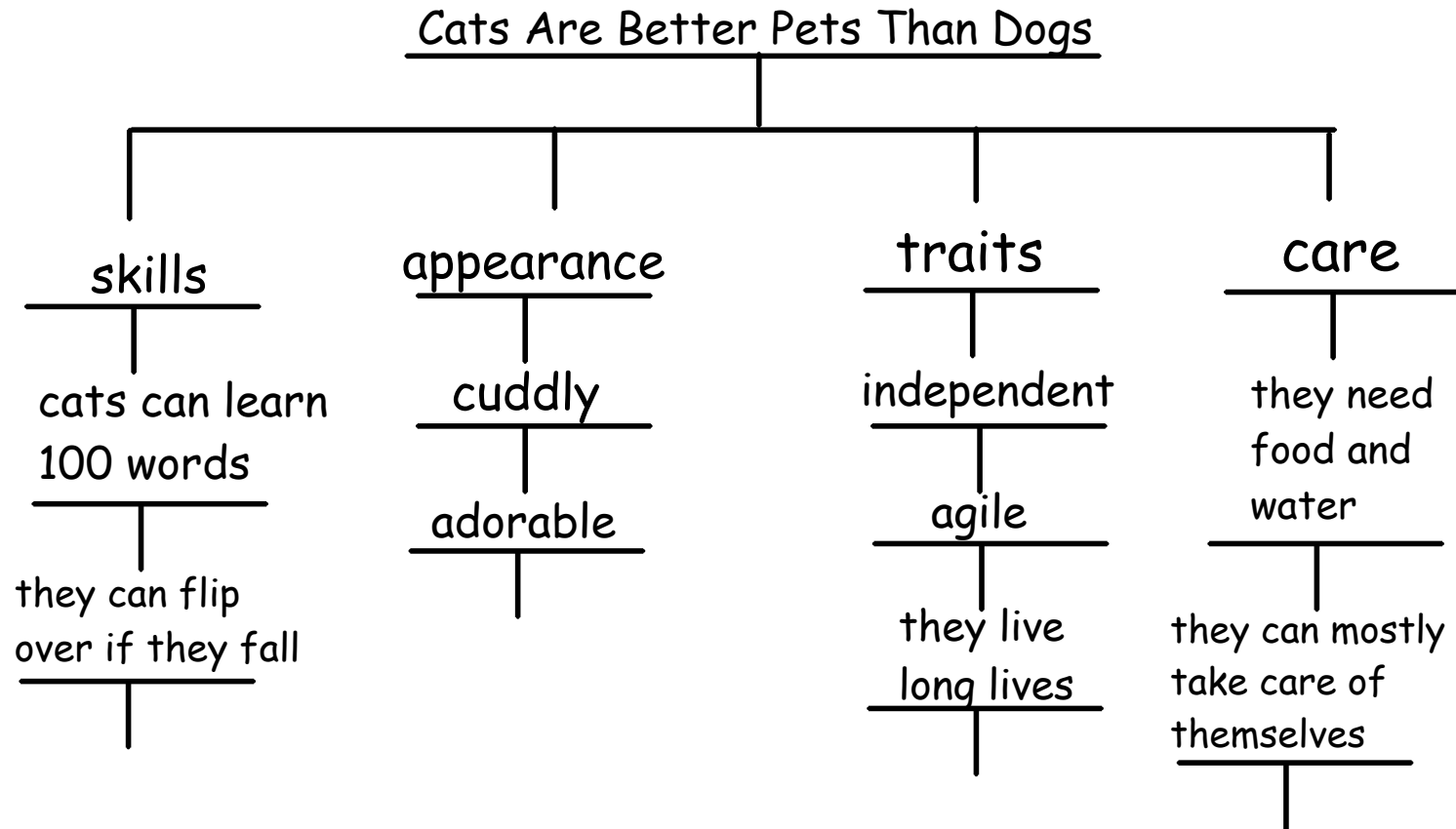
Cats Are Better Pets Than Dogs

- **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.
