



Samantha Hansen Has Rocks in Her Head

a teacher's guide

Created by marcie colleen

Nancy Viau, Author

Samantha Hansen Has Rocks in Her Head

Nancy Viau's love of travel has taken her to many of America's national parks, but she counts the Grand Canyon—stinky burros and all—as her favorite.

She has worked as an elementary school teacher, a counselor in an after-school program, an instructor for reluctant readers, and a freelance writer. Viau is the mother of four children and readily confesses, "My kids have done a great job raising me." She lives with her family in rural New Jersey and loves to visit the seashore in the summer.

Samantha Hansen Has Rocks in Her Head is Viau's first novel. She is also the author of three picture books: *City Street Beat*, *Look What I Can Do!*, and *Storm Song*. Find out more at www.nancyviau.com.

Marcie Colleen, Curriculum Writer

Marcie is a former teacher with a Bachelor's degree in English Education from Oswego State and a Masters degree in Educational Theater from NYU. She also writes picture books and loves to travel. Although she has never been to the Grand Canyon, she has flown over it many times and it is ab-s-o-lutely HUGE!

Marcie lives in Brooklyn, NYC.

She can be contacted at marciecolleen@gmail.com or through her blog at <http://writeroutine.blogspot.com>.

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How To Use This Guide

This classroom guide for *Samantha Hansen Has Rocks in Her Head* is designed for students in second through fifth grade.

It offers activities to help teachers integrate *Samantha Hansen...* into English language arts (ELA), mathematics, science, and social studies curricula. The Arts are used as a teaching tool throughout the guide.

All activities were created in conjunction with relevant New Jersey content standards in ELA, math, science, social studies, art, and drama.

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English Language Arts

Reading Comprehension

Before reading *Samantha Hansen*, have students look at the cover. Discuss:

- What do you think the book will be about? Why do you think so?
- How would you describe the girl on the cover?
- What clues are in the illustration?

Chapter 1: A Rocky Start

- Describe Samantha's collection.
- What can we tell about each character we are introduced to in this chapter?
 - Samantha
 - Jen
 - Mom
 - Kelli
- Where does Mom want to take the family on vacation? When was the last time they were on vacation?
- Does this chapter leave you wanting to know more about anything? What do you hope to learn about in the chapters to come?

Chapter 2: Double Trouble

- What does Samantha want to do while she is waiting for dinner?
- What does Samantha's cousin, Ana, want to play? How do you play that game?
- What does Samantha find in the garage?
- What can you learn about Samantha's father from the items in this box?
- Where does Samantha's cousin, Casey, hide her piece of coal?

Chapter 3: Skeletons, Burros, and a Horseshoe

- Why does Samantha's family eat Strawberry Coco Swirly Whirl birthday cake for breakfast? Describe Samantha's mother's job.

- Why does Samantha try so hard to keep a lid on her temper?
- How does Kelli describe her family trip to the Grand Canyon?
- What does Samantha want to do at the Grand Canyon?
- What does Kelli do to Samantha's rock collection that makes it even better?
- What activity does Samantha NOT want to do at the Grand Canyon?

Chapter 4: It's My Sister's Fault

- List all of the things Samantha does before bed.
- What does Samantha write in her notebook?
- What is the cause of the fight between Jen and Samantha?

Chapter 5: Not Ready for School

- Describe some of Samantha's teachers. Why is Mrs. Montemore her favorite?
- What does Samantha decide to wear to school? What does Jen say about Samantha's clothes? Why does Mom make her change? What is Samantha's argument for the hole in her shirt?
- How does Samantha "recycle" her shirt?
- What are some of the other collections that kids bring to school? What is Ling's collection?
- What does Samantha tell Mrs. Montemore happened to her rock collection?
- What does Richard Frey say about Samantha? Why?
- Where is the class going on a field trip?

Chapter 6: A Rescue Mission

- How does Samantha feel about math and fractions?
- What do Kelli's brothers do to her dolls? How does Samantha save the day?
- What "pink stories" does Mom tell at dinner?
- Why is the "pink laptop" story Samantha's favorite?

Chapter 7: You Call This a Cave?

- What does Samantha do on the bus to keep herself busy?
- Describe Slippery Stone Cave?
- What are some of the cave rules?
- Why does one student call Samantha a “science freak”?
- How does Todd feel about Samantha’s knowledge of caves? How does Samantha feel about Todd?

