Strategies for Activating Prior Knowledge

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Carousel Brainstorming

Purpose: To activate students' prior knowledge of a topic or topics through movement and conversation.

Description: While Carousel Brainstorming, students will rotate around the classroom in small groups, stopping at various stations for a designated amount of time. While at each station, students will activate their prior knowledge of different topics or different aspects of a single topic through conversation with peers. Ideas shared will be posted at each station for all groups to read. Through movement and conversation, prior knowledge will be activated, providing scaffolding for new information to be learned in the proceeding lesson activity.

Procedure:

1. Generate X number of questions for your topic of study and write each question on a separate piece of poster board or chart paper. (Note: The number of questions should reflect the number of groups you intend to use during this activity.) Post questions sheets around your classroom.
2. Divide your students into groups of 5 or less. For example, in a classroom of 30 students, you would divide your class into 6 groups of five that will rotate around the room during this activity.
3. Direct each group to stand in front of a homebase question station. Give each group a colored marker for writing their ideas at the question stations. It is advisable to use a different color for tracking each group.
4. Inform groups that they will have X number of minutes to brainstorm and write ideas at each question station. Usually 2-3 minutes is sufficient. When time is called, groups will rotate to the next station in clockwise order. Numbering the stations will make this easy for students to track. Group 1 would rotate to question station 2; Group 2 would rotate to question station 3 and so on.
5. Using a stopwatch or other timer, begin the group rotation. Continue until each group reaches their last question station.
6. Before leaving the final question station, have each group select the top 3 ideas from their station to share with the entire class.

Lipton, L., & Wellman, B. (1998). Patterns and practices in the learning-focused classroom. Guilford, Vermont: Pathways Publishing.

Sample Carousel Brainstorming for Databases

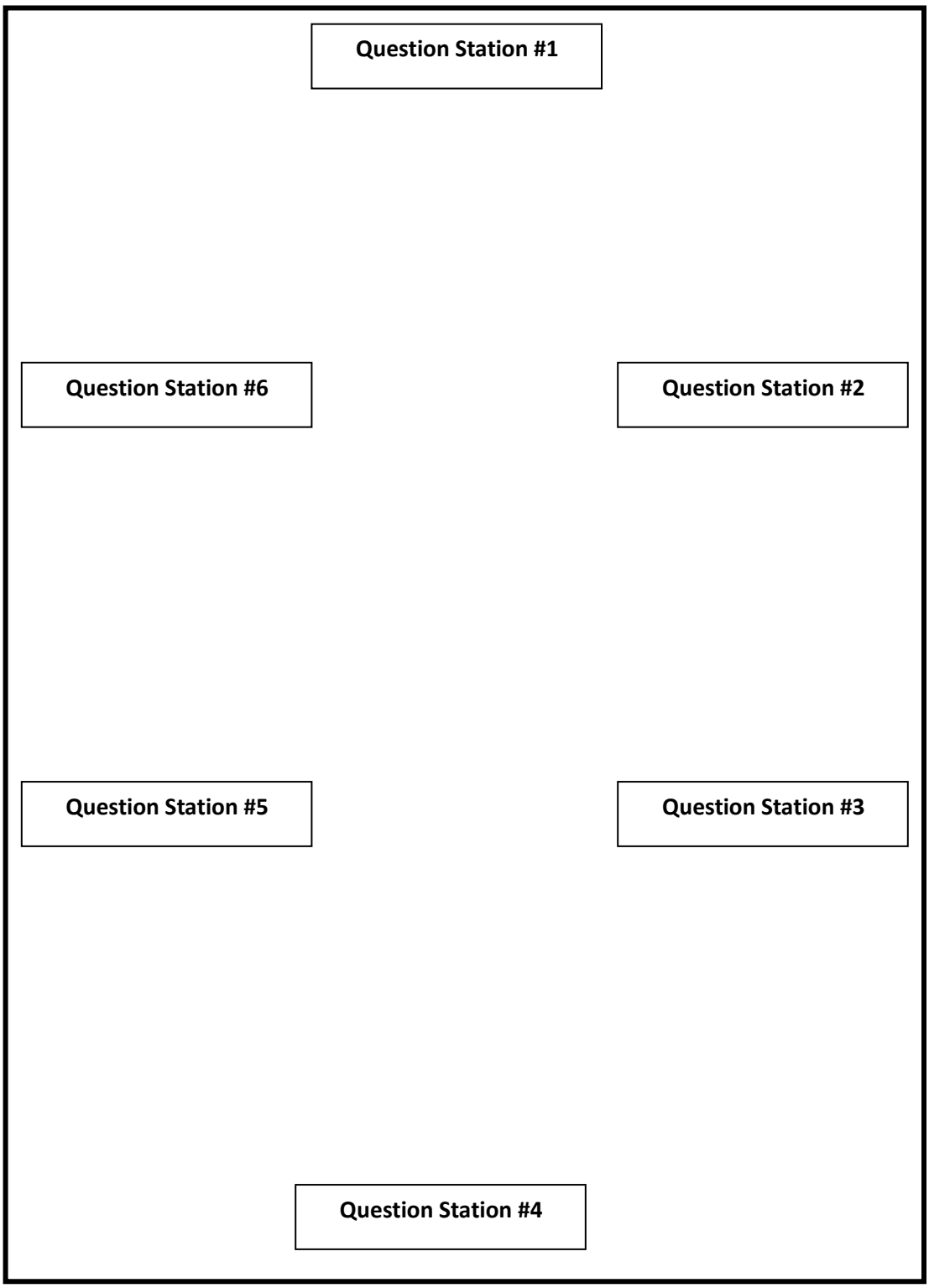
Question Stations:

1. What is a database used for?
2. What do you see when viewing a database?
3. What are examples of databases that we use in everyday life?
4. What fields (categories) of information would you place in a database of your friends?
5. What fields (categories) of information would you place in a database of European countries?
6. What types of information do not necessarily belong in a database?

Sample Carousel Brainstorming for Webpage Evaluation

1. What should a good webpage look like?
2. What type of information should you see on a good webpage?
3. What information would you expect to find on a webpage about European countries?
4. What information would you expect to find on a webpage about biomes?
5. What are some examples of things NOT to put on your webpage?
6. If you could design your ideal webpage, what are some features you would include?

Sample Room Layout for Carousel Brainstorming



Two Minute Talks

Purpose: To activate prior knowledge and focus student learning on the topic about to be addressed.
Description: During Two Minute Talks, students will share with a partner by brainstorming everything they already know (prior knowledge) about a skill, topic, or concept. In doing so, they are establishing a foundation of knowledge in preparation for learning new information about the skill, topic, or concept.
Procedure:

1. Group students into pairs.
2. Inform students that they will each be talking about topic X for two minutes. They will need to select which student will begin first. An easy way to do this is to say something like: "Find out whose birthday comes first in a calendar year." Then tell students that, "That person gets to go second!"
3. Using a stop watch or other timing device, tell students to begin talking.
4. At two minutes, instruct students to switch. At this point, the other partner begins talking. It is okay for the second person to repeat some of the things the first person said. However, they are encouraged to try and think of new information to share.
5. Have a few groups share some of their responses with the entire class when the activity is done.

Sample Two Minute Topics:
What are the benefits of using the internet?
What would happen to schools if all the computers disappeared overnight?
Name as many topics for databases that you can think of.
How would you use a PowerPoint slideshow to convince your parents to increase your allowance?
Name all of the things you can do in a word processing program.

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

Think-Pair-Share

Purpose: To engage students in about their prior knowledge of a topic.
Description: During this activity, students will have individual time to think about a question related to the topic of study. They will then pair up with a partner to share their thoughts. Finally, the pairs will select one major idea to share with the entire class.
Procedure:

1. Generate a higher-level question related to the topic you are about to study.
2. Group students into pairs.
3. Pass out a Think-Pair-Share worksheet to each student.
4. Give students 5 minutes to write down their individual thoughts in the "Think" section of the worksheet.
5. Then, in pairs, have groups share their individual thoughts. Pairs should summarize their common thoughts in the "Pair" section of their worksheet.
6. Finally, pairs choose one major idea to share with the entire class. This should be written in the "Share" section of their worksheet.

