

**Educational Impact**

# A Common Visual Language for Learning

Thinking Maps is a language of eight thinking process maps. Each map is graphically consistent and flexible so that students may easily expand the map to reflect the content pattern being learned.

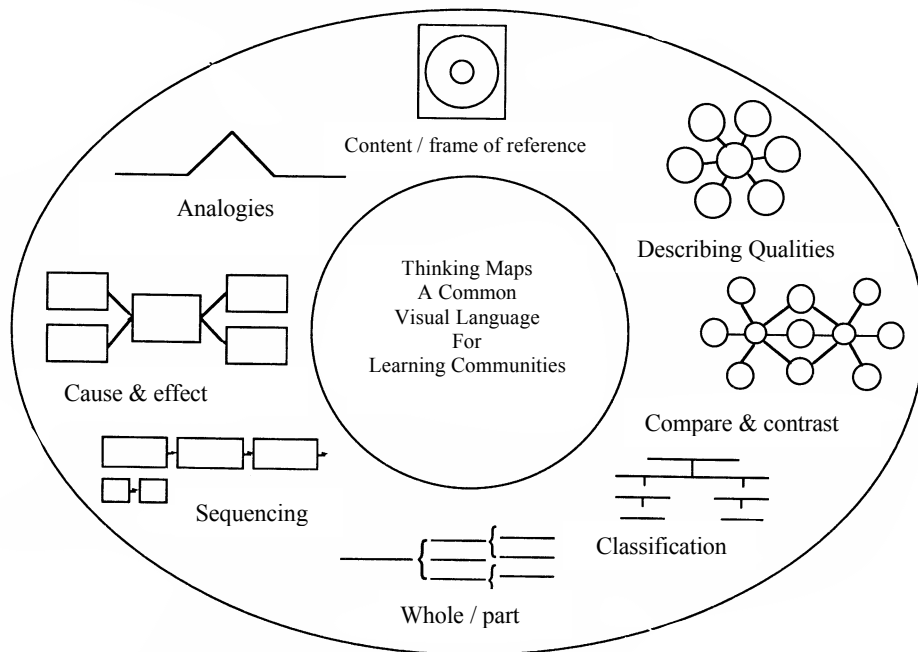


Educational Impact • [www.educationalimpact.com](http://www.educationalimpact.com)  
Designs for Thinking • [www.mapthemind.com](http://www.mapthemind.com)

Figure 6.3

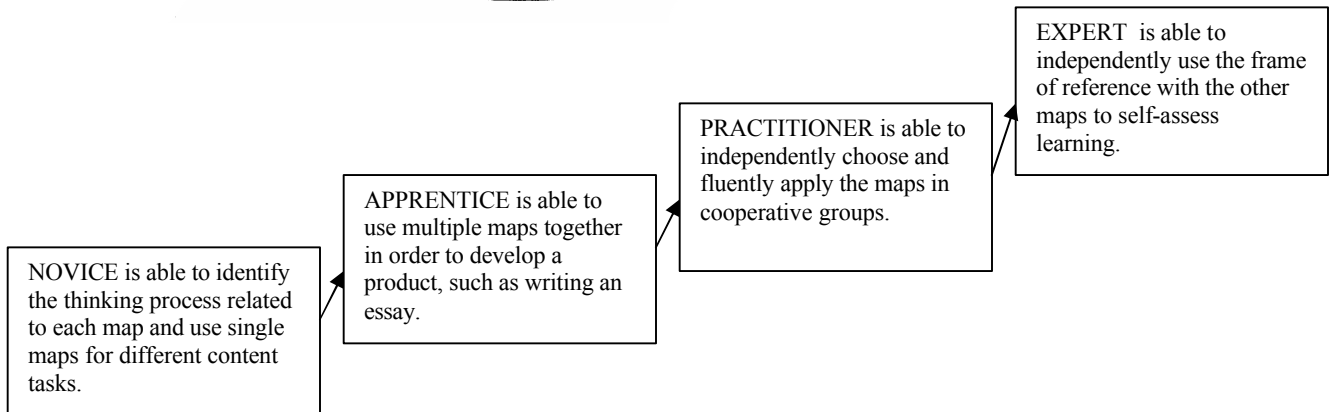
Thinking Maps Overview

**BACKGROUND:** Thinking Maps is a language, or tool-kit, or eight thinking process maps, developed by David Hyerle. Each map is graphically consistent and flexible so that students may easily expand the map to reflect the content pattern being learned. Thinking Maps are introduced to students as tools for reading and writing, content-specific learning, and for interdisciplinary investigations. Over time, students learn to use multiple maps together and become fluent in choosing which maps fit the immediate context of learning. Thinking Maps and Thinking Maps Software are used in whole schools through faculty training and follow-up.



BASIC TECHNIQUES

Begin with an application of each of the maps to a concrete object in order to understand the relationship between thinking processes and Thinking Maps  
 ? Expand each map to show big picture and then prioritize information by deleting ideas from maps for reading comprehension and writing.  
 ? Use multiple maps together to construct related patterns of learning, and use "frame" to identify frames of reference.



Source: Hyerle, D. (1999b). Visual tools video and guide (p. 15). Lyme, NH: Designs for Thinking. Copyright © 1999 by David Hyerle

Figure 6.2

## Graphic Primitives and Definitions

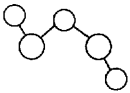
### primitives



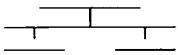
The Circle Map is used for seeking context. This tool enables students to generate relevant information about a topic as represented in the center of the circle. This map is often used for brainstorming.



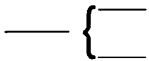
The Bubble Map is designed for the process of describing attributes. This map is used to identify character traits (language arts), cultural traits (social studies), properties (sciences), or attributes (mathematics).



The Double Bubble Map is used for comparing and contrasting two things, such as characters in a story, two historical figures, or two social systems. It is also used for prioritizing which information is most important within a comparison.



The Tree Map enables students to do both inductive and deductive classification. Students learn to create general concepts, (main) ideas, or categories headings at the top of the tree, and supporting ideas and specific details in the branches below.



The Brace Map is used for identifying the part-whole, physical relationships of an object. By representing whole-part and part-subpart relationships, this map supports students' spatial reasoning and for understanding how to determine physical boundaries.



The Flow Map is based on the use of flowcharts. It is used by students for showing sequences, order, timelines, cycles, actions, steps, and directions. This map also focuses students on seeing the relationships between stages and substages of events.



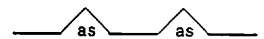
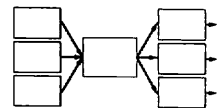
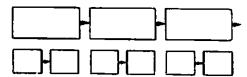
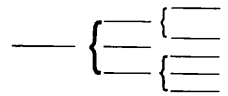
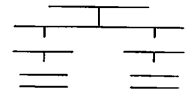
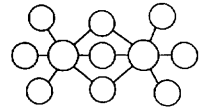
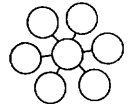
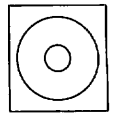
The Multi-Flow Map is a tool for seeking causes of events and the effects. The map expands when showing historical causes and for predicting future events and outcomes. In its most complex form, it expands to show the interrelationships of feedback effects in a dynamic system.



The Bridge Map provides a visual pathway for creating and interpreting analogies. Beyond the use of this map for solving analogies on standardized tests, this map is used for developing analogical reasoning and metaphorical concepts for deeper content learning.