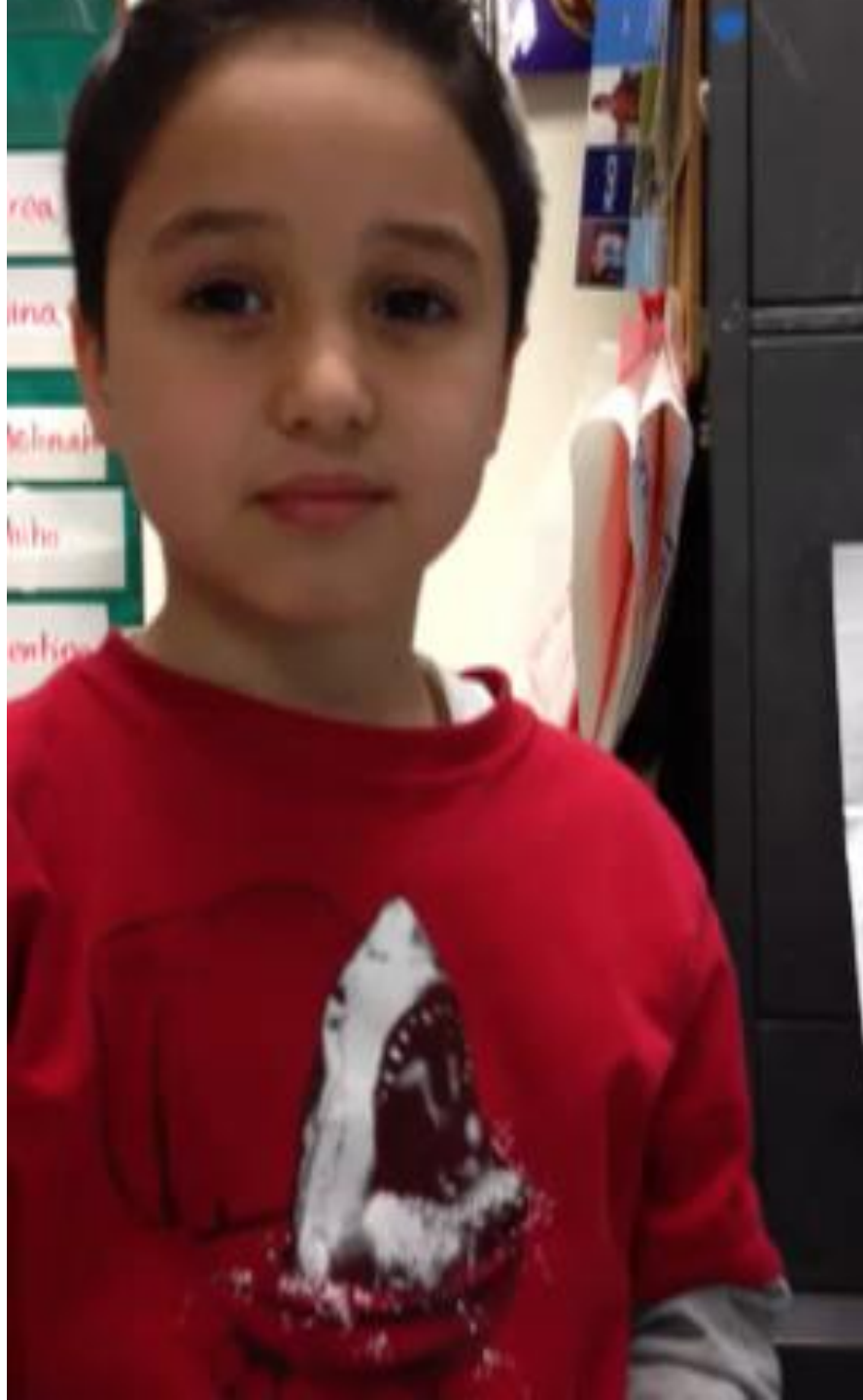
Providing support to answer questions.
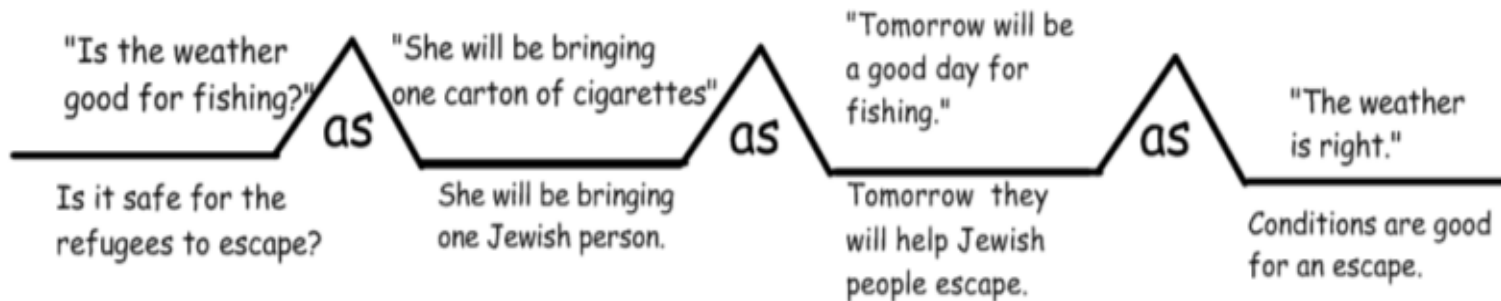
Providing support to answer questions.