Chapter 8: A Pretty Great Idea

- What is a Lucky Clucky Cake?
- Why does Jen not want to go to the Grand Canyon on Friday?
- What does Samantha pack for the trip?

Chapter 9: There’s a Bully on the Playground

- Describe what happens between Samantha and Richard? What does Richard call her? Why does Samantha get in trouble? What is her punishment?
- What does Samantha’s mom do while Samantha calms down? How long does it take?
- What are two things at the end of the chapter that Samantha starts to plan?

Chapter 10: Not Sorry

- What does Samantha plan to give her mother for her birthday?
- Who does Samantha need to write apology letters to?

Chapter 11: Party Time

- Why does Samantha need Jen’s help with the birthday cake? What deal does Samantha strike with Jen for her help?
- What is Mom’s reaction to the cake and song? What does she say about the Grand Canyon trip?

Chapter 12: A Talent that Shines

- Describe what Samantha does for the talent contest. Kristin says, “You bombed.” What does that mean?
- In what way does Samantha plan to get revenge on Richard? How does the plan go?

Chapter 13: On Our Way

- Why does Jen “beep” when going through the airport’s metal detector? How does Samantha find out Jen’s secret?
- Describe some of Samantha’s experiences on the airplane.
- Where does Samantha’s mom plan to stop on the way to the Grand Canyon? How long is the drive to the Grand Canyon?
- What does Jen teach Samantha while in the car?

Chapter 14: Hoover Dam Jam

- What does Kelli tell Samantha on the phone?
- What rumor does Kelli hear about Todd?
- How long is the “detour” that Mom takes?
- What is the plan for visiting the Grand Canyon?

Chapter 15: Barely Inn

- Where does Samantha go while Mom and Jen are getting ready?
- What do Samantha and the lady discuss? What does the lady suggest she do? What does Samantha do with the brochure the lady gives her? Why?
- Describe the Grand Canyon.
- How long is the trail to the bottom of the canyon?

Chapter 16: It’s a Hike, Alright

- What does Samantha find on the canyon walls?
- How many kinds of rocks are in the canyon? What do the different layers of rock tell scientists?

- Why are some of the rocks crooked?
- What colors does Samantha see in the rocks?

Chapter 17: Lost or Found?

- Why do Samantha and her mother leave the group?
- Why does the thunder sound louder where they are?
- Where does Samantha suggest they wait until it stops raining?
- What does Samantha learn about her dad?
- What do Samantha and her father have in common?
- How do Samantha and her mother find Jen?
- Why does Samantha put Dad on her “Things I Have Found” list?

Chapter 18: Cloudy, With a Chance of Todd

- How does Samantha feel about returning to her house?
- Who has moved in next door to Kelli?
- What kind of project is Todd working on?

Chapter 19: Change

- Jen has learned more about Samantha’s interest in rocks. How?
- Samantha has learned more about Jen’s interest in boys and hair. How?
- How would you describe this last scene with the sisters?

“Top 5” Lists *See also Data Collection & Surveys - Math, page 11*

Samantha loves to create lists of things she knows, things she likes, things she imagines, and things she plans to do. Here are a few fun activities based on the concept of a “Top 5” list.

- In a notebook, have students create their own Top 5 lists. Ideas may include: favorite movies, favorite lunch foods, favorite places to visit, pets, careers, etc.
- Ask students to interview each other about their Top 5 lists.

- Collect a few Top 5 lists from the class. Without knowing whose list is whose, see if students can figure out the list's owner based on its content.
- As a class, generate a Top 5 list. Create a pie chart to illustrate the various answers and display them on a class bulletin board. This is a perfect lesson in fractions and percentages, too.

Letter Writing (isn't Always a Chore)

In Chapter 10, Samantha's mother sends her to her room to write apology letters to Principal Tancredi and Richard. Samantha finds the letter to Richard the hardest letter she has ever written in all her life!

- Ask students if any of them has received a letter. (For this activity, do not include email.)
- Ask them the following questions: Who was it from? How did you know? How was it written? What did it say?
- As a class, generate a list of different kinds of letters: letters of apology, thank you letters, friendly conversational letters, invitations, etc.
- Review the parts of a letter with students (inside address, date, greeting, body, closing). As a class, generate a list of greetings and closings.
- Have students pretend they are Samantha and write a thank you letter to Chad, the Grand Canyon guide. Their letter should include at least one thing they want to thank Chad for, one memory of their time with Chad, and one update as to what they've been doing since their trip. Encourage students to brainstorm ideas before writing their letters.
- Additional activity: Have students write a thank you letter to someone they know.