### Thinking Maps and the Frame

### expanded maps



### The Frame

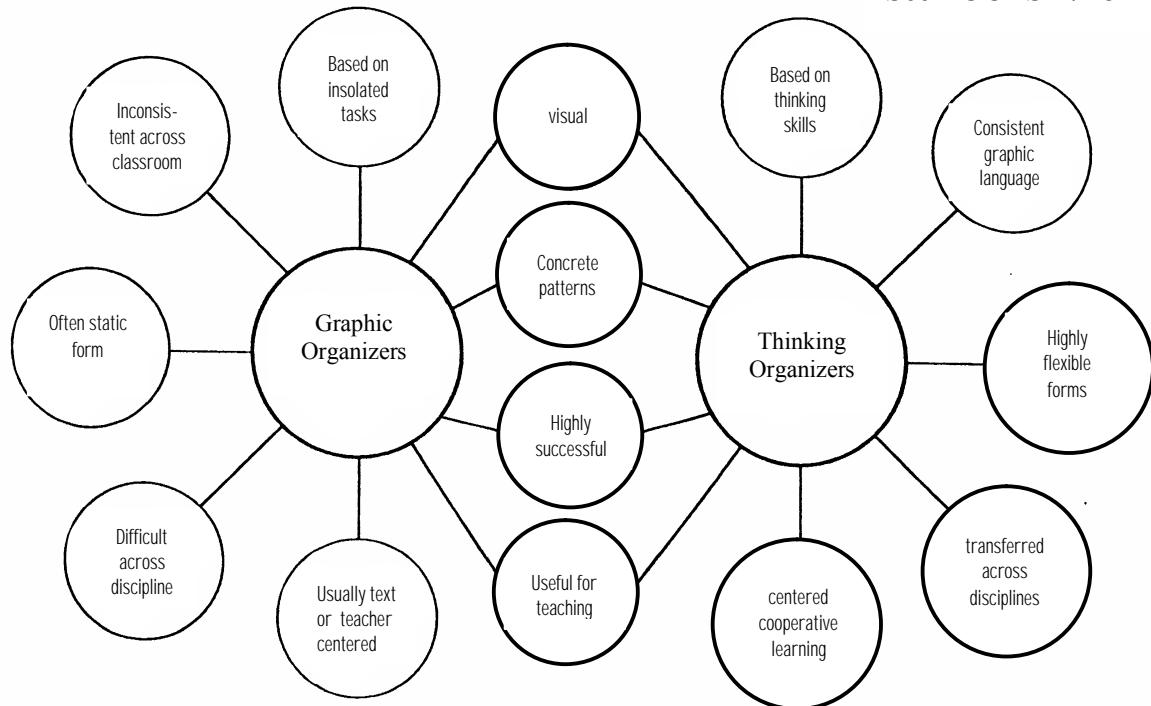
The "metacognitive" Frame is not one of the eight Thinking Maps. It may be drawn around any of the maps at any time as a "meta-tool" for identifying and sharing one's frame of reference for the information found within one of the Thinking Maps. These frames include personal histories, culture, belief systems, and influences such as peer groups and the media.



## Comparing Visual Tools

Below is a Double Bubble Map showing the similarities and differences between graphic organizers and Thinking Maps.

See TOOLS P.1-5



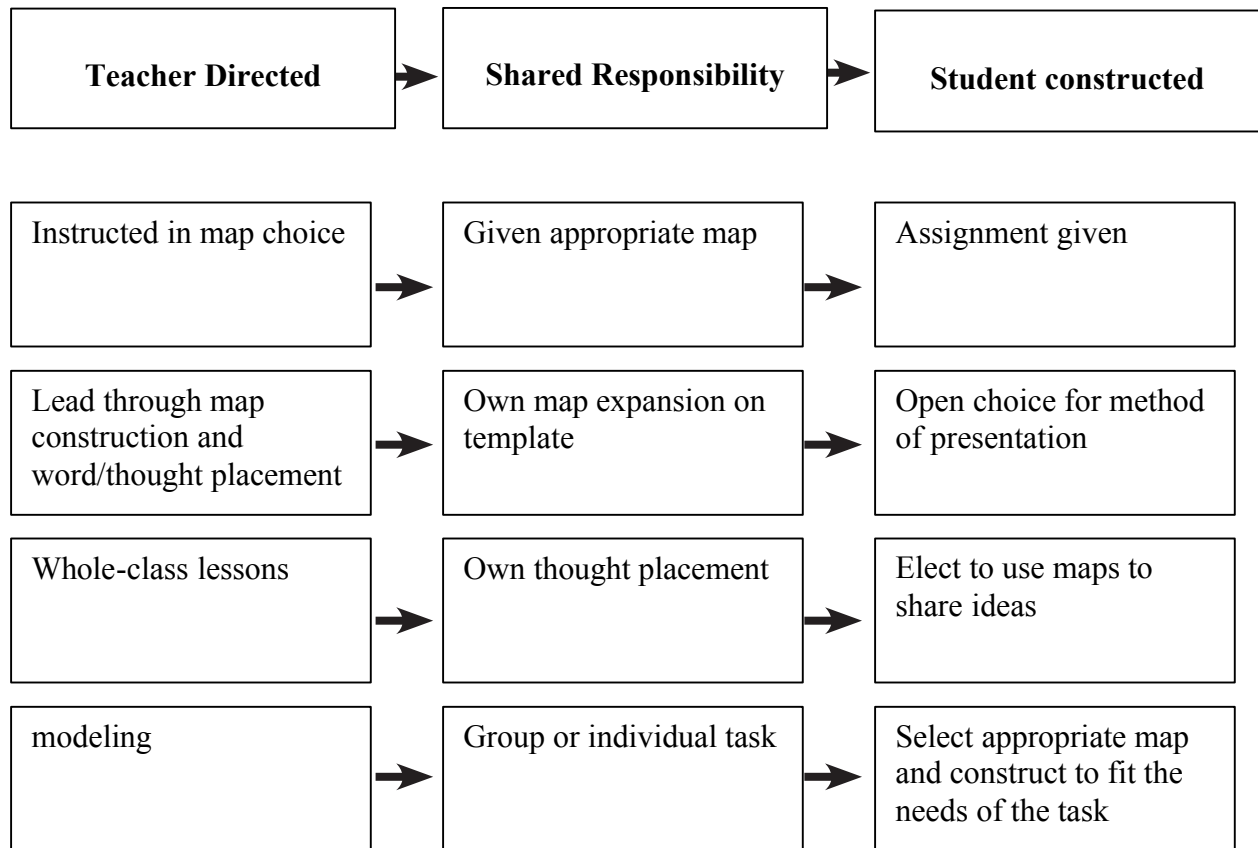
The most important difference between Thinking Maps and graphic organizers is that each Thinking Map is based on a fundamental thinking skill.

This thinking skills foundation supports three intellectual outcomes:

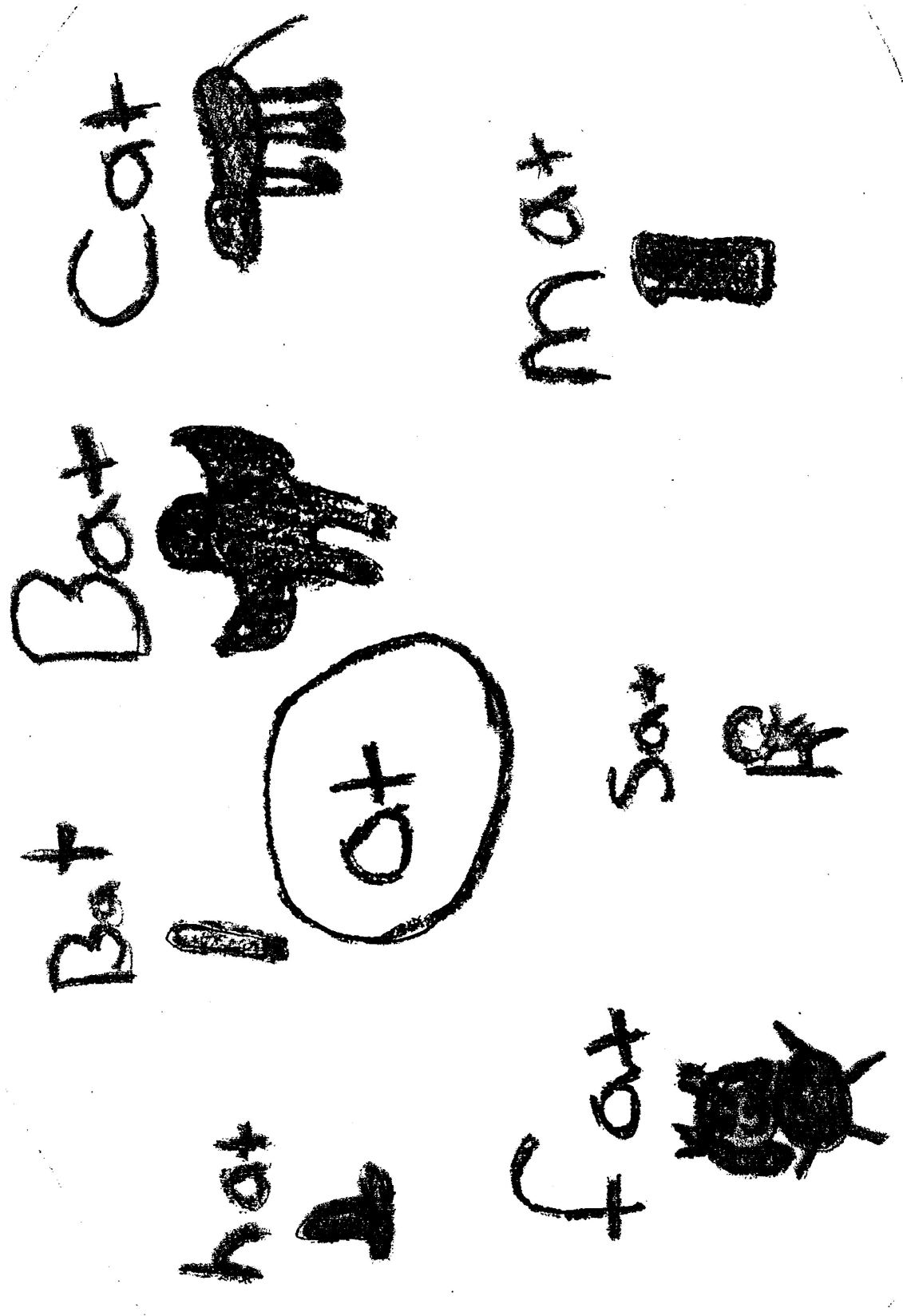
- First, students learn clearly stated definitions for eight fundamental thinking skills.
- Second, students are applying multiple thinking skills (as Maps) to complex, multi-step problems; and,
- Third, students are empowered to use these visual tools for transferring thinking skills across disciplines.