Characters in <u>Number the Stars</u> Use Code Words
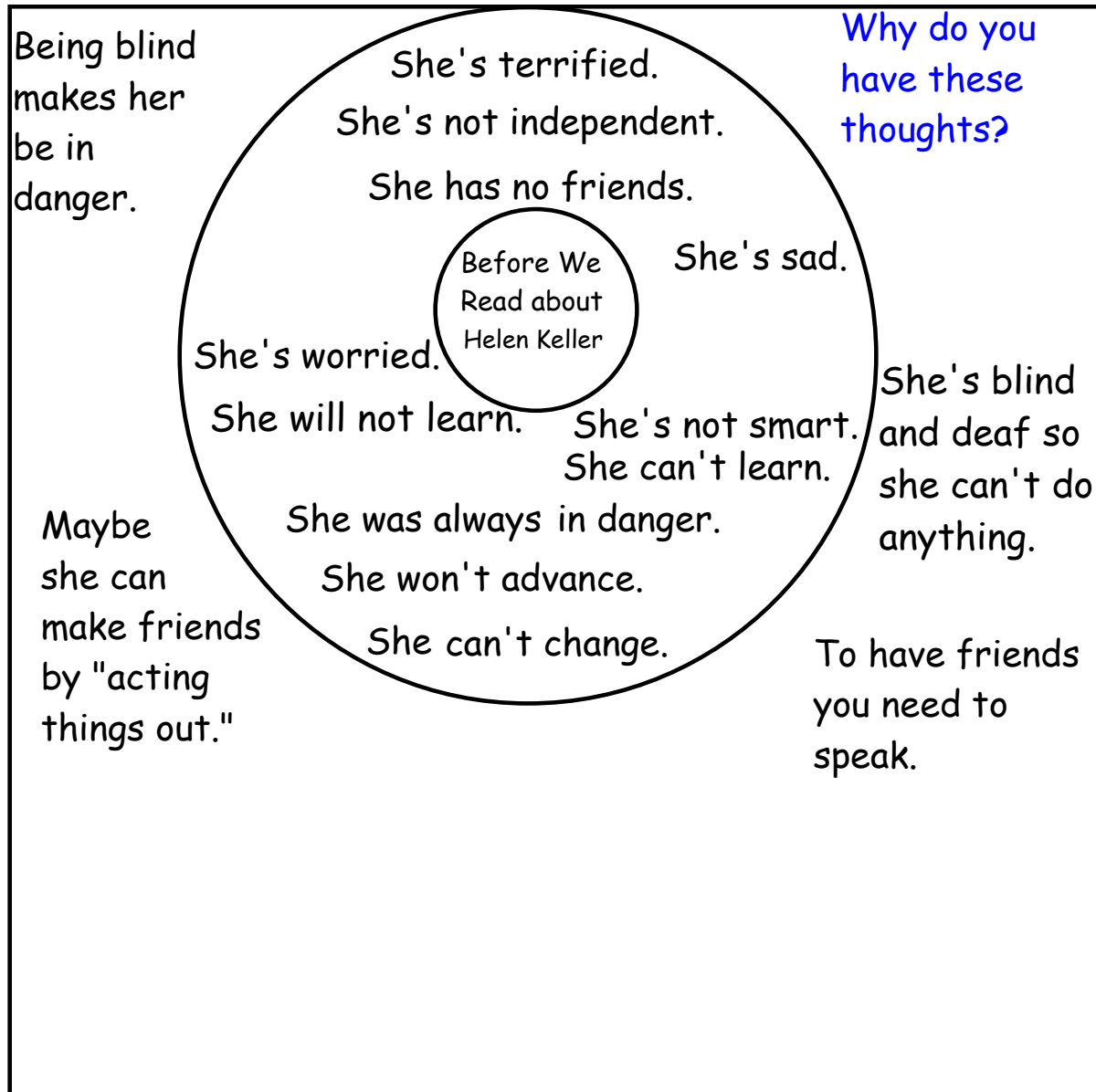## to Mask the True Meaning

"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."