Happy _____ to You!

Samantha's mother works for the Sunny Funny Card Company, and she sings unique variations of *Happy Birthday* to keep her in the birthday mood.

Happy Monday to you.

Why do you look so blue?

We'll talk more at dinner.

Don't you know that I love you? (pg 57)

These little ditties are really short poems with a AABA rhyme scheme.

- First, have the class come up with a list of all of the occasions for greeting cards. Choose a few of these occasions and write an AABA greeting together. It's easiest to start with "Happy ____ to you." For example:

Happy Independence Day to you,

With the red, white, blue.

Let's go have a picnic

And fireworks too!

- Next, have students write a poem with a similar rhyme scheme.

Greeting Cards

- Ask students to bring in greeting cards. Gather an assortment of different occasions. Make sure cards are appropriate in terms of content and reading level. Read and discuss the cards, separating them into categories such as humorous, birthday, anniversary, get-well, etc.
- With various art supplies (construction paper, rubber stamps, markers, glue, glitter, etc.), have each student create their own greeting card. Many online and print resources provide templates and ideas for patterns.
- For an additional activity, have students visit the Postcard and Greeting Card Museum online at <http://www.emotionscards.com/museum/history.html> to learn more about the history of the greeting card. Students can write reports on notable people and greeting card companies, and share with the class.

Math

"Whole things are way better than parts. Parts of things end up in fractions, and I ab-so-lutely don't like fractions."

Samantha is quite vocal about her dislike of fractions. But the truth is that fractions can be fun and easy to understand in the context of an activity or game.

Eat Your Way Through Fractions!

This activity is great with M&Ms, Skittles, Smarties, Conversation Hearts, or any other candy that comes in many colors.

- The students each receive 24 candies and are asked to divide the candy into groups by color and then figure out which fraction is represented by the different colors. For example: If they have 24 total candies and 8 of them are red, show them that $\frac{8}{24}$ are red. Those that are a step ahead may recognize that this is $\frac{1}{3}$.
- Once students have figured out the fraction of each color, have them draw it on paper and label the pictures. And of course, let them eat their fractions!

Data Collection & Surveys *See also "Top 5" Lists – ELA, page 8*

This activity is a great get-to-know-you activity for the beginning of the year.

- As a class, create a survey about favorite things, allowing for 4 categories. For example: Favorite Sports~ Soccer, Football, Baseball, or Swimming; Favorite Season~ summer, winter, fall, or spring; Favorite Pizza Topping~ mushrooms, pepperoni, extra cheese, or pineapple; etc.
- Take a tally from the class, and then construct a graph to record everyone's answers. Analyze the graph (9 out of 25 like baseball, and 4 out of 25 like swimming).
- Together, make up a list of survey questions to ask 100 people.
- Groups of 5 ask 20 people each by visiting other classes, the library, the office, and so forth. Once collected, the groups work to sort and classify the results, and create graphs. Have the groups depict findings in fraction form, too. Using the number 100 allows a brief introduction to decimals and percentages.

Fraction Pizzas Game

Materials: Construction paper circles (pizzas), index cards with fractions, and any small items in classroom to use as toppings.

- The circles (pizzas) are divided into halves, thirds, fourths, sixths, and eighths depending on the level of the students. Display the pizzas where everyone can see them.
- Each student takes a turn and picks an index card. The student must decide which pizza to put toppings on. For example: If the student picks $\frac{2}{3}$, he must determine that he has to use the pizza that is divided into thirds to put his toppings on. The student then covers $\frac{2}{3}$ of the right pizza with whatever toppings he wishes.

The Line-Up Game

- Divide the class into groups of 4-6.
- Call one group to the front. As they stand shoulder to shoulder, the other groups come up with fractions based on what they see. For example: $\frac{4}{6}$ wearing jeans, $\frac{1}{6}$ are blonde, and so on. These fractions can be based on clothing, hair color, first letters of their name, gender, etc. Encourage creativity.
- The first group to create 6 fractions wins that round. Game continues until all groups have been called to the front.

Baking with Fractions

Samantha attempts to bake a cake for her mother's birthday. But as anyone who has ever baked knows, it includes A LOT of fractions.

