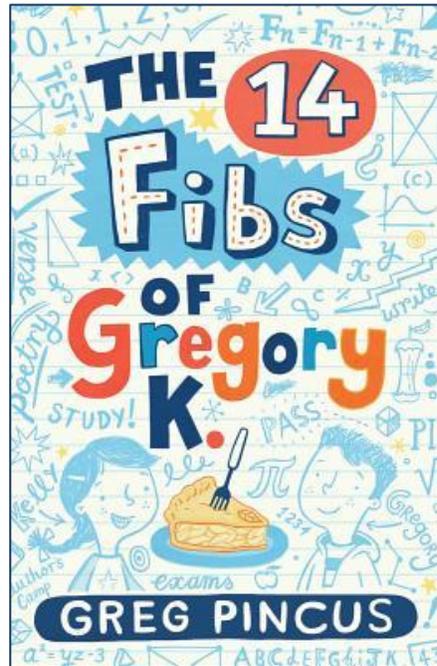


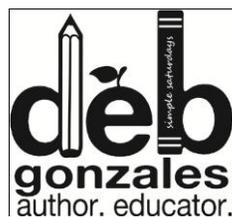
A Core Curriculum State Standards Annotated Discussion
and Activity Guide for



Written by Greg Pincus

Published by Arthur A. Levine Books/Scholastic

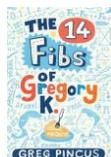
ISBN: 978-439-91299-0



Guide Created by Debbie Gonzales
www.debbiegonzales.com

Table of Contents

The Educational Activity Guide Format	3
Reading Assignment Bookmarks	4
Journal Response and Comprehension Rubric	5
Discussion Questions for Chapters 1 through 3	6
The Pi (π) Number Roll.....	9
Discussion Questions for Chapters 4 to 7.....	11
Create Fibonacci Numbers in Excel.....	13
Discussion Questions for Chapters 8 to 10	14
A Fractal Foldable	16
Discussion Questions for Chapters 11 to 14.....	17
Poetry Pages: A Haiku, A Cinquain, & The Fib.....	19
Core Curriculum State Standards Annotations	
English Language Arts Standards » Reading: Literature	21
English Language Arts Standards » Writing	23
English Language Arts Standards » Speaking & Listening	25
References	27



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The Educational Activity Guide Format

The format of this guide follows a 4 week course of study. *The 14 Fibs of Gregory K.* has been divided into sections. Each section is comprised of discussion questions and follow-up activities for a designated group of sequentially listed chapters. The lessons in this guide are suitable for independent readers or group settings.

Journaling

After engaging in group discussion, students are asked to respond to one of the questions posed in each course section by journaling. A Journal Response and Comprehension Rubric are available on page 5. Journaling is helpful in assessing understanding and personal connection to the discussion questions and the story.

Journals can be purchased or can be personalized by making them out of everyday materials. Instructions for making hand-made journals are presented in the two Ehow.com links below.

http://www.ehow.com/how_5760860_make-journal-out-paper.html

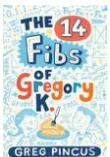
http://www.ehow.com/video_4951964_make-paper-journal-school.html

Reading Assignment Bookmarks

Personal bookmarks are printed on the following page. Listed on these bookmarks are the designated chapter groupings and a space allotted for Target Completion Dates. A suggested format for a group or individual novel study is to assign weekly Target Completion Dates for students to finish reading prior to the weekly book discussion session.

Procedure:

- Print book marks on cardstock – one per student in novel study group.
- Trim the edges of bookmark.
- Give to student with the directions to:
 - Write their name on it.
 - Copy Target Completion Dates in designated space below assigned chapters to be read.
 - Keep the bookmark in the book for reference through the course of the novel study.

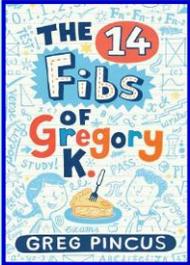


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Reading Assignment Bookmarks

A Bookmark for



Read listed chapters by:

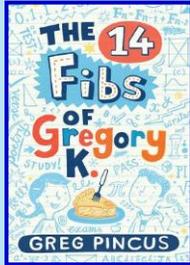
Chapters 1 to 3

Chapters 4 to 7

Chapters 8 to 10

Chapters 11 to 14

A Bookmark for



Read listed chapters by:

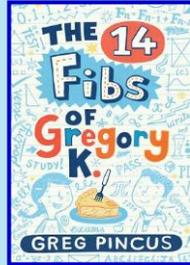
Chapters 1 to 3

Chapters 4 to 7

Chapters 8 to 10

Chapters 11 to 14

A Bookmark for



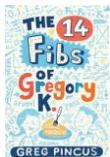
Read listed chapters by:

Chapters 1 to 3

Chapters 4 to 7

Chapters 8 to 10

Chapters 11 to 14



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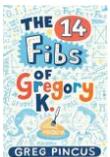
Journal Response and Comprehension Rubric

Use this rubric to assess the students' abilities to complete journal activities. Share this assessment with students prior to completing the journal-writing lessons to illustrate the assessment process. The rubric can be used touchstone for discussion and feedback with each student.

Student name _____ Date _____

1. The student writes journal responses in complete sentences. _____
2. The student writes three or more sentences to answer questions. _____
3. The student responds to questions by self-questioning, retelling, predicting, or assuming the role of a character. _____
4. The student's experiences and opinions are clear. _____
5. The student works with a peer to share journal responses and to develop a combined response when requested. _____

Excellent 4	Very Good 3	Fair 2	Poor 1
The student completes the task with no major errors.	The student completes the task with only a few major errors and some minor errors.	The student completes the task with some major errors and many minor errors.	The student fails to complete the task.
The student demonstrates a full understanding of the concepts.	The student demonstrates a strong understanding of the concepts.	The student has difficulty understanding the concepts.	The student does not understand the concepts.



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Discussion Questions for Chapters 1 through 3

“And Gregory?” his father said. “Since you joined us, how would math make you a better superhero (4)?”

- What do you think Gregory’s father meant in saying “since you joined us?”
 - Describe ways that Gregory’s character and interests are similar to those in his family.
 - Describe ways that Gregory differs from the members of his family.
- Can math make someone a superhero? Explain your answer.
- Oftentimes superheroes have private lives, in which they do things in secret. Does Gregory have a private life? How so?

“Was Parson Weems saying that if you are honest with those that love you, in the long run you’ll be better off (8)?”

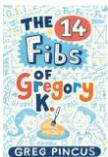
- Do you agree with Kelly’s comment? Does being honest with your loved ones pay off in the long run? Explain your answer.
- What does the fact that Kelly clarifies the question about honesty say about her character?
- Are there different ways for people to be honest? Different types of honesty? If so, explain.
- Describe truth.
- Define a lie.
- Is it possible to tell a half-lie/half-truth? How so?

Mr. Davis stopped at Gregory’s desk and quickly rotated the practice test. Suddenly, Gregory’s grade changed to a 99 (14).

- What does Mr. Davis’ action say about his character?
- How do you think Mr. Davis feels about Gregory’s struggles in math?
- What do you think Mr. Davis feels about Gregory?

“It was a good conversation,” Gregory continued. “We even joked about pi (28).”

- In what way is Gregory making truthful statement?
- In what way is Gregory being untruthful?
- The word “fib” is defined as a trivial, typically unimportant lie. Can Gregory’s comment be considered to be a fib? How so?
- What motivated Gregory to tell this half-truth?



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There was a long pause before Gregory continued, using his most forced, fake, happy voice. “We’re going to Author’s Camp, Kelly (37)!”

- Do you think Gregory’s comment is more like a lie than a fib? How so?
- What motivated Gregory to tell this untruth?
- Describe how telling this untruth creates complications for Gregory.
- Compare the fib about discussing pi with Mr. Davis with telling Kelly that they’ll be going to Author’s Camp. Consider motivation, intent, and possible consequences. Which one bears the largest potential for trouble?

“You just can’t move away, you know?”

“That’s what I said too.”

“How’d that go?”

“Not well.”

“Oh.”

“Yeah (41).”

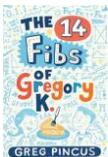
- Compare this series of dialogue to the poems printed at the beginning of every chapter.
 - Tell how the dialogue exchange and the poems are similar.
 - Describe how they are different.
- Is there a word pattern or sequencing of some kind happening in these samples? Describe the pattern.

“Dad, I cannot tell a lie,” Gregory said, then paused for dramatic effect. “I don’t love math (46).”

- What part of this comment is based on truth?
- What part of the comment is false?

“Well, you forced me to tell you this now. I really wanted it to be a surprise, but...” He waited again for the tension to build. “I’m going to be part of City Math this year. My application’s already in (50).”