Conditions are good for an escape.

really means

relating factor

A brace map to show the parts of informational texts

Add a Frame of Reference

Being blind makes her be in danger.

She's terrified.

She's not independent.

She has no friends.

Before We Read about Helen Keller

She's sad.

She's worried.

She will not learn.

She's not smart. She can't learn.

She was always in danger.

She won't advance.

She can't change.

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

She's blind and deaf so she can't do anything.

To have friends you need to speak.

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.
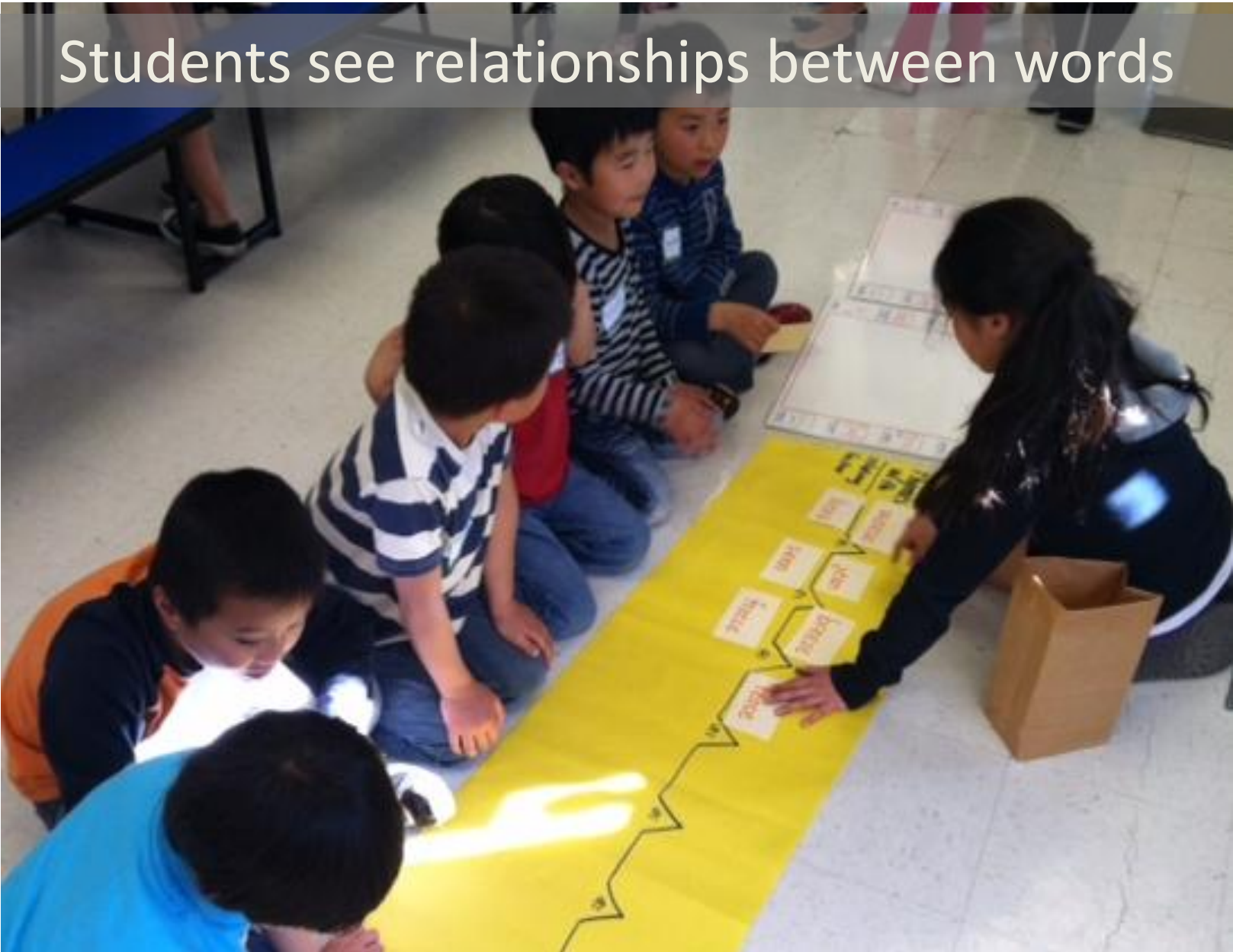
Before I read a biography about
Helen Keller, I thought Helen
would have a terrible life, she
couldn't be famous.
After I read the biography of
Helen Keller my point of view
changed because it said in the book
"She had a great life even before
she died" And the book also said
"She went to Rodcliffe Colledge
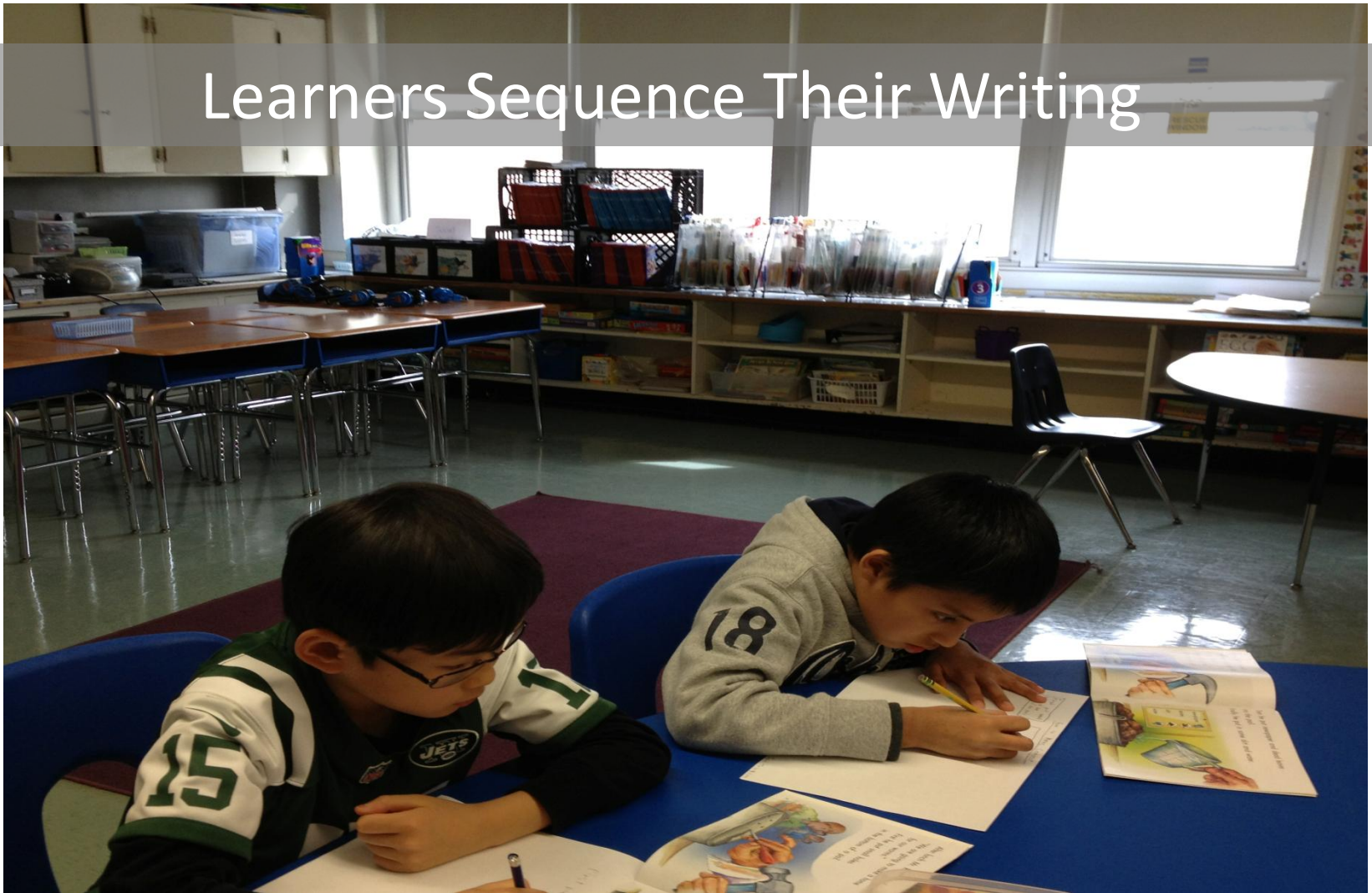and she learned and became
famous." One reason why my point