Figure 6.2

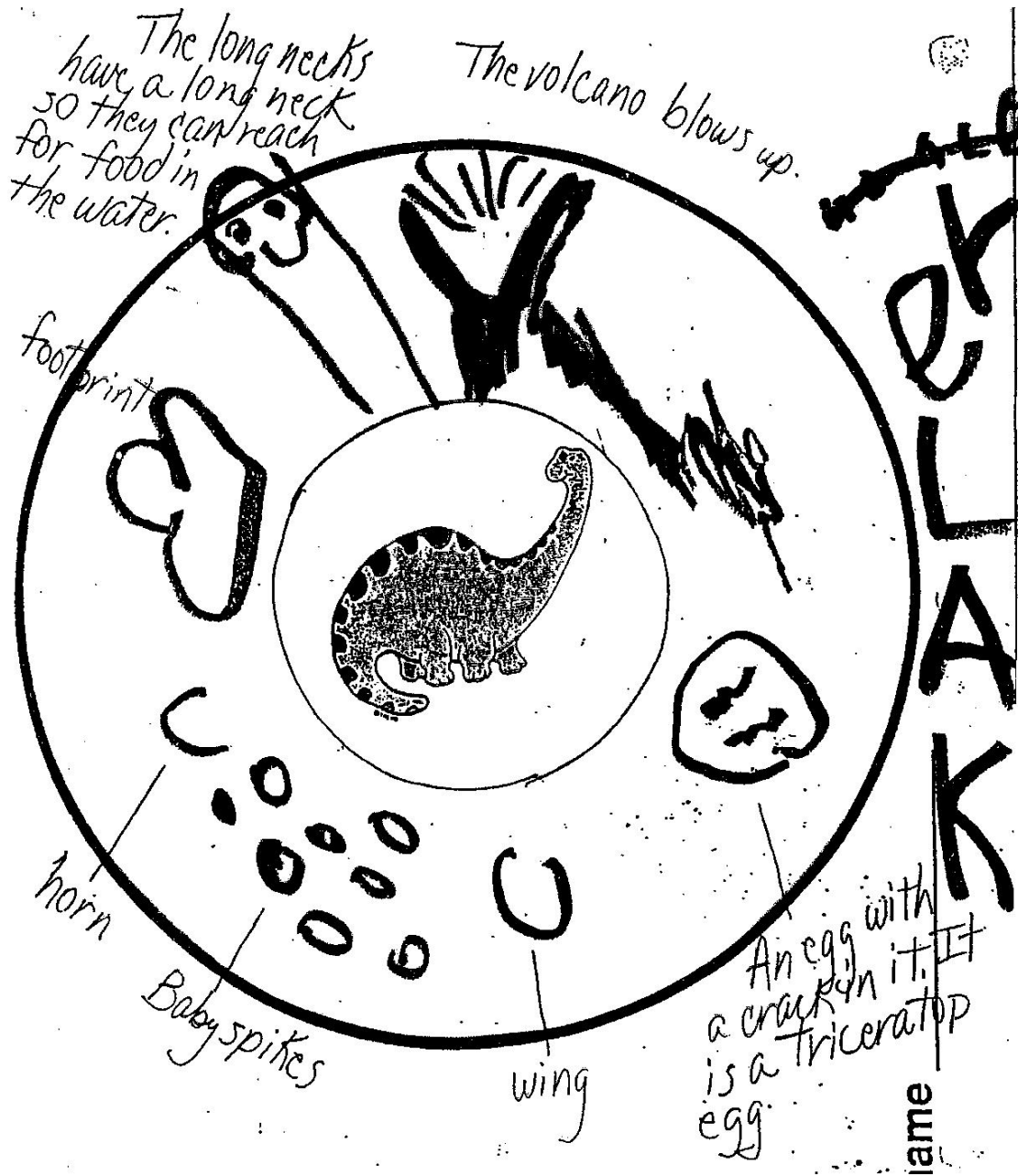
How the Use of Thinking Maps Evolved at Hanover Street School