- What motivated Gregory to tell his parents and Mr. Davis that he was going to be a part of the City Math competition?
- Predict the consequences of this untruth.
- Explain how Gregory’s fibs are complicating his life and relationships with his parents, Kelly, and Mr. Davis.

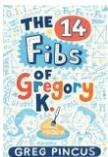


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Consider the chapter headings and the poem written specifically for each chapter.

- Tell how they reflect the theme of each chapter.
- Study the sketch marks drawn on the poem. Explain how they contribute to the poem and the chapter's message.
- Describe how they introduce the action that occurs in the chapter?
- Explain how they relate to the changes occurring within the character(s).

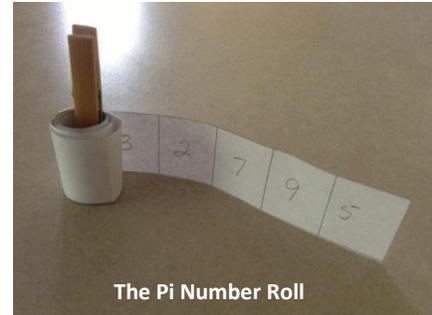


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The Pi (π) Number Roll

"Mmmmm. Of course you know I love this. All math teachers love pi! Get it? Pi! Pie (21)!"



The Pi Number Roll

Objective: To experience the numeric sequence for pi (π) in a concrete, manipulative manner.

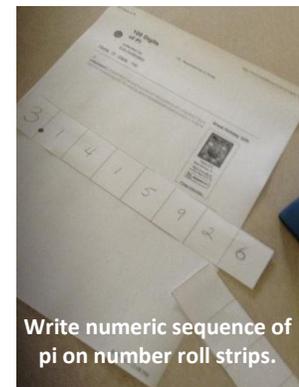
Materials:

- Scissors
- Tape
- Pencil
- Clothespin or large paper clip
- Print out copies of the number roll grid (page 10)
- Google or other preferred Internet search engines

Procedure:

- Print number roll grid. (Note that there are 32 spaces provided on the printout. Depending on how long you want your roll to become, you may want to print out several sheets.)
- Using Google, or other preferred Internet search engine, type "pi to 100 digits" or whatever number of digits preferred. Print.
- Use scissors cut number roll grid in strips.
- Following the numeric sequence listed on your Internet search, write the numbers in each consecutive square. *Don't forget the decimal!*
- Tape additional strips together, if need be, to continue writing the numeric sequence of pi (π).
- At the starting point of the strips (3.14...) begin rolling the taped strips.
- Secure your roll with the clothespin.
- Continue this process an infinite number of times!

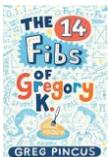
Special Note: Should one's number roll become quite large, a 12 inch piece of string may be necessary to keep it secure.



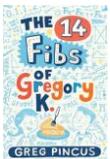
Write numeric sequence of pi on number roll strips.



Use clothespin to secure number roll.



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Discussion Questions for Chapters 4 to 7

“You think you can just say you’re entering City Math and everything will be fine? Dad will shred you like you’ve never been shredded if you don’t deliver. Don’t you get it?” O shook his head. “You’d rather fail math. Trust me (56).”

- Do you think O understands more about the consequences of working closely with Dad on a project than Gregory does? If so, how do you think he came to understand this?
- When someone asks for another to trust them, that person is generally speaking the truth. Is O speaking the truth in this comment? Tell how, you think, O has come to know this truth about Dad and math.
- Do you think O understands Gregory’s motivation to enter City Math? How so?
- Do you think things have always been easy for O? Could it be that, perhaps, he has worries and pressures of his own, too? Explain your answer.

“Because...can I be honest, Mr. Davis?”

“Always (64).”

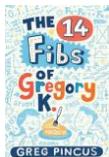
- Why do you think Gregory is willing to be honest with Mr. Davis?
- Why do think Gregory asked permission to be honest?
- How about you? Are there people that you are more willing to be honest with than others? Why is this?

Kelly lifted an eyebrow as if to say, “Like when you had to meet with your father after ordering twenty-seven boxes of tangelos when I was selling fruit to raise money for a dance recital that never happened because you never paid (73).”

- Kelly didn’t say these words, and yet Gregory sensed her message. How well do you think these two know each other? Support your answer.
- Do you share a relationship like this with someone? Tell about it.
- It appears that Gregory has fallen short of his keeping his word before. So much so that Kelly was unable to participate in a dance recital. And yet they remain close friends. What does this say about Kelly’s feelings for Gregory?
- Do you think Kelly is someone that Gregory can risk being honest with? If so, why is he fibbing to her about the Author’s Camp?