of view changed was because s
raduated college. Another reason
hy my point of view changed
as because she met presidents
d queens. In conclusion, my po
view about Helen Keller ch
because she was smart, cr
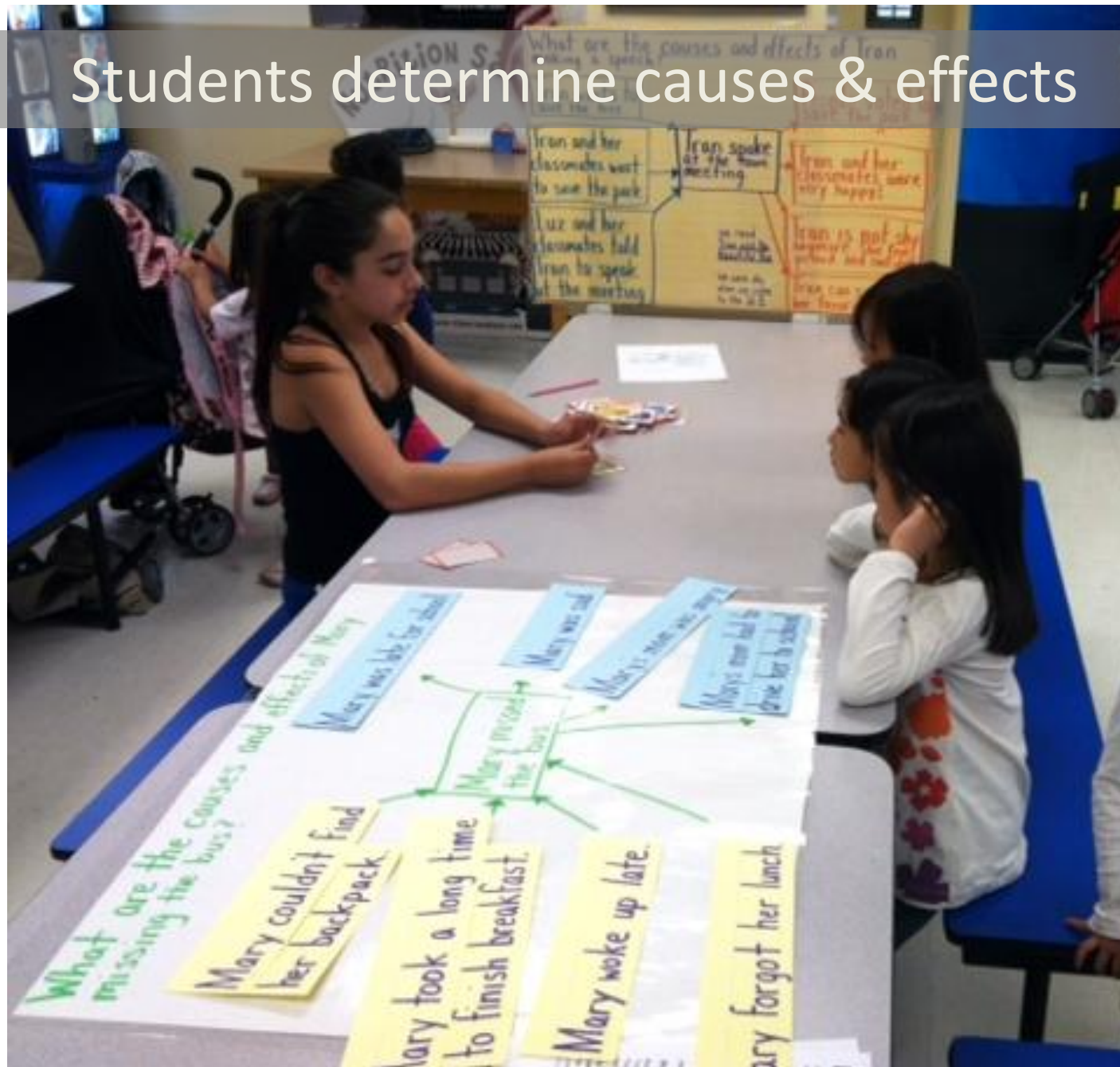nd famous. I thought