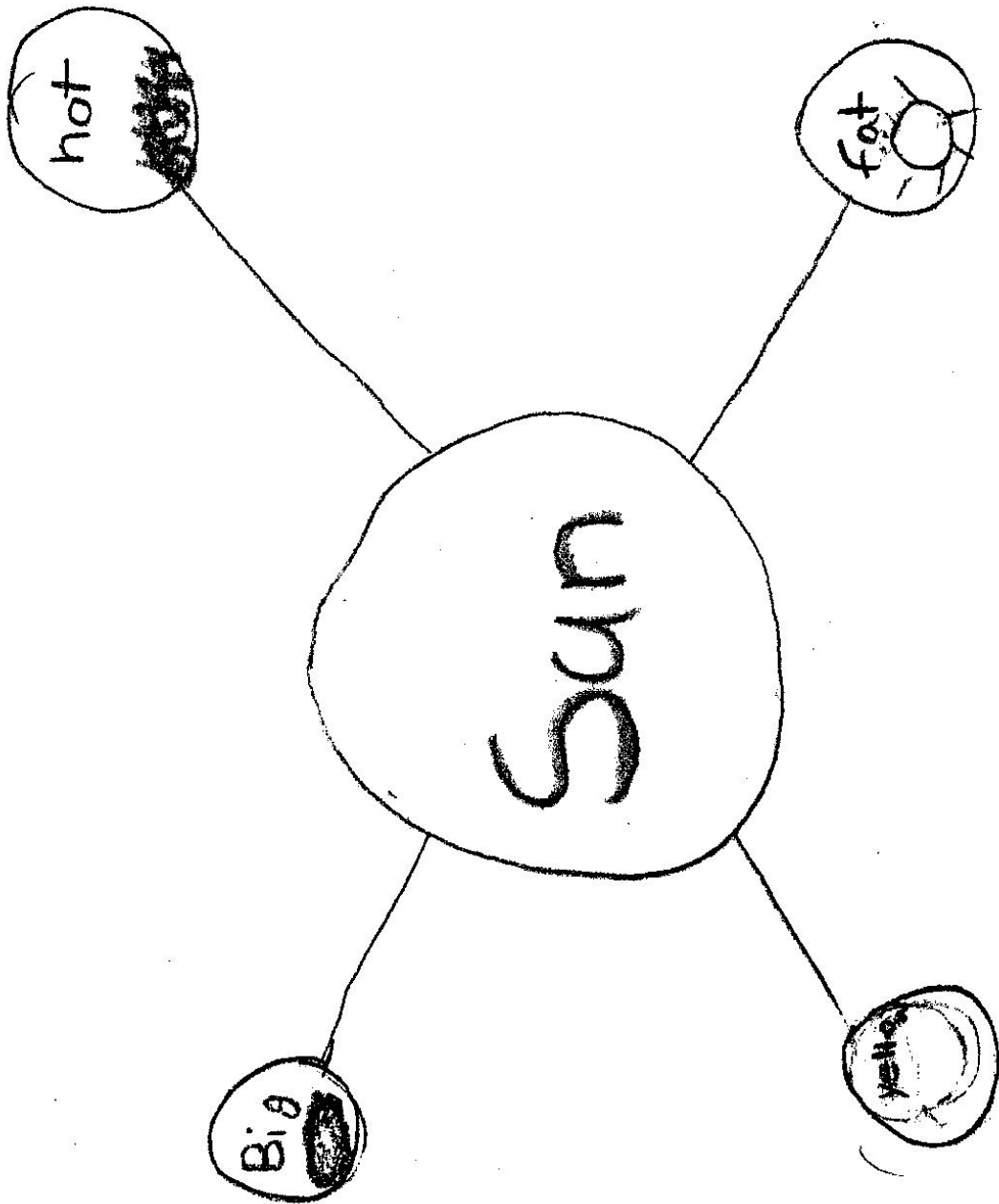


Miami FL  
Joe Hall Elementary

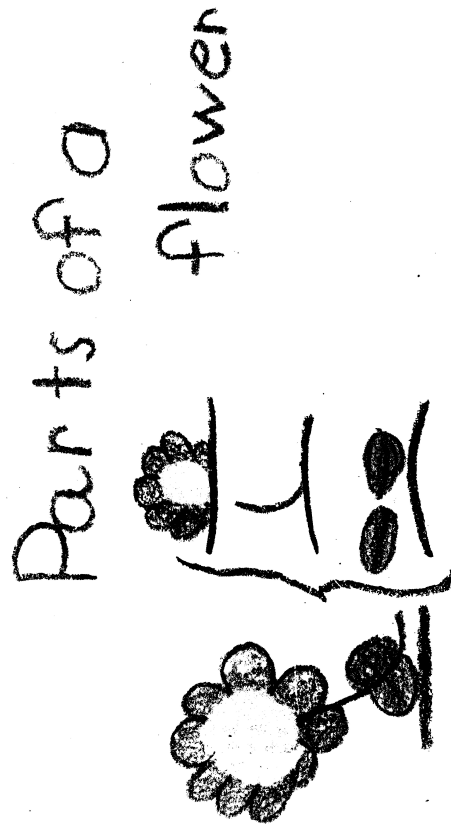


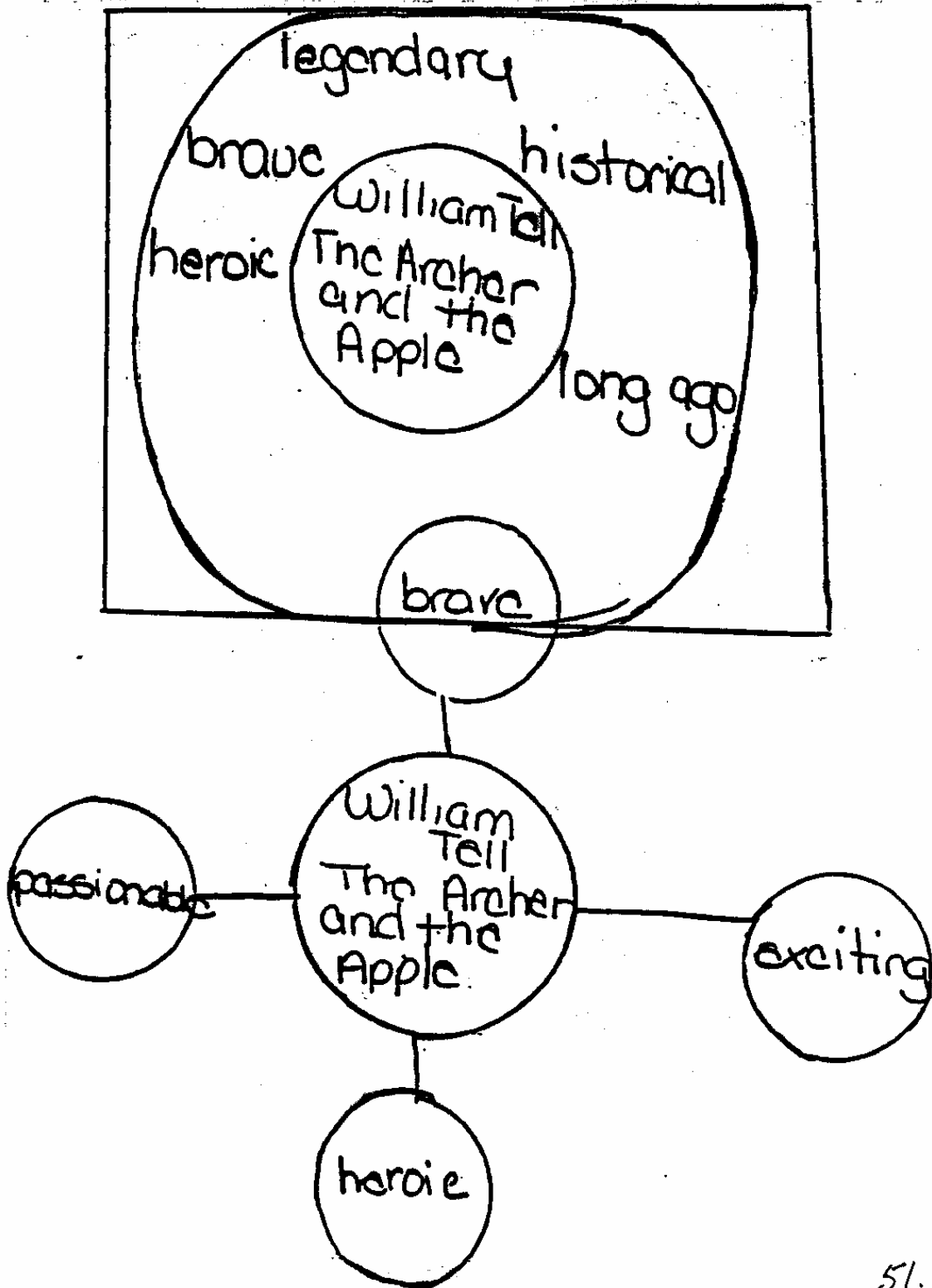
Draw Your Thinking  
Kindergarten Student