Sample Think-Pair-Share Questions:
What are the important elements of a multimedia slideshow presentation?
How would you evaluate the quality of a webpage?
What jobs might require the use of a spreadsheet?
What are some of the things you need to think about before building a database?
What are the advantages and disadvantages of using the internet for research?
Should everyone have access to the Internet?
Kagan, S. (1994). Cooperative learning. San Juan Capistrano, CA: Kagan Cooperative Learning.

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002
*Return to **Activating Strategies***

Sample Think-Pair-Share for PowerPoint

Think

Think about both of the PowerPoint presentations you have just viewed. Which presentation did you prefer? Explain why in the space below:

_____
_____
_____
_____

Pair

Pair up with a partner. Start a discussion with your partner by asking him/her which presentation they preferred. Ask your partner to explain in detail why they preferred one PowerPoint presentation to the other. Combine your ideas and summarize your discussion below:

_____
_____
_____
_____

Share

Share with the whole class the most important points from your "Paired" discussion. To prepare for sharing, list below the three most important points you would like to share with the entire class:

1. _____

2. _____

3. _____

Think-Pair-Share

My question:

_____

_____

Think

During the next 5 minutes, think about your answer to the question above. Write your response on the lines below:

_____
_____
_____
_____
_____

Pair

Now, pair up with your partner to exchange ideas? What ideas did you have in common? Write those ideas below:

_____
_____
_____
_____

Share

Using your "Pair" ideas, decide upon one major idea to share with the whole class. Write that major idea below:

_____
_____

Talking Drawings

Purpose: To activate and evaluate student knowledge of a topic.

Description: In this activity, students will activate prior knowledge by creating a graphic representation of a topic before the lesson. After engaging in learning about that topic, students will re-evaluate their prior knowledge by drawing a second depiction of their topic. They will then summarize what the different drawing *say* to them about what they learned.

Procedure:

1. Ask students to close their eyes and think about topic X. Using the Talking Drawings worksheet, have students draw a picture what they saw while they were thinking about topic X.

2. Teach cognitive portion of your lesson.

3. At the end of the lesson, ask students to elaborate upon their initial drawing by creating a new drawing that incorporates what they learned about topic X during the lesson.

4. Have students share their before and after drawings with a partner. Students should discuss the differences between the two depictions of topic X.

5. Finally, have students respond in writing at the bottom of their Talking Drawings worksheet. What do the two drawings tell them about what they learned during the lesson?

Wood, K. (2001). Literacy strategies across the subject areas. Needham Heights, MA: Allyn & Bacon.

from ***Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

Talking Drawings

1. **Close your eyes and think about _____ . Now, open your eyes and draw what you saw.**

2. **Now that you have learned more about _____ , draw a second picture to show what you learned.**

3. **In the space below, tell what you have changed about your before and after pictures. Explain why you made those changes.**

_____
_____
_____
_____
_____
_____

The First Word

Purpose: To activate students' prior knowledge of a concept, idea, or skill
Description: The First Word is a variation on traditional acronyms. By going through the process of analyzing words and creating related sentences, students will gain a deeper understanding of the meaning.
Procedure:

1. Assign students the name of an object, a topic, or key concept to write vertically down the side of a page.
2. Working in small groups or on their own, students should generate a short phrase or sentence that begins with each letter of the vertical work and offers important information or key characteristics about the topic.
3. Students can illustrate their "First Words" for posting around the classroom. Sharing "First Words" will allow students to identify important concepts that may have been left out of their own work.

