Jordan Tang

THINK … CREATE … DISCOVER

By Cheryl Schuermann

Instructional Guide for Teachers

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About the Author

Cheryl Schuermann is a reading specialist and special educator. She taught school for many years and is now a consultant and staff development trainer in literacy education. Cheryl wants every student she meets to love reading and learning.

She found it an honor to write about Dr. Jordan Tang of the Oklahoma Medical Research Foundation. By reading about Dr. Tang, Cheryl hopes students will become excited about research and inspired to pursue scientific knowledge.

Cheryl loves to write about real people who inspire us. Her first book was released in 2008. *When the Water Runs: Growing Up with Alaska* details her mother's childhood in an Eskimo village north of the Arctic Circle.

Jordan Tang: Think … Create … Discover is her first biography for children. When Cheryl is not in schools or writing, she can be found having fun with her thirteen grandchildren.

A Note from Cheryl

This teacher's guide for *Jordan Tang* is designed for students in third through fifth-grade. However, the instructional ideas can be easily modified to match the levels of other students.

The most common question I am asked by teachers is, "How can I help my students comprehend text?" This question is usually followed by, "They can read, they just don't comprehend what they read." Yikes! Comprehension is the ultimate goal, isn't it? If our students are missing the mark, we need to adjust our instruction to get the results we want to see.

This guide focuses first on ways to teach and strengthen the Big Five Comprehension Skills—Predicting, Questioning, Clarifying, Retelling, and Summarizing. Next, you will find several effective ways to continue teaching across the curriculum with this biography. These instructional strategies can be applied to any text throughout the school day.

Additional resources may be downloaded from my website, www.cherylschuermann.com. All reader needs tools for their toolbox--strategies that support the reading process and increase comprehension.

Good readers are metacognitive—they think about their thinking as they read.

Reading Language Arts

Predicting

Good readers spend a few minutes looking at a new book before reading. They form ideas in their minds about what they might learn as they read. (Predictions do not have to be correct, but they must be logical based on the evidence you see.)

- Point out the title, subtitle, author, name of series, publisher.
- What do you think this book will be about? What clues have the author and art designer given us to help us make a logical prediction?
- What do we already know about Jordan Tang by looking at the front and back covers? What are your logical predictions based on the evidence you see?
- Would you predict this is a fiction text or a non-fiction text? Why? What is the evidence? Think, pair, and share with your neighbor.

Teacher Tip: Inference tends to incorporate more prior knowledge with the physical evidence. Again, after reading a text, readers may discover their inferences are not true, but the inferences must be logical.

Vocabulary

Post vocabulary words from the Glossary on page 34. Give a brief description of each word and how it will be used in the text. Encourage students to be listening for these words as you read.

Questioning

Good readers ask rich questions before, during, and after reading.

- Just seeing the front and back covers, what do you wonder about? What questions do you have?
- What would you like to see answered in the text?
- Teacher question: What do you anticipate learning?

Have students turn to a neighbor and discuss their questions. Share thoughts with the whole group. If time allows, record some of the questions on a chart tablet. Put students' initials by their questions.

Some questions will be answered in the text and some may not. What would be our next steps if we have questions that are not answered? (inference based on prior knowledge and evidence in the text) (further research) Where would we go to find the answers to our questions? (dictionary, encyclopedia, thesaurus, online resources, other books and articles about the subject)

Additional Pre–Reading Activities

Word Splash—Word Splash activates prior knowledge and builds anticipation of the upcoming text. Write the vocabulary words on bright paper strips or use different colored markers. Include words from the glossary plus any other words you choose. "Splash" the words on the board or a large chart tablet. Group students into trios and allow them to talk about what they already know about each word. They can draw a T-chart and write headings—*Words I Know/Not Sure About These*.

Your students will pay attention when you encounter these words in the text!

Quick Write—A Quick Write is a short, focused writing in response to a specific prompt. As an activating strategy, Quick Write provides a bridge to new concepts the student will be learning. The teacher formulates a statement or question related to the content. Students respond in writing within a specified about of time—usually 3-7 minutes. When the time is up, students share their ideas in pairs, trios, or with the whole class for discussion.

Optional: Repeat Quick Write after reading for reflection. Focus on three or four key pieces of information learned.