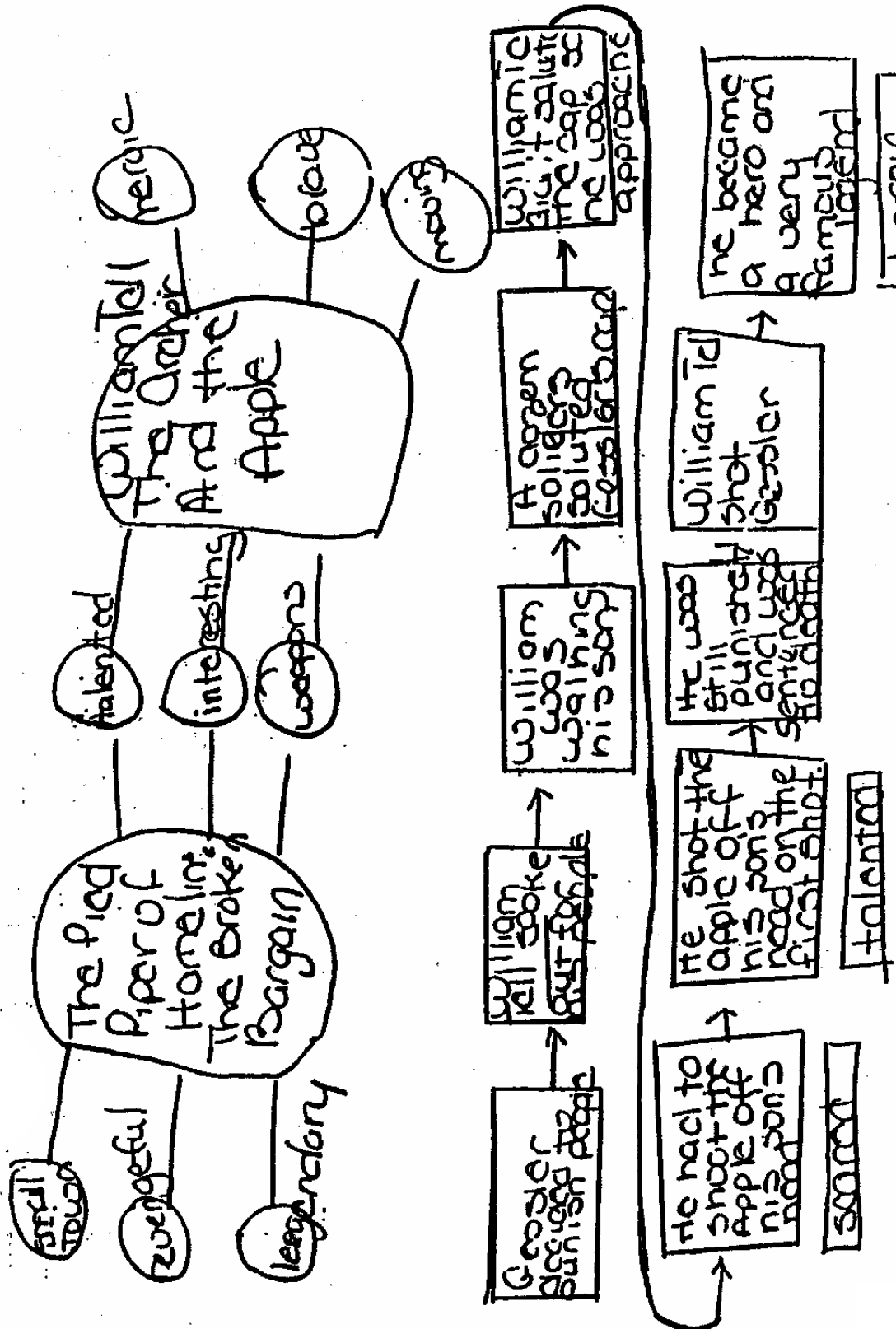


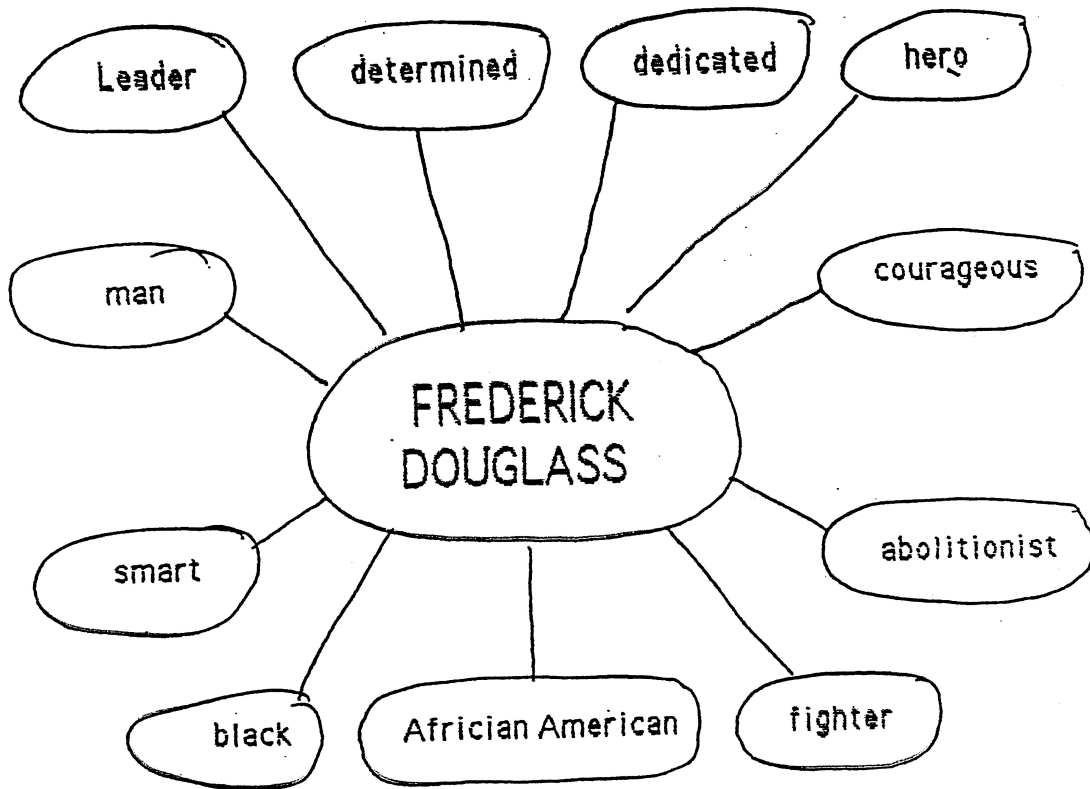


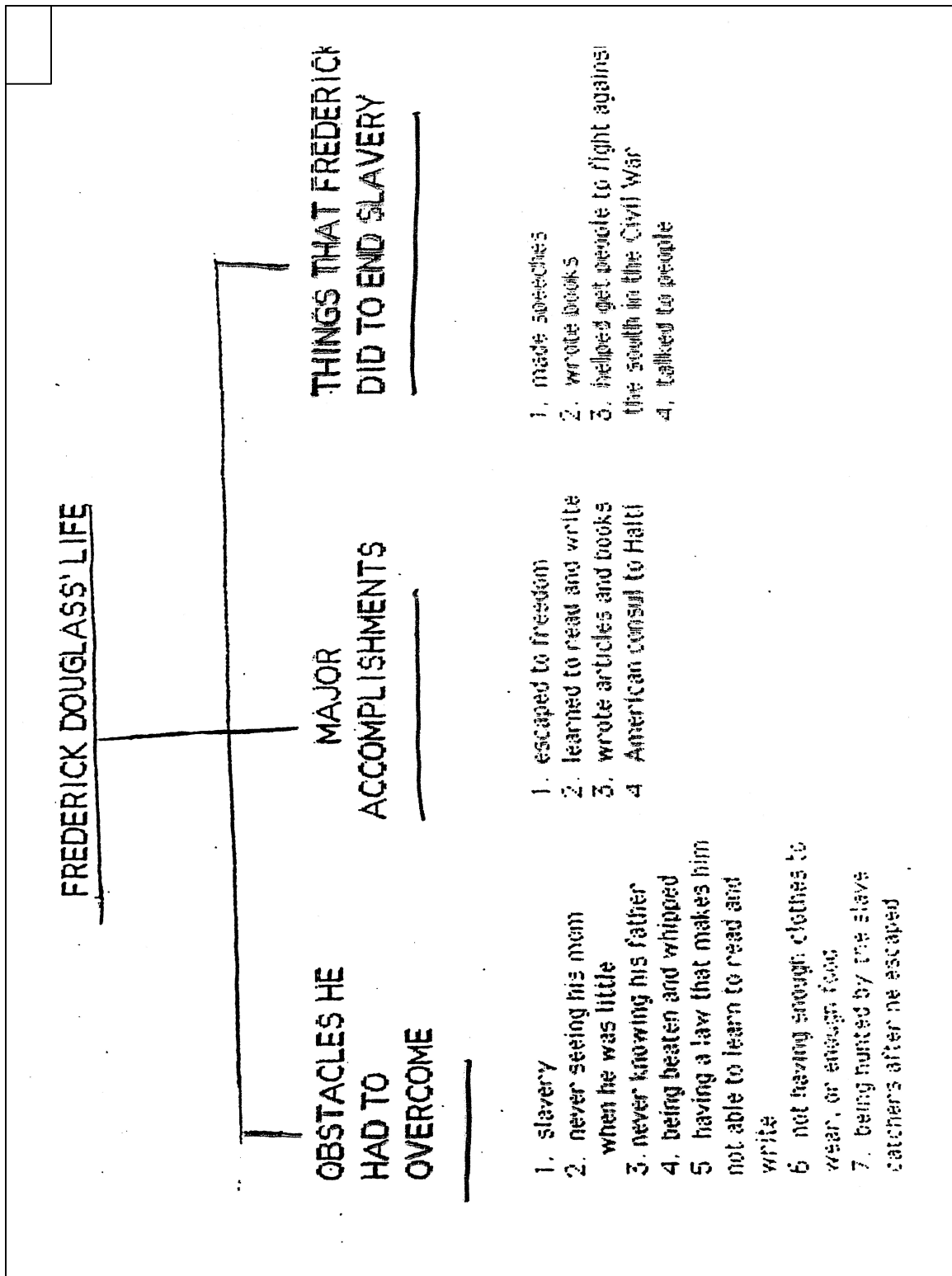


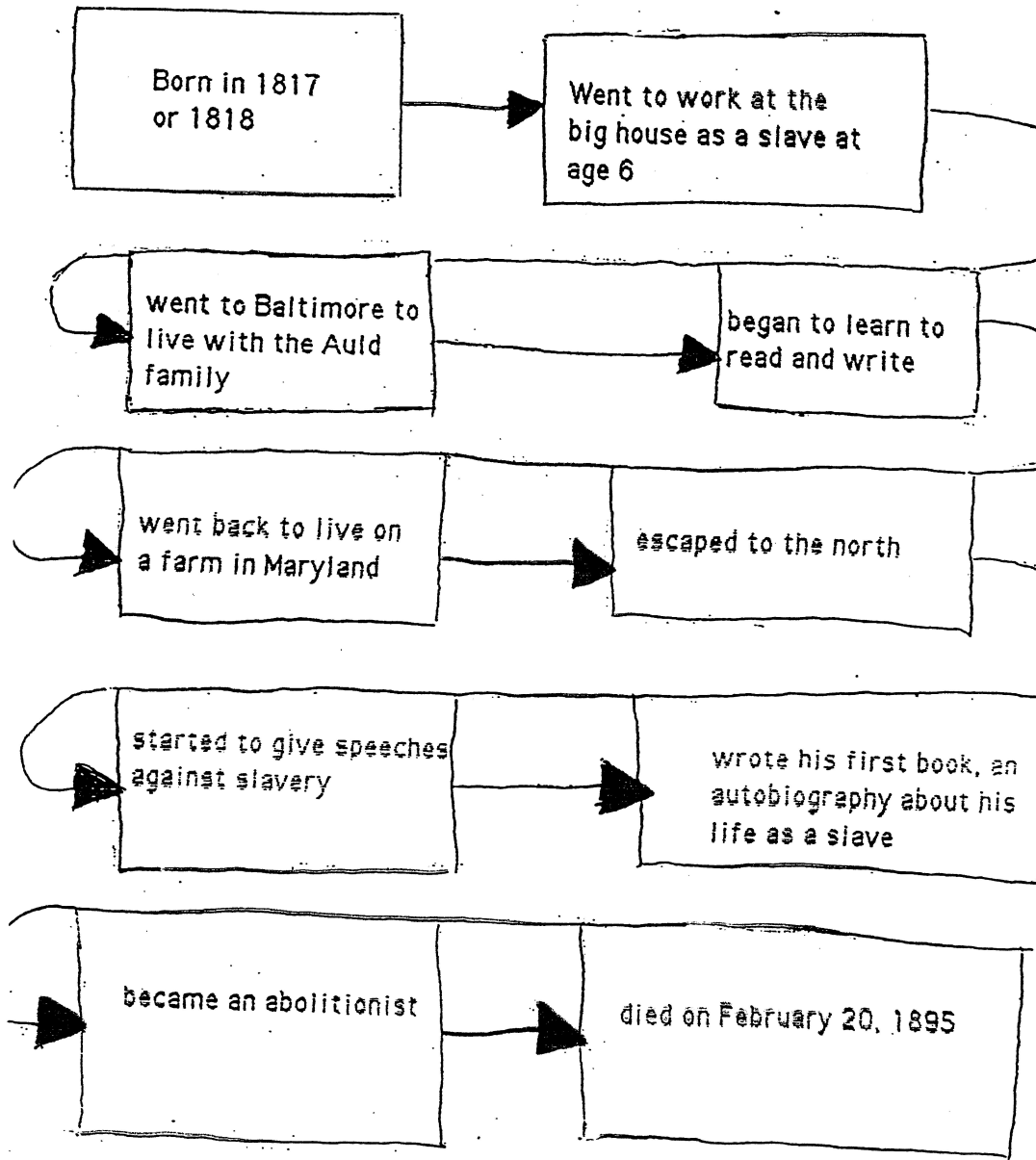


51.









P.S.8

Class 5-203

Nicole Fowley

Feb. 13, 1995

Frederick Douglass was born a slave around 1817 or 1818. He spent most of his early childhood roaming and playing around in the woods. Frederick never really saw his mother for she would be busy working in the fields. Night and day she worked in the plantation, and hardly ever got to see Frederick. If she did see him it would be late at night when he was sound asleep.

When Frederick was six, his grandma told him that he was going on a long journey. His grandmother took him to the big house on the plantation, and told him to go and play with the children. After awhile, one of the children said that his grandmother had left. He ran out into the road to see where she was, and realized that she had disappeared. When he realized that she had left him, he cried and cried. This is when his childhood ended and his life as a slave began.

Frederick labored on the plantation, working long, hard days. Life as a slave was really awful. He got very little rest, not enough food, and he never had enough clothing to wear. If he did not obey the owner, he was whipped or hurt in some other way.