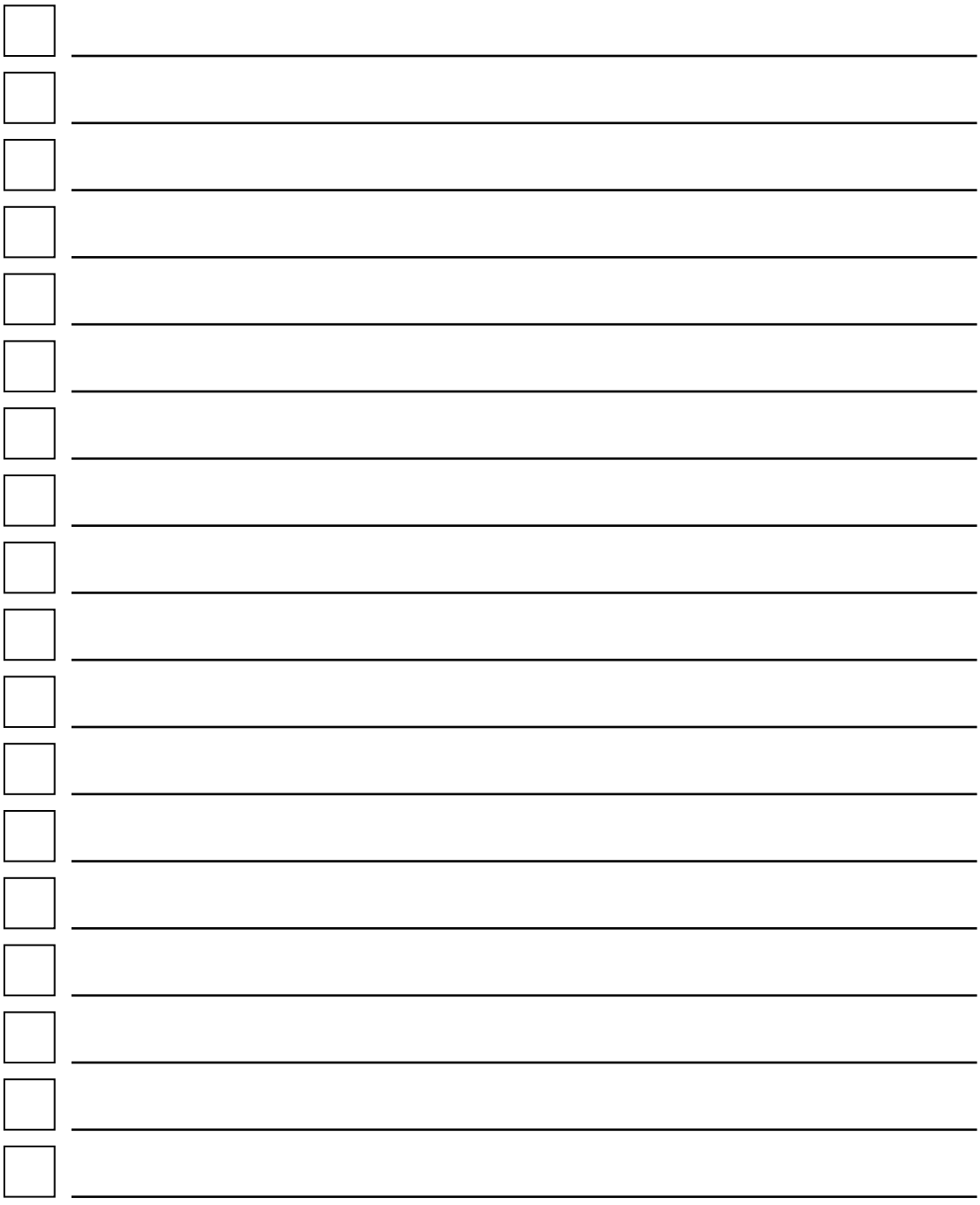
Sample First Word:
Sun is the star at the center of the solar system
Orbits are the paths that planets take around the Sun
Lunar eclipses occur when the Moon gets blocked by the Earth
Asteroids are big rocks that orbit the Sun
Rings-- the planet Saturn has them

Saturn is the sixth planet from the Sun
You can see some planets with your naked eye
Some other planets are: Earth, Venue, Mars, Jupiter, Pluto, and Neptune
The Earth is the only planet with life on it
Every year, the Earth orbits the Sun once
Mercury is the planet closest to the Sun

Lipton, L., & Wellman, B. (1999). Patterns and practices in the learning-focused classroom. Guilford, Vermont: Pathways Publishing.

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

The First Word



Walk Around Survey

Purpose: To activate students' prior knowledge through conversation and movement
Description: Walk Around Survey can be used as an activating or summarizing strategy. In this activity, students are given a topic of study and asked to move around the room for the purpose of conversing with other students. During these conversations, students will share what they know of the topic and discover what others have learned.
Procedure:

1. Assign a topic for the Walk Around Survey.
2. Pass out a survey form to each student in the class.
3. Allow students an allotted amount of time to survey three classmates (informers) on the given topic.
4. When students are completing the survey form, the soliciting student should write the name of the informer on his/her worksheet in the left-hand column. He/she will then record three facts from the student informer on the worksheet in the three empty blocks. He/she will then move on to find a second and third informing student to complete the survey worksheet.
5. Have students return to their seats and complete the Survey Summary.