Take a few moments here to discuss **non-fiction text structure**.
- Do a brief book-walk to point out the dedication, title page, table of contents, chapter titles, bold print, photographs, captions, maps, text boxes, and quotes.
- Note the information in the back few pages of the book. This is called back matter and includes additional facts for the reader. In the back matter, the reader might see a glossary of vocabulary terms, timeline, graphics, additional information of interest, and a brief author biography.

This is a biography, a true story about a real person's life. Note the chronology of the book. It begins with who this person is and why he is important to read about. Then, we see the story of his life and work.

READ

Read the book aloud. Pause every few pages to ask students if they have additional questions. (*What do you wonder about?*) They might share with the group or with a neighbor. Record a few additional questions on the chart tablet. Put students' initials by their questions. Ask students how their understanding of Jordan Tang changes as they hear his story.

Teacher Tip: Good readers understand how they <u>synthesize</u> information as they read. Each time they read new information, they synthesize it with what they already knew. This forms a new, richer understanding of the topic.

Clarifying

Good readers monitor their own reading and use Fix-Up Strategies to clarify and increase understanding. Fix-Up Strategies may include:

- ✓ Reread
- ✓ Read ahead, then come back
- ✓ Adjust reading rate
- ✓ Think about your purpose for reading
- ✓ Look at the pictures, charts
- ✓ Stop and check your understanding
- ✓ Use context
- ✓ Try your word attack system

Teacher Tip: Consider taking a moment to do a think-aloud as you read, modeling a couple of the Fix-Up Strategies. (Example: *Whoa. I have never heard that word (concept) before. I am going to go back and reread that paragraph to make sure I understand it in context before moving on.*)

Retelling

Good readers think about *who, what, when, where, why,* and *how* to retell a text. Create a large *5 Ws and H* graphic organizer on chart paper.

WHO	WHAT (action)	WHEN	WHERE	WHY	HOW

After reading, fill in the above chart with your students. Have students use information on the chart to retell the story of Jordan Tang.

Teacher Tip: A good retelling will include as many details as possible and will be stated in order.
Teacher Tip: Another effective tool for retelling is to use *Somebody Wanted But So Then*. A reproducible bookmark for this strategy can be found on www.cherylschuermann.com.

Summarizing

Good readers summarize text after they read. They think about the main idea of the text and what they would want someone to know about the book.
The above 5 Ws and H chart can easily be used to summarize text.
- Select the most important "who" in the text. Who is the star of this story?

- Select the most important action. This choice will determine the when, where, why, and how.
- Use the selected words to construct a brief summary of the text. Add connecting words and additional information to create a concise statement of the main idea of this book.
- A summary can be one sentence or several sentences included in a short paragraph.

The *Somebody Wanted But So Then* strategy can also be used to summarize text. Think about what the main character(s) wanted, the challenges they faced, and how they obtained their goals.

Comprehension Questions

Give students plenty of opportunity to discuss their answers. *Students who talk about the content increase their comprehension!*

When and where was Jordan Tang born?
Why did his family move from town to town when he was a child?
Who did Jordan Tang read about as a child? What was Jordan inspired to do?
When did he move from China to Taiwan?
What did Jordan Tang study in college in Taiwan?
When Jordan Tang worked for the Fertilizer Ministry, what talent was discovered?
Did he pursue this talent as a career? Why not?
Where did Jordan Tang decide to study in the United States? Why did he decide to go there?
How did he get to Oklahoma from Taiwan?
How would you order food at a restaurant if you could not read or speak the language?
Why did Jordan Tang leave Stillwater and Oklahoma State University? Where did he go?
Where was Jordan Tang's first job in Oklahoma City?
What was his discovery in the lab? Why was this discovery important?
Name some of the equipment and tools a scientist needs in a laboratory.
According to Dr. Tang, why is curiosity so important?
What is a hypothesis?
Why do scientists use models? How are they helpful in their work?
What does three-dimensional mean? Give an example of a 3-D item.
How does Dr. Tang's work in the research lab help doctors help their patients?
What type of art does Dr. Tang enjoy? How does he use his art for good purposes?
What does Dr. Tang ask people when they inquire about one of his paintings? Why do you think he asks another question?
What research prize did Dr. Tang receive in the year 2001? How was this award important to him?
How does research funding help scientists continue their work?
Why does Jordan Tang's work have meaning for people around the world?
Reread Dr. Tang's advice to students on page 33. Why is his advice so important for you and your future? How could his advice have an impact on others?