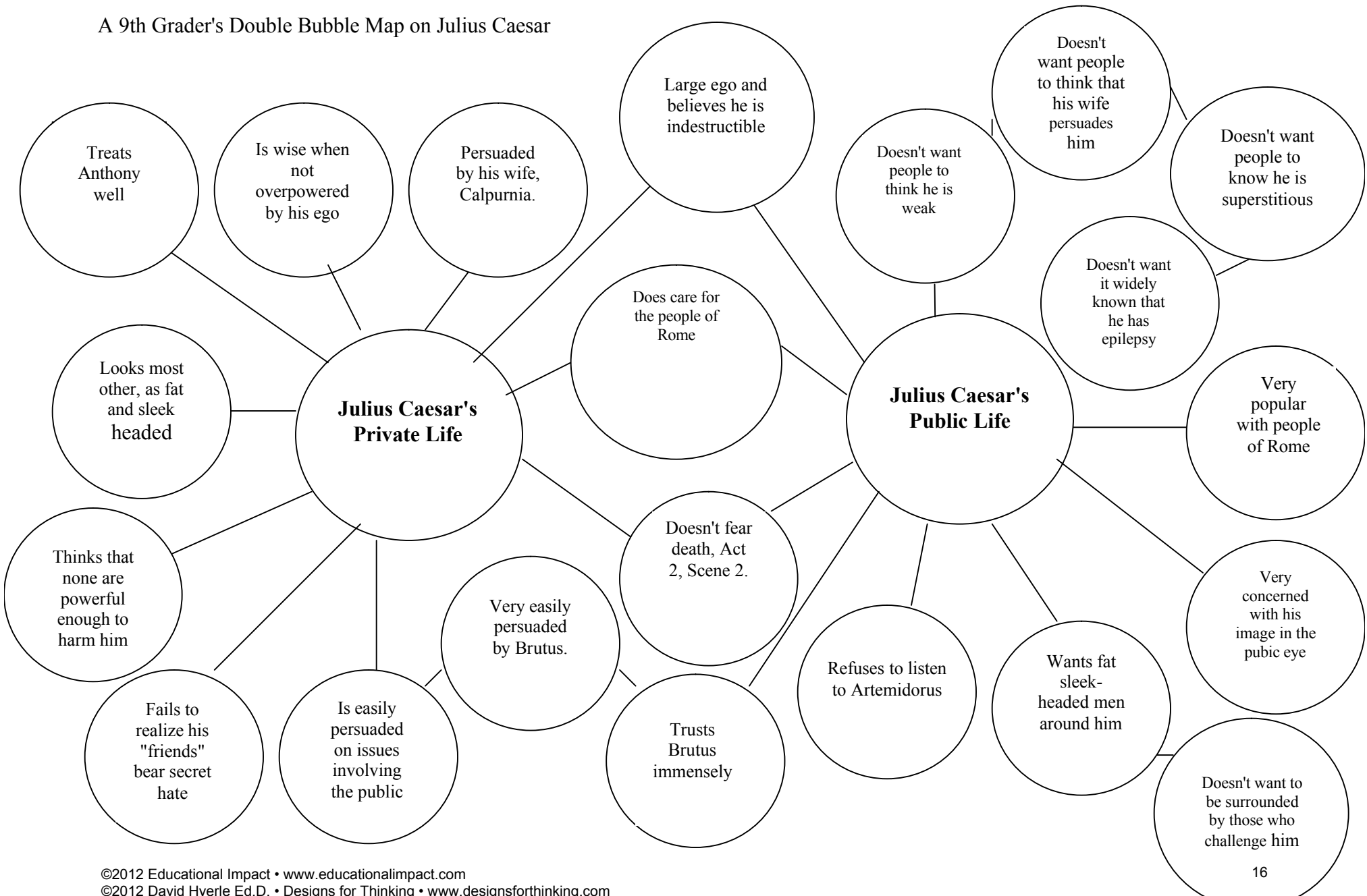
When Frederick was eight he was sent to Baltimore to live with the Auld family. There he took care of the master's infant son. Sophia Auld became a friend to Frederick, and began to teach him how to read and write. It was against the law to teach him how to do so. When Mr. Auld found out, he put a stop to the learning. Frederick then realized that reading and writing was important, so he continued to secretly teach himself. He did this by sometimes sneaking newspapers and studying them, on days when he could.

He began to read everything he could about slavery and the abolitionists, the people who fought against slavery. This included reading about the free states in the north where there was no slavery. He hated slavery more and more, and knew that one day he would live in the north.

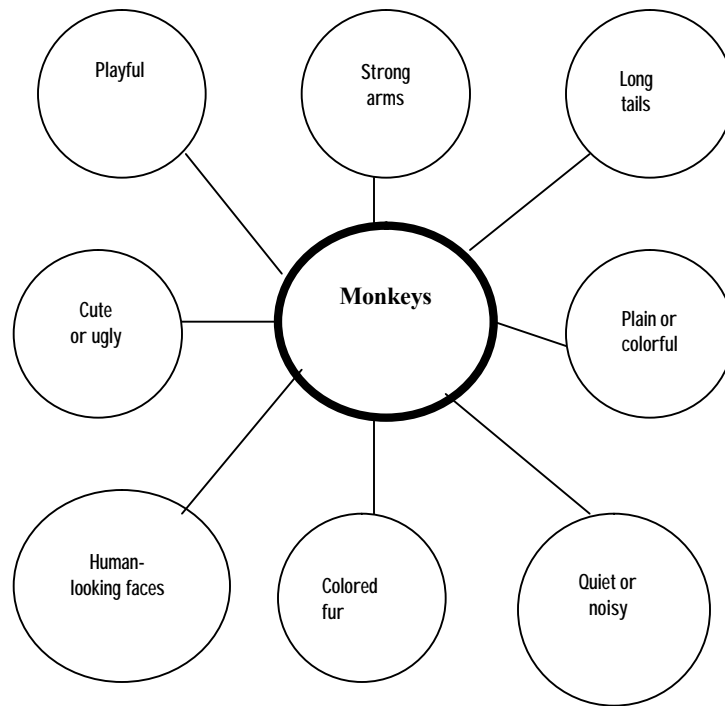
Before he escaped to the north, he taught other slaves to read and write. He was beaten by his masters a number of times, and this made him even more determined to escape. Finally he escaped to the north and he became an abolitionist. Frederick was a very good speaker and writer and many people did not believe he had been born a slave. This was the reason that he wrote his