Hint: This activity can be used as either an activating or summarizing strategy. It can be done in the classroom or, even better, outside on a nice day.

Sample Walk Around Survey Topics:

1. What can you do to become a responsible user of the Internet?
2. If you were creating a database about X, what fields would you most likely include?
3. Name ways in which spreadsheets are used in the workplace.
4. How has the Internet changed the way we communicate and interact with others?

Lipton, L., & Wellman, B. (1998). Patterns and practices in the learning-focused classroom. Guilford, Vermont: Pathways Publishing.

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

Walk Around Survey

Topic: _____

	Fact #1	Fact #2	Fact #3
_____ Informer #1			
_____ Informer			
_____ Informer			

Walk Around Survey Summary

Briefly summarize what you have learned from your student informers:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Upon which topics do you still need more information?

_____

_____

_____

_____

_____

_____

What questions do you have?

_____

_____

_____

_____

_____

_____

Three Step Interview

Purpose: To engage students in conversation for the purpose of analyzing and synthesizing new information.

Description: The Three Step Interview is a cooperative structure that helps students personalize their learning and listen to and appreciate the ideas and thinking of others. Active listening and paraphrasing by the interviewer develops understanding and empathy for the thinking of the interviewee.

Procedure:

1. Students work in pairs. One is the interviewer, the other is the interviewee. The interviewer listens actively to the comments and thoughts of the interviewee, paraphrasing key points and significant details.
2. Student pairs reverse roles, repeating the interview process.
3. Each pair then joins another pair to form groups of four. Students introduce their pair partner and share what the partner had to say about the topic at hand.

Sample Three Step Interview Topics:

1. Present a very challenging filter/sort combination problem to the students. Allow them to use the interview to discuss possible solutions.
2. Present students with an ethical situation related to privacy and the internet. Allow students to use the interview as a means of discussing the different components of the issues at hand.
3. Provide students a short (4-5 words) list of vocabulary to be reviewed. In the interview, they are to explain the definitions and applications of the words. By regrouping with the other interview pair, appropriate student use of vocabulary will be reinforced.

Lipton, L., & Wellman, B. (1998). Patterns and practices in the learning-focused classroom. Guilford, Vermont: Pathways Publishing.

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

In the Hot Seat

Purpose: To motivate student learning
Description: In this activity, several students will be asked to sit in the "Hot Seat" and answer questions related to the topic of study.
Procedure:

1. Prior to the beginning of class, the teacher will prepare questions related to the topic of study and write them on sticky notes. Four to five questions are usually enough.
2. Place the sticky notes underneath student desks/chairs so that they are hidden from view.
3. At the start of the class, inform students that several of them are sitting on "Hot Seats" and will be asked to answer questions related to the topic of study for the day.
4. Have students check their desks/chairs for the strategically placed sticky notes.
5. Students who have questions on sticky notes will then take turns reading the question and attempting to provide an answer. Due to the nature of this motivational activity, these should be questions that students are able to answer.

Sample Hot Seat Questions:
Internet:

1. What is your favorite search engine and why?
2. When was the last time you used the internet to complete a classroom assignment?
3. If you had to recommend a website to a friend, which one would you pick and why?
4. What do you think would be the impact if the Internet was gone tomorrow?
5. Do you think that students should be allowed to use the Internet unsupervised? Why or why not?

*from **Instructional Strategies for Engaging Learners***
Guilford County Schools TF, 2002

THIEVES: A Strategy for Previewing Textbooks

This activity will help students with comprehension by allowing them to preview the text structure in an organized manner. This pre-reading strategy will allow students to "steal" information before they actually begin reading the chapter. Students will survey the text in the following manner:

Title – Students sometimes skip the title, but it provides valuable information by establishing the topic and the context of the chapter. If the text is written in chronological order, the title may indicate where the chapter would fit on a timeline. Some questions that the student may ask while looking at the title include:

- What do I already know about this topic?
- How does it connect to the previous chapter?
- How can I turn this title into a question to focus my reading?