“It’s the Lab!” his father said while practically jumping up and down with glee. He pulled on the rope and the trapdoor opened, bringing a ladder down with it. “And you can finally, finally, finally come up and join us (75)!”

- Can you explain why this behavior is odd?
- Who is the “us” that Gregory’s father is referring to?
- Why has the Lab been off-limits to Gregory, up until this point?
- Is joining his father in the Lab something that Gregory wants to do? Why or why not?



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- Can Gregory be honest with his father with regard to his lack of willingness to join him in the Lab? Why or why not?

The truth was, Gregory loved going to the library (99).

- Explain the difference between the Lab and the library.
- Why does Gregory enjoy going to the library over joining his father in the Lab.
- If it is true that Gregory loved going to the library, then what does that say about his inner desires? About being true to who is really is?
- Does the City Math competition line up with his inner desires? Explain your answer.

Kelly leaned forward and studied Gregory, her eyes drilling him for so long he wanted to hide in the stacks. Finally, she shook her head. "I don't get it. Why are you doing this (103)?"

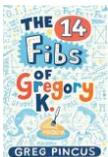
- Earlier, Kelly was able to communicate with Gregory without saying a word. However, in this case, she is baffled by his actions and intent. Why do you think this is so?
- Explain why you think Gregory is fibbing about going to the City Math competition?
 - Who is he trying to please?
 - By doing so, who might get hurt?
 - How might others, or even Gregory, be hurt by his actions and fibs?

But the words didn't come. He stammered out something about there being confusion with Math Is Magic Camp, but the truth was, he wasn't even sure exactly what he said (112).

- Explain how Gregory has been trapped by his own words. How have his fibs turned against him?
- Why do you think he fibbed even further in saying that the confusion was with Math Is Magic Camp rather than the Author Camp? Is it more important for him to side with his parents over Kelly? Why or why not?
- What is meant by the phrase "...he wasn't even sure exactly what he said?" Could it be that Gregory has told so many fibs that he's not sure what he's said to whom? How so?
- Who has been hurt as a result of Gregory's fibs? Explain how.
- Is there any way that Gregory can make things right with Kelly? How so?
- Is there any way he can make things right with himself? Tell how.

Consider the chapter headings and the poem written specifically for each chapter.

- Tell how they reflect the theme of each chapter.
- Study the sketch marks drawn on the poem. Explain how they contribute to the poem's message.
- Describe how the poems introduce the action that occurs in the chapter.
- Explain how they relate the changes occurring within the character(s).



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Create Fibonacci Numbers in Excel

Look, I see how the sequence thing works. Start with 0 and 1 and add 'em to get the next number, then keep adding to last two numbers together to get the next. That's not hard, even for me (93).

Note: Leonardo of Pisa, known as Fibonacci, perhaps one of the middle ages greatest mathematicians, is best known for introducing the infamous Fibonacci Series to the western world, a series of numbers in which each number (*a Fibonacci number*) is the sum of the two preceding numbers. The amazing Fibonacci Series appears in all realms of nature – plants, animals, the solar system the universe, weather patterns, and even in the human skeletal system!



The first Fibonacci numbers are 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 ...

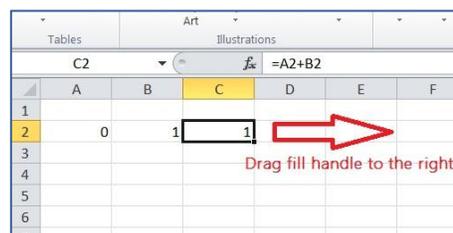
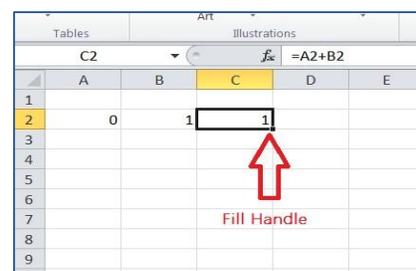
Objective: To use a computerized formula to create the Fibonacci number sequence.

Materials:

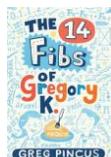
- Excel computer software

Procedure:

- In cell A2 type a zero (0) and press the **Enter** key.
- In cell B2 type 1 and press the **Enter** key.
- In cell C2 type the formula =A2+B2 and press the **Enter** Key.
- Click on cell C2.
- To copy the formula to the adjacent cells:
 - Place the mouse pointer over the fill handle in the bottom right corner of cell C2.
 - Hold down the mouse bottom on the fill handle and drag to the right to cell S2.
 - S2 should contain number 2584.
 - To continue the Fibonacci numbers, continue dragging to the right with the fill handle.