Figure 6 16

A 9th Grader's Double Bubble Map on Julius Caesar

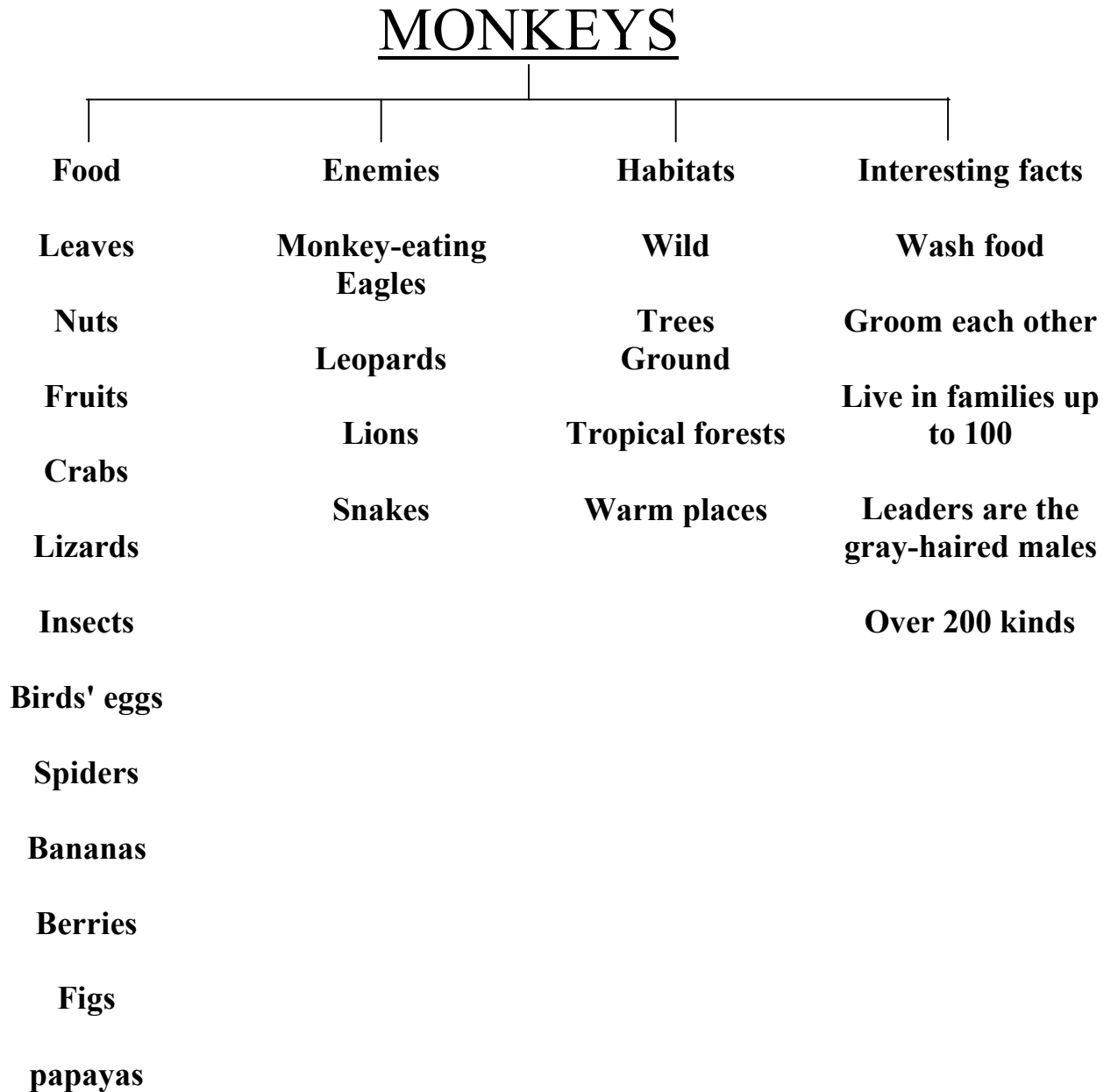


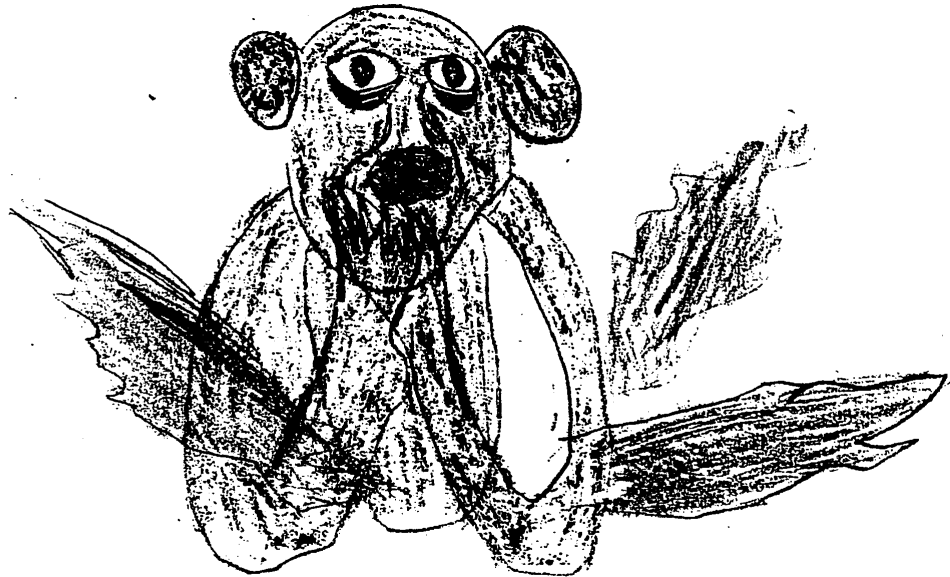






**Monkeys have strong arms  
And long tails. They have  
human looking faces.**





Monkeys like different kinds of foods. Some like nuts, leaves, and fruits. Other monkeys like birds' eggs and insects.

---

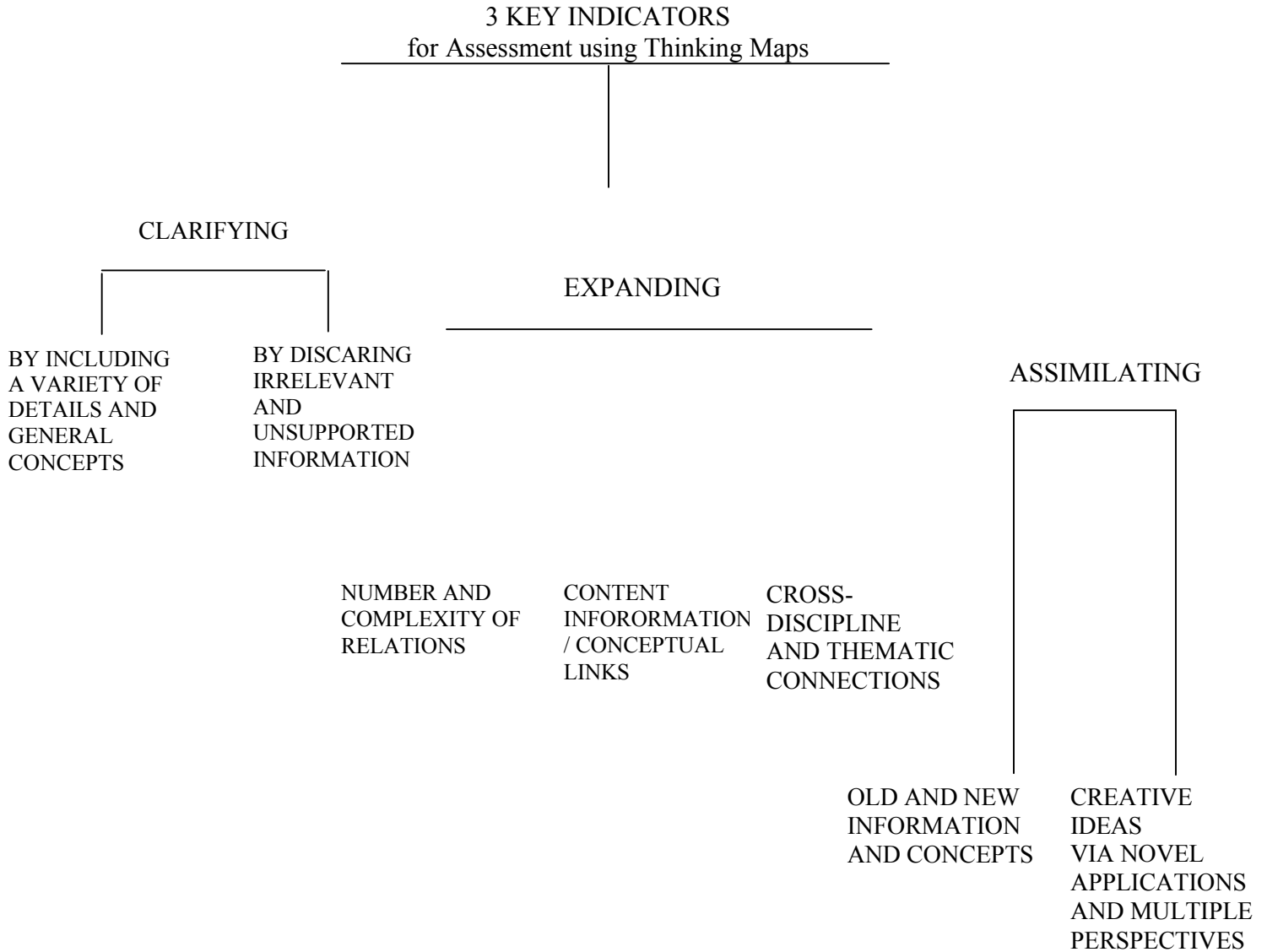


Monkeys have enemies. The monkeys that live in trees must look out for a monkey-eating eagle. The ones on the ground look out for leopards, lions and snakes.