Headings – Headings indicate the important sections of the chapter. They help students identify the specific topics covered. Students can turn the headings into questions to create a more focused look at information covered in the chapter. Some questions that the student may ask while looking at the headings include:

- How does this heading let me know what I will be reading about?
- What topic will be discussed in the paragraphs below this heading?
- How can I turn this heading into a question that can be answered when I read this section?

Introduction – The introduction provides an overview of the chapter. It may come after the title and before the first heading. Sometimes the goals and objectives of the chapter are stated in the introduction. Some questions that students may ask when previewing the introduction include:

- Is the introduction marked or do I have to locate it?
- Does the first paragraph introduce the chapter?
- What important information will I find in the introduction?
- Do I already know anything about this?

Every first sentence in a paragraph – First sentences are often the topic sentences of the paragraph, and by reading these a student can get an idea of the information that will be contained in the chapter.

Visuals and Vocabulary – Students should look at all pictures, charts, tables, maps and graphs contained in the chapter. They need to read the captions and labels on each. This enables students to learn a little about the topic before they begin to read. Some questions that students may ask about the visuals include:

- How do these visuals relate to the content of this chapter?
- What can I learn from them?
- How do the captions help me understand the visual?

Vocabulary unlocks the meaning of the content. Students need to understand vocabulary in order to comprehend the text. Vocabulary may or may not be identified as key words. It might be highlighted or italicized in the text. Some questions that students may ask about the vocabulary include:

- Is there a list of key words and are they defined In the glossary?
- Are there important words in boldface or italics?
- Do I know the important words?
- Are there other words I don't know?

End-of-Chapter Questions – These questions indicate important points and concepts from the chapter. Just reading these questions will help students target information that is important in the text and establish a purpose for reading. Some questions that students may ask about the end-of-chapter questions include:

- What do these questions ask?
- What information will be important in this chapter?
- How do I locate this information in the text?

Summary – Many texts contain a summary at the end of the chapter. Students can read the summary to activate prior knowledge and give them an idea of the important concepts contained in the chapter.

THIEVES was created by Suzanne Liff Manz, an educational therapist and instructor at Nassau Community College in Garden City, NY. It was published in *The Reading Teacher* Volume 55 Number 5 in February, 2002.

Kinesthetic THIEVES

Because you will have many students who are kinesthetic learners, here is a way for them to learn the THIEVES technique through movements.

TITLE – Explain that a king or queen has a title and they wear a crown. Make the crown by circling the fingers of one hand and placing in on the top of the head.

HEADING – Do the *Home Alone* face that students may remember from the movie. Place both hands on the cheeks of the face and open the mouth wide.

INTRODUCTION – Explain to students that usually when we are introduced to someone, we shake his or her hand. For this movement, extend the right hand and act as if you are greeting someone.

EVERY FIRST SENTENCE – We read from left to right. Extend the right hand to the left side of the body and bring it back to the right as if you were reading word by word and pointing to them.

VISUALS AND VOCABULARY – Form a V with two fingers on each hand and place them under each eye. Remind students that these are two things they must “look” at in the text.

END OF CHAPTER QUESTIONS – This usually gets a giggle. Place one hand on your hip near your behind.

SUMMARY – Explain that a summary gives an overview of the whole thing. Make a huge circle with both hands.

Make sure that students say the steps in the THIEVES technique as they are doing the motions. The more repetition students have with this the more familiar they will become, and the more easily they will be able to use it.

T.H.I.E.V.E.S. Questions

Students and parents, here is a great strategy to preview chapters of any textbook. It is known as T.H.I.E.V.E.S., an acronym for the steps of the strategy. After a few times of practice, you will find this strategy easy, and very effective in improving your comprehension of what you read.

T……. TITLE
What is the title?
What do I already know about this topic?
What does this topic have to do with the preceding chapter?
Does the title express a point of view?
What do I think I will be reading about?

H……HEADINGS/SUBHEADINGS

What does this heading tell me I will be reading about?
What is the topic of the paragraph beneath it?
How can I turn this heading into a question that is likely to be answered in the text?

I……INTRODUCTION

Is there an opening paragraph, perhaps italicized?
Does the first paragraph introduce the chapter?
What does the introduction tell me I will be reading about?

E……EVERY FIRST SENTENCE IN A PARAGRAPH

What do I think this chapter is going to be about, based on the first sentence in each paragraph?