Writing Extensions

Write about it! Possible writing prompts for journals and essays:

- Would you like to be a laboratory scientist? Why or why not?
- Can you think of something you use every day that you would like to make better?
- What would you like to discover? How would your discovery help others?
- What are your favorite inventions? Name and discuss three of them. Why are they important to you?
- What qualities did you see in Dr. Jordan Tang that helped make him successful?
- Has Dr. Tang inspired you to learn more in school? To learn more about science? Explain.

Literacy Station Ideas:

- Research Station: Provide additional books about scientists and inventors.
- Students choose another inventor or scientist to read about. Have them create a 5 Ws and H chart. After all are completed, ask students to form trios and retell what they read using their chart as a guide.
- Research additional scientists and inventors. Select one to write about. Share with the class.
- Provide materials for students to make their own Invention Book like Dr. Tang's. Allow them time to draw pictures of their idea and write about how it would work. What would be the benefits of this invention? What might be the challenges?
- Post a large chart tablet page in the classroom with the title, Invention Ideas. Allow students to write their ideas for inventions on sticky notes and put on the chart throughout the week. Use the chart for discussion and brainstorming.
- Have students think of a problem they would like to solve, then detail their plan in writing.
- Provide time for journal writing to reflect on what students learned about Dr. Tang and his significant work. Ask them to share their hopes and dreams about what they would like to do in the future to help others.

Social Studies

- Use a globe to show students where China is in relation to the United States. Note the size of China and compare it to the United States. Show the island of Taiwan.

- Discuss the information on the population of China in the text box on page 11. How does China's population compare to the number of people in the United States? The estimated populations are as follows: United States 321 million, China 1.3 billion. Discuss types of housing in each country.

Mathematics

Questions for discussion and reflection:

1. How do scientists use math in their work?
2. How does Dr. Tang use measurement? How important is accuracy in his work?
3. How do you think like a scientist when you are trying to solve a math problem in your textbook?

- Display a word problem from the math textbook as an example. Have students work in pairs or trios to discuss how they would work through the six steps of the Scientific Process to solve the problem.

- Draw an outline of Oklahoma on the board. Have a student show the size of Taiwan in relation to Oklahoma. (The text box on page 11 tells us Taiwan is about 1/5 the size of Oklahoma)

- Compare the population of the United States to the population of China. The population of the United States is what percentage of the Chinese population? Show the populations on a bar graph or pie graph.

Science

- Create a poster with the six steps of the Scientific Process for the classroom. Refer to the steps throughout the day/week. *How did we think like a scientist when we did that learning activity?*

- Take advantage of a problem that comes up and have the students generate a plan to solve it, using the six steps. This can be done whole-group or in small groups.

Art

- Share additional information with your students about Abstract Art. What are the characteristics of abstract art? Show photographs of art examples—paintings, sculptures, etc.
- Who are some of the world's famous abstract artists? (Picasso, Georgia O Keeffe, Kandinsky …) Show examples of their work.
- Provide an opportunity for students to paint their own abstract art, using a variety of mediums.
- Ask students to reflect on Dr. Tang's paintings. Which is their favorite? Why? What is Dr. Tang trying to tell people through his art?
- When someone asks Dr. Tang about one of his paintings, what does he say? (*What do you think is going on*?) Why does he say this?

Music

- Play classical music softly while students are working on assignments. Play several pieces by string quartets.
- Ask students to listen for the different instruments and identify them.
- If available, allow students to compose a tune on a keyboard. Apps are also available that provide a keyboard, sound, and capacity to save and replay a tune.

Questions for discussion and reflection:
1. How do you think science and music are alike? What are the connections? How are they different?
2. Why do you think so many scientists are artists or musicians? What attracts scientists to music and art?

   Teacher Note: Famous scientist Albert Einstein was a brilliant violinist. He once said, "Life without playing music is inconceivable for me. I live my daydreams in music. I see my life in terms of music." And, "I get most joy in life out of music." Albert Einstein was rarely seen without his violin.