Thinking Maps: A common Visual Language for Learning

Figure 6.5

Tree Map of Assessment



Copyright 1996 Innovative Learning Group, David Hyerle. Reprinted by permission.

FIGURE 1.3

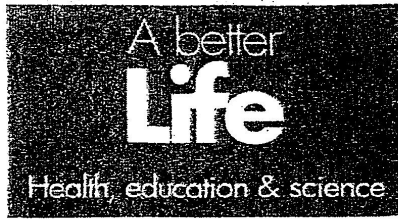
Lauren's Flow Map for Writing a Narrative

Testing

I used the flow map, and we have been using them so much that when I got done my first box I didn't need to use it because the flow map was in my head. I got my topic sentence down and my details just seemed to flow right out.



6D • MONDAY, MARCH 4, 2002 • USA TODAY

By Greg Eans  
for USA TODAY

Always thinking: Janie MacIntyre wants to use Thinking Maps throughout Rocky Mount, N.C.

## Teachers make the utmost of McAuliffe funds

### But the grant program will run out of money in July

By Tracey Wong Briggs

and Tamara Henry  
USA TODAY

Math teacher Janie MacIntyre used her \$23,000 fellowship to see whether her success with Thinking Maps could be replicated throughout Rocky Mount, N.C. Thinking Maps, which use diagrams such as flowcharts to present lessons so the brain can easily process them, were introduced at Edwards Junior High in 1993. MacIntyre, who teaches low-performing eighth-graders, saw her students make the biggest gains in the school.

Her year-long study included training eighth-grade math teachers at the other junior highs in her district to use Thinking Maps and analyzing three years of state End-of-Grade test scores for 200 low-performing students.

Using teacher logs of their Thinking Map use and videotapes of their teaching, MacIntyre found that the more the teachers used the maps, the better their students did on the EOGs. Overall, developmental growth for low-performing students quadrupled.

"The McAuliffe Fellowship was the perfect thing for me to do," MacIntyre says. Quantifying what works is a big step in improving the teaching profession and improving instruction for all students, she says. In academia, "If you don't document it, it didn't happen."



# Appendix B

## Reading Comprehension Using Thinking Maps

by Marjann Ball

### Description of Treatment

#### Lesson Plan Using Thinking Maps Questions Sheet

During the 16-week semester, many reading skills were taught. For the purpose of this study, these reading skills were taught to both the experimental and control groups with the only difference being the use of Thinking Maps to teach and reinforce the reading skills in the experimental group.

For the first eight weeks of the semester, students in the experimental group were taught a reading concept using a Thinking Map and the control group was taught the same reading concept without the use of a Thinking Map. A short introduction of each Thinking Map was given at the beginning of each week with the reading concept for that week integrated into that Thinking

Map. Only one Thinking Map was introduced per week with the sequence of maps being Circle, Bubble, Double Bubble, Tree, Brace, Flow, Multi-Flow, and Bridge.

After the first eight weeks of instruction in the experimental group, any Thinking Maps that were appropriate for the reading concept being taught were implemented. Thinking Maps were modeled by the instructor during lectures and used regularly by the students for homework assignments, projects, and assessments. Modeling, questioning, and reinforcing of the maps were essential as the students learned to use the tools.

The following plan was used:

Week	Control Group	Experimental Group
1	Building vocabulary. How words come into our culture.	Building vocabulary with Circle Map. How words come into our culture using Circle Map.
2 & 3	Context clues. Related words.	Context clues using Bubble Map. Related words using Double Bubble Map.
4	Figurative language.	Figurative language using Tree Map.
5	Parts of a textbook. SQ3R (Survey, Question, Read, Recall, Review) and QRST (Preview, Question, Read, Self-Recite, Test (Review)).	Parts of a textbook using Brce Map. SQ3R and PQRST using Brace Map.

<b>Week</b>	<b>Control Group</b>	<b>Experimental Group</b>
6	SQ3R and PQRSST with textbook of choice.	SQ3R and PQRSST with textbook using Flow Map.
7	Prediction and point of view.	Prediction and point of view using Multi-Flow Map.
8	Analogies.	Analogies using Bridge Map.
9	Test-taking strategies.	Test-taking strategies using Circle Map and Tree Map.
10	Analyzing through structure.	Analyzing through structure using Tree Map and Brace Map.
11	Main idea and supporting details.	Main idea and supporting details using Tree Map.
12	Critical reading: Fact and opinion.	Critical reading: Fact and opinion using Double Bubble Map.
13	Critical reading: Propaganda.	Critical reading: Propaganda using Tree Map and Multi-Flow Map.
14	Recreational reading.	Recreational reading with Thinking Maps.
15	Reading selections.	Reading selections with Thinking Maps.
16	Reading selections.	Reading selections with Thinking Maps.

*Source: Ball, M. K. (1999). The effects of thinking maps on reading scores of traditional and nontraditional college students. Unpublished doctoral dissertation, University of Southern Mississippi, Hattiesburg. Used with permission.*

# Appendix A

## Thinking Maps Test Scores Summary

This is a selected list of school results from several states around the country. All of the teachers in each of these schools and systems received comprehensive, cross-discipline training and classroom follow-up coaching for a minimum of one school year. The analysis and presentation of the test score results shown below were reported by the administrators representing the schools or school system in

which the Thinking Maps were implemented. These results were submitted because they showed significant gains on the different test instruments used by the respective institutions. In all cases, the administrators have evidence that the results were directly related to the use of Thinking Maps by students. The scores are comparisons of results using state tests from year to year.

School/Description	Loction	Test Isntrument	Results
Margaret Fain Elementary/Title I (urban school) scores rose from 32% to 63%	Atalanta (GA) City Schools	Georgia State Tes of Basic Skills	In 1996, reading scores rese from 29% to 69% in 1996; math
Friedship Valley Elementary (suburban school)	Carroll County, Maryland	MSPAP (Maryland School Performance Assessment Programs) State Performance Assessment	Scores rose across all six areas assessed with large gains in writing (27%), language (20.1%), and science (18.2%). Friendship Valley scores were second highest in the whole state in 1996 and have continued to grow in recent years

<b>School/Description</b>	<b>Location</b>	<b>Test Instrument</b>	<b>Result</b>
Windemere Elementary (suburban school)	Wet Orange County, Florida	Florida Writes! State Assessment  Stanford-8 Achievement Test	<i>Writing:</i> Significant rise in combined writing scores (from 2.7 - 3.4) on a 6-point scale. <i>Reading:</i> For two years scores were Level at 68% and rose to 80% after implementation of Thinking Maps. In 1997. <i>Math:</i> For two years scores were level at about 79% and rose to 92% after implementation.
Carl Waitz Elementary/100% Title I	Mission, Texas	Texas State: TAAS (Texas Assessment of Academic Skills)	<i>Reading:</i> Rose from 62.7% to 88.2% in 1994. <i>Math:</i> Rose from 41.2% to 76.5%  <b>Awards:</b> Carl Waitz School was awarded a Texas Successful Schools excellence award for exceeding state standards, as well as a national Title I award for excellence. Waitz was also recognized by the Education Trust report as one of the few clear examples of minority and Title I student performing at high levels.
23 Catawba County School	North Carolina	North Carolina State End-of-Year Tests	<b>Results and Awards:</b> All school in Catawba County were trained in Thinking Maps form 1993 - 98. Below are results from several of the pilot schools that showed significant growth over multiple years. Fourteen schools received "exemplary" status form the state, and five of these received the "Schools of Distinction" status.
Claremont Elementary	Catawba County North Carolina	North Carolina State End-of-Year Tests	<i>Writing:</i> From 1993-96, scores rose from 33% to 46% to 68% at the 4th grade level.