V ……VISUALS AND VOCABULARY

Does the chapter include photographs, drawings, maps, charts, or graphs?
What can I learn from the visuals in a chapter?
How do captions help me better understand the meaning?
Is there a list of key vocabulary terms and definitions?
Are there important words in boldface type throughout the chapter?
Do I know what the bold-faced words mean?
Can I tell the meaning of the boldfaced words from the sentences in which they are embedded?

E……END-OF-CHAPTER QUESTIONS

What do the questions ask?
What information do I learn from the questions?
Let me keep in mind the end-of-chapter questions so that I may annotate my text where pertinent information is located.

S……SUMMARY

What do I understand and recall about the topics covered in the summary?

Using Picture Books

Picture books have been used in the primary grades for decades, but they are a quick and convenient way to help older students activate their prior knowledge. There is a new focus on picture books that deliver difficult content in simple language. Picture books are a great model for student writing, as they contain vivid language and a variety of text structures. The beauty of using picture books in the upper grades, middle and high school, is that they can be read in a few minutes and provide students with information connected to the concept or skill being introduced.

Picture Books for Older Students

Here is a bibliography of picture books for secondary teachers. They are grouped by subject area for convenience.

Social Studies:

Bunting, Eve. *The Blue and the Gray.* New York: Scholastic Press, 1996. ISBN 0-590-60197-0 (Civil War)

Bunting, Eve. *So Far from the Sea.* New York: Clarion Books, 1998. ISBN 0-395-72095-8 (World War II – Japanese Internment)

Cleary, Brian P. *Jamaica Sandwich?* Minneapolis: Lerner Publications, 1996. ISBN 0-8225-2114-8 (Geography)

Coerr, Eleanor. *Sadako.* New York: G.P. Putnam's Sons, 1993. ISBN 0-399-21771-1 (World War II)

Colman, Penny. *Rosie the Riveter.* New York: Random House, 1995. ISBN 0-517-59790-X (World War II)

Dooling, Michael. *Thomas Jefferson: A Picture Book Biography.* New York: Scholastic, 1994. ISBN 0-590-44838-2 (American Revolution)

Gates, Phil. *The History News: Medicine.* New York: Scholastic, 1999. ISBN 0-439-25729-6 (medical history)

Granfield, Linda. *High Flight*. Canada: Tundra Books, 1999. ISBN 0-88776-469-X (World War II)

Granfield, Linda. *In Flanders Fields*. Canada: Stoddart Books, 1995. ISBN 0-7737-2991-7 (World War I)

Hall, Francie. *Appalachian ABCs.* Tennessee: The Overmountain Press, 1998. ISBN 1-57072-087-8 (WV History)

Hoestlandt, Jo. *Star of Fear, Star of Hope.* Canada: Allen & Son, 1993. ISBN 0-8027-8373-2 (World War II)

Hunt, Jonathan. *Illuminations.* New York: Aladdin Books, 1989. ISBN 0-689-71700-8 (Middle Ages & Illuminated Text)

Innocenti, Roberto. *Rose Blanche.* New York: Stewart, Tabori & Chang, 1985. ISBN 1-55670-207-8 (World War II)

Keller, Laurie. *The Scrambled States of America.* New York: Henry Holt & Co., 1998. ISBN 0-8050-5802-8 (geography)

Krull, Kathleen. *V is for Victory.* New York: Alfred A. Knopf, 1995. ISBN 0-679-86198-X (World War II)

Langley, Andrew & Philip De Souza. *The Roman News.* Cambridge, MA: Candlewick Press, 1996. ISBN 0-7636-0055-5 (Ancient Rome)

McGill, Alice. *Molly Bannaky.* Boston: Houghton Mifflin, 1999. ISBN 0-395-72287-X (Colonial America)

Mochizuki, Ken. *Baseball Saved Us.* New York: Lee & Low Books Inc., 1993. ISBN 1-880000-01-6 (World War II)

Mochizuki, Ken. *Passage to Freedom*. New York: Lee & Low Books, Inc., 1997. ISBN 1-880000-49-0 (World War II)

Oppenheim, Shulamith Levey. *The Lily Cupboard.* New York: Harper Collins, 1992. ISBN 0-06-024669-3 (World War II)