Students see relationships between words

Learners Sequence Their Writing
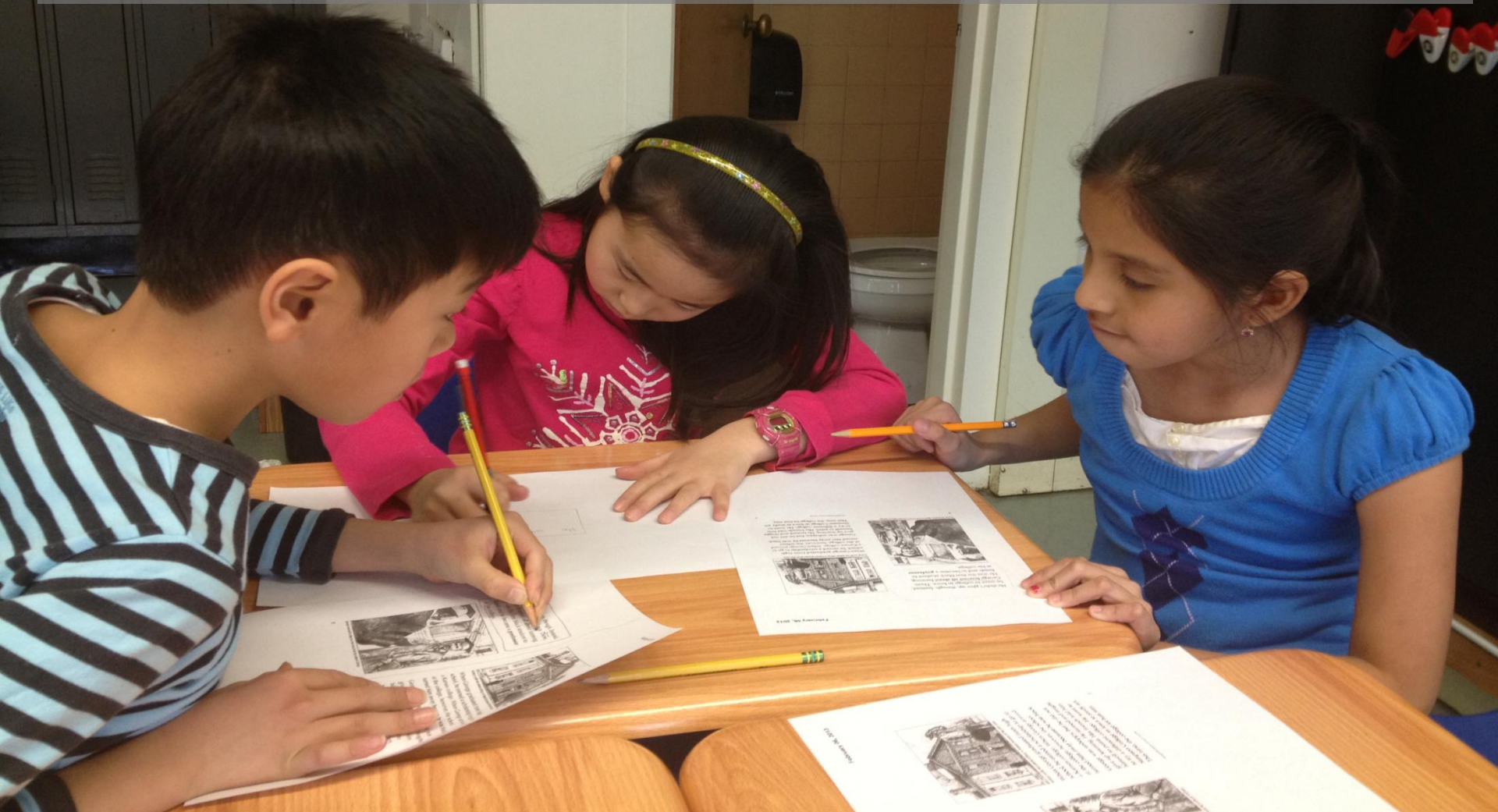
Students determine causes & effects

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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