French, Ted. "Fibonacci Numbers - Fibonacci Numbers in Excel - Create Fibonacci Numbers in Excel." *Free Microsoft Excel Spreadsheet Tips and Tutorials*. Web. 28 Aug. 2013. <http://spreadsheets.about.com/od/spreadsheetlessons/qt/Fibonacci_Numbe.htm>.



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Discussion Questions for Chapters 8 to 10

He took a few deep, calming breaths and climbed the rickety stairs to the Lab. Much to his relief, he was alone (116).

- What does the fact that Gregory has chosen to go the Lab on his own say about his character at this point in the story?
- Why do you think he chose to go to the Lab rather than his room in the basement?
- Could the fact that he is climbing steps to a high point in the house be a symbol of a change happening within Gregory? How so?
- Gregory's fibs have created problems for himself and those who care for him. Do you think he's beginning to understand who is accountable for the problems, as well as who will have to fix them? If so, how can he go about solving these problems?
- Tell what "being accountable for your actions" means.

O quickly sprinted to the window and peered outside. "You and Gregory were talking math, Dad," O said, "so I figure this is that day I get to see pigs fly (121)!"

- Why does O use sarcasm in this phrase? Could it be that, perhaps, O might be jealous that Dad and Gregory were talking about math? How so?
- If O doesn't have the math connection with Dad, what else could they base their relationship upon?
- Without a math connection, what can anyone in the family use as a foundation for a relationship with Dad?

My Life – Kelly = x.

Can you solve for x (125)?

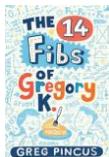
But math?

I'm really trying to solve for "why"... (126).

- Explain how mathematical reasoning is becoming part of the way Gregory is beginning to think.
- Whose problem is it to solve for "x?" How so?
- What does telling the truth have to do with Gregory solving for "why?"

"I'd say it's great, Gregory K. I know I'm your little sister so I should say it's lousy and then chastise you for your efforts, but I actually deal in truth, and I love your poetry (133)."

- Being that Kay has chosen to praise his poetics rather than shame him, tell how important his little sister's comment is to Gregory.
- Tell what it means to "actually deal in truth?"



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“You’re a big loser, G, since you might not go to camp.” Kelly said, “but at least you weren’t a super-doofus and lying about it again, so thanks (142).”

- Explain how Gregory learning to deal in truth.
- Explain the consequences of dealing in truth.
- Explain how being accountable for his mistakes and fibs is benefitting Gregory.
- Have you had an experience like this? One in which you had to be accountable for mistakes you made? Tell about it. Explain the details and the lessons you learned as a result.

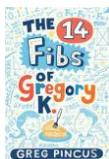
Hey!!!! Short Fibonacci poems = Fibs.

Fibs! What could be better for me than that???! (154)!

- Explain how math has become relevant in Gregory’s life.
- Describe how Gregory is being true to his inner desire to be a writer.
- Is Gregory is now dealing in truth? How so?
- Can you predict how his dealing in truth will benefit him? Kelly? His family?

Consider the chapter headings and the poem written specifically for each chapter.

- Tell how they reflect the theme of each chapter.
- Study the sketch marks drawn on the poem. Explain how they contribute to the poem’s message.
- Describe how do they introduce the action that occurs in the chapter?
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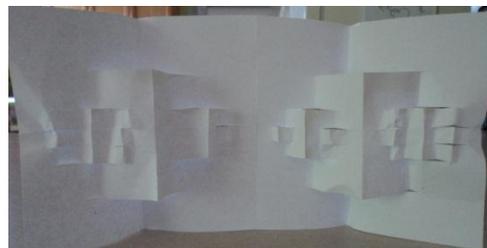
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A Fractal Foldable

"You're a better artist than mathematician, Alex. So please, compare me to that...(123)."



The Fractal Foldable

Objective: To create a simple fractal in a hands-on, manipulative manner.

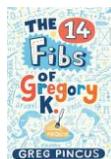
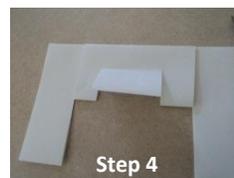
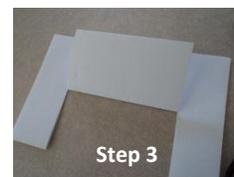
Note: Fibonacci's number sequence is the foundation of exploration of the fractal patterns in arithmetic. Fractals are shapes that repeat themselves, copying their pattern over and over and over again. Click [HERE](#) to watch short video about Fibonacci and his fractals. Or click [HERE](#) to watch a video describing what a fractal is.