Polacco, Patricia. *The Butterfly*. New York: Philomel Books, 2000. ISBN 0-399-23170-6 (World War II)

Polacco, Patricia. *Pink and Say*. New York: Philomel Books, 1994. ISBN 0-399-22671-0 (Civil War)

Powell, Anton & Philip Steele. *The Greek News.* Cambridge, MA: Candlewick Press, 1996. ISBN 1-56402-874-7 (Ancient Greece)

Sim, Dorrith. *In My Pocket*. New York: Harcourt Brace, 1996. ISBN 0-15-201357-1 (World War II)

Spedden, Daisy Corning. *Polar, The Titanic Bear.* Boston: Little, Brown & Co., 1994. ISBN 0-316-80625-0 (Early 1900's)

Steedman, Scott. *The Egyptian News.* New York: Scholastic, 1997. ISBN 0-590-26617-9 (Ancient Egypt)

Tsuchiya, Yukio. *Faithful Elephants*. Boston: Houghton Mifflin, 1951. ISBN 0-395-46555-9 (World War II)

Wells, Rosemary. *The Language of Doves*. New York: Dial Books, 1996. ISBN 0-8037-1471-8 (World War I)

Wild, Margaret & Julie Vivas. *Let the Celebrations Begin!* New York: Orchard Books, 1991. ISBN 0-531-07076-X (World War II)

Science:

Cherry, Lynne. *The Great Kapok Tree.* Florida: Harcourt Brace, 1990. ISBN 0-15-200520-X (Rainforest)

Hummon, David. *Animal Acrostics.* California: Dawn Publications, 1999. ISBN 1-883220-92-0 (animals and acrostic poetry)

Jordan, Martin & Tanis. *Amazon Alphabet.* New York: Kingfisher, 1996. ISBN1-85697-666-1 (Rainforest)

Jordan, Martin & Tanis. *Journey of the Red-Eyed Tree Frog.* New York: Simon & Schuster Books for Young Readers, 1991. ISBN 0-671-76903-0 (Rainforest)

Mazer, Ann. *The Salamander Room.* New York: Alfred A. Knopf, 1991. ISBN 0-394-82945-X (habitat)

Mullins, Patricia. *V is for Vanishing: An Alphabet of Endangered Species.* Australia: Hamilton Books, 1993. ISBN 0-06-443471-0 (endangered species)

Pallotta, Jerry. *The Airplane Alphabet Book.* Watertown, MA: Charlesbridge Publishers, 1997. ISBN 0-88106-907-8 (airplanes)

Pallotta, Jerry. *The Jet Alphabet Book.* Watertown, MA: Charlesbridge Publishing, 1999. ISBN 0-88106-916-7

Pallotta, Jerry. *The Underwater Alphabet Book.* Watertown, MA: Charlesbridge Publishing, 1991. ISBN 0-88106-455-6 (Oceans)

Patent, Dorothy Hinshaw. *Flashy, Fantastic Rain Forest Frogs.* New York: Walker & Company, 1997. (Rainforest)

Pomeroy, Diana. *Wildflower ABC.* New York: Harcourt Brace, 1997. ISBN 0-15-201041-6 (Wildflowers)

Pratt, Kristen Joy. *A Fly in the Sky.* California: Dawn Publications, 1996. ISBN 1-883220-39-4 (flying things)

Pratt, Kristen Joy. *A Swim Through the Sea.* California: Dawn Publications, 1994. ISBN 1-883220-04-1 (Ocean animals)

Pratt, Kristen Joy. *A Walk in the Rainforest.* California: Dawn Publications, 1992. ISBN 1-878265-53-9 (rainforest animals)

Rice, David L. *Lifetimes.* California: Dawn Publications, 1997. ISBN 1-883220-59-9 (Life Cycles)

Sierra, Judy. *There's a Zoo in Room 22.* New York: Harcourt, Inc., 2000. ISBN 0-15-202033-0 (animals)

Van Allsburg, Chris. *The Stranger.* Boston: Houghton Mifflin, 1986. ISBN 0-395-42331-7 (changing to autumn)

Van Allsburg, Chris. *Two Bad Ants.* Boston: Houghton Mifflin, 1988. ISBN0-395-48668-8 (ants and perspective in art)

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