

Teacher's Guide to *Odyssey: Magic of Memory*

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Teacher Guide prepared by Lisa Greenberg. Lisa taught in international schools in Japan, Singapore, and Saudi Arabia. Her coffee table book SAUDI ARABIA, photographs by Mohammed Babelli and text by Lisa was published in May, 2007, and her children's story "Flying Like a Djinn" was in Cricket, September 2007. Lisa is currently working on a book on the Rub al Khali, a vast desert in the Arabian Peninsula.

Getting Ready:

Set up

- 1/ a bulletin board with the title "Memory Moments";
- 2/ a free reading and exploration table with a model of a brain, some memoirs written for children, and some books on memory tricks and study strategies.

Review and discuss the cover of the magazine and the editor's note on page 2: What does the picture on the cover say to the students? Which article titles interest them? What do they know about memory already?

You may want to ask more specific questions, such as, what is your first memory? How do you learn best? What makes your favorite memory stand out? Have you ever tried to get rid of a bad memory and how did you do it? When is memory particularly useful? Do specific memories ever cause you problems? Do you always forget the same things or kinds of things?

Memory Erasers, p. 5

Small group discussion: have groups of four to five students read and discuss this short article. Then have each answer the questions at the end of the article and share their responses with the class. Encourage students to email their ideas to the magazine.

Vocabulary Building: you might want to introduce and have students define these words before beginning study of the magazine: eidetic, transcription, translation, interpretation, simultaneous interpretation, aphasia, bilingual,

ZAP! Erasing Memories, p. 6 ff.

Taking notes: Work as a class group to read, discuss each section of the article, and list the main ideas. For example, Intro: It is possible to erase new memories with a drug; "There are places I remember": memories are made by electrical impulses flashing through the brain.

Review the different types of memory in the sidebar on page 9. Have students give oral examples of specific memories classified by content.

Neurons on the Job, p. 10 ff.

Visualizing Information:

Have students draw a graphic representation of the electrical process taking place in the brain which creates memory or draw and label a flow chart that shows the process of creating a memory.

Discuss how short-term memories are created (synapses firing at high frequency) and long-term memories are created (synapses firing at high frequency and the manufacture of proteins to strengthen the synapse).

Lost, p. 14 ff.

Read for information: Have students read the article as a class, in small groups, or individually. Then discuss the following questions (you may wish to distribute the questions before reading or assign small groups specific questions):

1. What caused the introductory "loss of memory" experience?
2. What does the author show the reader about his return of memory?
3. What is declarative memory?
4. How would you define non-declarative memory?
5. What is the difference between anterograde and retrograde memory? Give a specific example of each from the article.
6. How is a person's memory "primed"?

If you have a model of a brain available, you may wish to help students find the specific brain areas that remember different types of memories (chart on p. 15).

Forever New, p. 16 ff.

Discuss:

1. What is Clive Wearing's type of amnesia called? (*anterograde amnesia*)
2. What happens to him in his daily life? (*He can make no memories; each experience is totally new.*)
3. What caused his amnesia? (*viral encephalitis*)
4. What did that disease do to his brain? (*destroyed the hippocampus*)
5. What other condition can call anterograde amnesia? (*hypoxia*)
6. How do scientists think the hippocampus works to convert experience into memory? (*Since the hippocampus is active during sleep, it may sort, regroup, and strengthen important recent memories.*)

Memento Nora, p. 19 ff.

Have students read the story silently or try it as a read aloud with individuals taking the parts of Mom and Nora and father and another student reading the narrative.

Discuss with the class:

1. What is science fiction?
2. What is different about the setting of this story from your everyday world?
3. What does the Therapeutic Forgetting Clinic offer to its clients?
4. When Nora watches the orientation, what is she supposed to learn?
5. When Nora makes a game of guessing why people are at the Forgetting Clinic, what does the author show you about the society in the story?
6. What does "memento" mean and how is it used in the story?
7. What does Nora learn during her visit to the Forgetting Clinic?
8. What choice does she make?
9. If you were Nora what choice would you make and why?
10. Which character do you think is most interesting in the story and why?

Challenge students to enter the story-writing competition on page 23. You might even want to invite a panel of three local writers or fellow teachers to "judge" the stories for a class prize.

Don't Forget These Movies! p. 22 ff.

Discuss: Have the students ever seen a feature movie that includes some sort of memory loss in the plot? How good was the "science" in the movie?

A Blue Car and a Giant Sea Slug

Research Projects:

Divide students into small groups and have them research one of the following topics and share their research with the class:

1. How emotion affects memory.
2. New topics being pursued in brain and memory research
3. Discoveries made by Dr. Eric Kandel.
4. Dr. Kandel's Nobel Prize and acceptance speech.

Interpreters: Silver-Tongued Masters of Memory, p. 30 ff.

Vocational exploration: Read and discuss in class:

1. What kinds of people are drawn to simultaneous interpretation as a career?
2. What types of memory do they use?
3. What is the working process of the simultaneous translator?
4. Why do researchers think that sign language interpreters have better detail recall than spoken language interpreters?
5. What basic skills do simultaneous interpreters need to cultivate?
6. Would you like to be a simultaneous interpreter?
7. Why or why not?

True or False: Can You Trust Your Memory?

Homework application: Have students "check a specific memory" by asking family members to write a brief description of a family experience shared by all. Have students spot the differences and highlight or otherwise mark the "variations" in the memories.

Boost Your Memory: 7 Easy Tips

Study Skills: Discuss the tips with the students. Have they used some of them? Do they have other memory or study tips to share? Do they find that certain experiences or activities are obstacles to memory? Create a class list of effective memory tips.

Spaced Learning: It's Scientific, But Does It Work? p. 40 ff.

Reading for Understanding:

1. Describe the spaced learning process.
2. What is the student reaction to spaced learning?
3. What do you think the teacher reaction is to spaced learning?
4. List the pros and cons of spaced learning as you see them?
5. Do you see any limitations to spaced learning?
6. How can you apply spaced learning to your own study?
7. Design a trial experiment for spaced learning in your classroom.

Don't Bee Fooled! p. 49

Scientific Understanding: List the bee's memory feats mentioned in the article. How did scientists confirm the bee's cognition process?

Take the Boomerang Challenge (p. 48): Design and run a memory or cognition experiment for a pet or other animal you know. Summarize the experiment design, your observations, and your conclusions.

Wrap Up:

Discuss with students what useful applications they can make from the information they discovered while working with the magazine. Make a class list, if desired.