The following is a wonderful recipe for making an individual chocolate cake in a mug using the microwave. It can be done in the classroom or as a homework assignment. The key to using this recipe to teach fractions is to allow only the use of two measuring spoons: $\frac{1}{4}$ tsp and $\frac{1}{4}$ Tbs.

Ingredients:

4 tablespoons flour

4 tablespoons sugar

2 tablespoons cocoa

1 egg

3 tablespoons milk

3 tablespoons oil

1 dash vanilla

1 dash salt (optional)

1 dash baking powder (optional)

Directions:

Put all ingredients in a large mug and mix well.

Microwave for 3 minutes.

The cake will rise, but it will fall when removed from the microwave. Microwave times may vary. If it looks done 15 or so seconds earlier, take it out.

Eat, but be careful. It's HOT!

Science

Samantha is a self-proclaimed scientist. She loves collecting items, making lists, and drawing conclusions. Below are several activities for budding scientists.

The Scientific Method

The scientific method is a way to ask and answer scientific questions by making observations and doing experiments. Most scientists do this without even thinking. However, there are specific steps to the Scientific Method:

- Ask a Question
- Do Background Research/Collect Information
- Form a Hypothesis or "possible explanation"
- Test Your Hypothesis by Doing an Experiment
- Record and Study Data
- Draw a Conclusion

Look at the many activities that Samantha likes to do. For example: collecting rocks, making lists, etc.

- Ask students: Where do each of Samantha's activities fit into the scientific method? Encourage students to support answers with detailed examples from the novel.

Your Very Own Rock Collection

In the story, Samantha did not paint her egg carton, but her classmate, Ling, did. Sam wished she had thought of this! In this activity, children save egg cartons (cardboard cartons work best) and make colorful rock collections similar to Samantha's.

- Have each student paint the inside and outside of a carton using a nontoxic paint. Let dry.
- Students cut various colors of felt into one-inch squares. They place one piece in each of the 12 sections.
- As a class or independently, students search in a yard, park, or playground for rocks that vary in size, shape, texture, and color.
- Rocks are sorted into the carton. (Sam's friend, Kelli, thought it would be nice if the rocks matched the felt pieces.)
- At the library, students check out several books on rock and minerals and try to match their rocks to the ones illustrated in the books. Students make small labels and tuck one in each section.

Mapping Nature

Creating a collection requires exploration of a few different places. When Sam collected rocks, she conducted searches in three specific places: her front yard, the backyard, and the driveway.

- Brainstorm types of collections with the class. Some ideas include leaves, flower petals, weeds, twigs, rocks, etc.
- Choose a place to explore and collect.
- Create a group map of the class's exploration.
- Document their individual findings, marking what item they found and where.

- Ask students to draw conclusions about these places. For example: Does one type of tree thrive in a certain spot? Why? Are the rocks near the stream rough or smooth? Why?

Experiment: The Effect of Freezing and Thawing on Rocks

Rocks appear to be solid; however, they are made of tiny holes that water, air, or oil can seep into. When the water inside a rock freezes, it expands and can cause cracks. Sometimes parts of the rock break off completely. Some rocks are more porous than others and are thus more prone to breakage when frozen and thawed. Conduct the following experiment using a variety of rocks like limestone, granite, or slate.

- First, have students make predictions: Do rocks break more easily after being frozen? Which rocks break more easily after being thawed and refrozen repeatedly? What does this reveal about their composition?
- Put the rocks in a plastic bottle and fill it with water. Freeze the bottle in the freezer and thaw it once the water has frozen. Once the water has melted, freeze the bottle again. After this step is repeated three to five times, remove the rocks from the bottle and note any changes.
- Ask students: Did small pieces of certain rocks break off? Were your predictions correct?

Experiment: Grow Your Own Salt Stalactites

Exploring caves can be fun, as Samantha’s class found out at Slippery Stone Cave. Samantha did research on the Internet for cave facts and found out all about *stalactites* and *stalagmites*. This fun activity demonstrates how easy it is to grow *stalactites*.

Stalactites form when mineral-rich water flows through porous rock and leaves deposits behind. With advanced preparation and a humid or damp climate, stalactites can form with Epsom salt. Conduct the following experiment in the classroom.

- On a piece of black cardboard, arrange four drinking glasses of equal size into a square with each glass 6 inches apart from the others. Cut two, 16-inch pieces of black yarn and tie a washer to each end. Place the washer-weighted end into each drinking glass so that the yarn crisscrosses in the middle above the semicircle and sags slightly.
- Mix mineral solution of water and Epsom salt. Fill a saucepan with water and add Epsom salt 1 tablespoon at a time, stirring until no more salt dissolves. Heat, but do not boil the water, and continue stirring. More salt can be added.

Carefully and slowly pour some of the salt solution into each glass until nearly full.

- The Epsom salt solution will flow up the yarn and accumulate where the yarn hangs low. The solution drips from this point and stalactites form. Stalagmites may also form beneath stalactites.
- Have students observe this “cave” on a daily basis for at least one week. Students can document progress with photographs and notes, and record the growth of stalactites using a bar graph.

Read more: Science Fair Ideas About Rocks & Minerals | eHow.com
http://www.ehow.com/list_5978590_science-fair-ideas-rocks-minerals.html#ixzz2HqinooT4

Geography

Samantha Hansen Has Rocks in Her Head is filled with mentions of interesting places to see (such as the Grand Canyon, Hoover Dam, and Mount Everest). The Grand Canyon, one of the Seven Wonders of the Natural World, is a place Samantha has always dreamed of visiting.

Exploring Geography and Travel

This activity gives students the opportunity to work on map and research skills.

- Using a map and/or globe, ask the class to locate the Hoover Dam, Grand Canyon, Mount Everest, and their school. Have students calculate how far it is from the school to each of these locations. Ask: How long will it take to travel by car? By airplane? What states will they travel through?
- Together, come up with 5 reasons why a trip to the Grand Canyon is the perfect trip for Samantha. Have students find places in the novel to support each reason.
- Ask students to explore their idea of a dream destination and research that place. They can create personal postcards depicting this destination. On the front, they can put a picture of an attraction at that spot. On the other side, they can invent a memory from the trip.

Life Skills

Bullying

Samantha is made fun of because she is different than other kids. Richard calls her a "science freak" and another student makes the joke that she has rocks in her head. Samantha's feelings are hurt and when she finally figures out who has said these things, it escalates into a big disagreement on the playground.

Below is information on bullying, followed by some ideas for discussion.

Types of Bullying

- Physical bullying:
 - Hitting, kicking, or pushing
 - Stealing, hiding, or ruining someone's things
 - Making someone do things he or she doesn't want to do
- Verbal bullying:
 - Name-calling
 - Teasing, taunting, or threatening
 - Insulting or otherwise verbally abusing someone
- Relationship bullying:
 - Refusing to talk to someone
 - Excluding someone from groups or activities
 - Spreading lies or rumors about someone
 - Making someone do things he or she doesn't want to do

Discussion

- Ask the class if they have ever been bullied. What happened? What was the outcome? Have students draw or write about the situation and share.

- Reread Chapter 9 when Samantha and Richard have an argument on the playground.
- Begin a discussion of this chapter by asking: Is Richard a bully? Why, or why not? Is Samantha a bully? Why, or why not? Could Richard or Samantha have used different words or actions to prevent this argument?
- Have students rewrite or re-enact the above scene, changing the outcome to a more positive one.

For more information on identifying and protecting against bullying, visit <http://helpguide.org/mental/bullying.htm>.

Controlling Your Temper

Samantha is always getting into trouble for losing her temper, especially when dealing with her sister. Samantha’s mother asks her to “count to 10” when she starts to get upset.

- As a class, create a list of all the things that “make you angry.” Brainstorm positive strategies to diffuse anger.
- Using the book, make a list of 5 times that Samantha loses her temper. Discuss the situations, Samantha’s reaction, and the outcome.
- Have students rewrite a scene or two, showing how Samantha controls her temper and the outcome.

A Living Tribute

Although Samantha misses her father and never really knew him, she discovers at the end of the book that she has her father’s smile, in addition to his love of the earth.

- For a living tribute, students first research what they have in common with a deceased relative. Students can ask family members or look through old photo albums or keepsakes. They should try to find any shared physical features or interests.
- Have the students write a letter to the passed relative introducing themselves and telling the relative about similarities they’ve noticed.
- Students can then create an oral presentation to introduce classmates to the relative.

- An additional activity: Students design a mural, using butcher paper, as a tribute to the passed relative. They can include details about their looks, life, and personality, highlighting the shared trait.