Materials:

- A sheet of paper
- Scissors

Procedure:

1. Fold piece of paper in half.
2. At a distance of $\frac{1}{4}$ of the folded edge length from each side, make two cuts into the folded edge. Cut halfway to the other (unfolded) edge.
3. Fold up the middle flap formed by these cuts. Repeat the fold several times in both directions; finish with the fold toward you.
4. On the fold just formed (the smaller folded edge), repeat the previous two steps. At a distance of $\frac{1}{4}$ of the smaller folded edge length from each side, make two cuts into the smaller folded edge. Cut halfway to the other edge.
5. Fold up the middle flap formed by these cuts. Repeat the process again.
6. Repeat until the paper fold becomes too thick to cut.
7. Unfold.
8. Refold each of the middle sections so that they will fold out toward you.



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Discussion Questions for Chapters 11 to 14

“It’s not that. I just don’t see what you see, O. I wish I did.”

“No you don’t.” O said, as he placed a final plate in the drying rack. “You just wish it didn’t matter (162).”

- Is there some truth in O’s comment? Explain your answer.
- What do you think motivated O to give up his spot in the City Math competition?
- How does O’s stepping down affect Gregory’s chances in the competition? Do you think that O even cares about this?

“They were fascinating to you, Dad. But you know what?” Gregory took a deep breath and turned his focus solely on his father. “I like poetry. I write poetry, Dad. So I used that as an example. I’m sorry if you didn’t like it (173).”

- Explain how being honest with Dad is a risky thing for Gregory to do.
- Earlier, O warned Gregory that their father would shred him if he didn’t deliver. What do you think Gregory is most concerned about – being “shredded” or disappointing his father by not being the person his father wants him to be?
- In this phrase, Gregory is being truthful with his father and to himself. Describe the benefits of each.

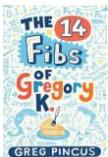
“Gregory taught his math class poetry,” his father said, out of nowhere. Gregory searched the words for hidden meaning, but there was nothing there (183).

- Why do you think Gregory’s father made this comment in this manner, out of nowhere like this?
- What is meant by words with “hidden meanings?”
- Why is it important to Gregory that there were no hidden meanings in his father’s words?
- Prior to this moment, Gregory had been avoiding his father. Why?
- Has Gregory’s risk of being truthful with his father about his passion for writing paid off? How so?
- Compare this scene with the Parson Weems parable. Do you see any similarities in the two? Any differences? Explain your answer.

“If you love to write so much, why didn’t you ever tell us before (187)?”

If telling his parents that he liked writing was never important before, what was different now (188)?

- Explain why telling his parents about his passion is important now?
- What has changed within Gregory?
- What has changed for Gregory?
- What caused these changes to occur?



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He felt fabulous, and for once, he couldn't wait to go speak to his father (209).

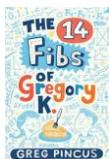
- What brought about this fabulous feeling?
- Explain why the poetry book meant a great deal to Gregory.
- Explain why the poetry book meant a great deal to his father, too.
- How are both father and son being truthful regarding their feelings about each other and their differences?

"...But I had said I'd do City Math, like my father and brother before me, so I had to come up with something. And here I am on the main stage, thanks to my brother O, about to read you poetry (221)."

- Do you think that Gregory is truly grateful to O for the opportunity to be on the main stage? How so?
- Much like being allowed to enter the Lab, tell how Gregory has earned a place in the family's mathematical legacy on his own terms.
- If you were to sum up this scene in one phrase, what would it be? Why?
- Explain the importance of dealing in truth. How does it pay off, in the long run?

Consider the chapter headings and the poem written specifically for each chapter.

- Tell how they reflect the theme of each chapter.
- Study the sketch marks drawn on the poem. Explain how they contribute to the poem's message.
- Describe how do they introduce the action that occurs in the chapter?
- Explain how they relate to the changes occurring within the character(s).



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Poetry Pages: A Haiku, A Cinquain, & The Fib

The Fibonacci sequence shows up in nature, right? It's a "rhythm," you said, and you can find it all over. And I figure haiku is just a rhythm too. So... (135-6).

Use your journal entries and the links and videos listed below as inspiration to write a haiku, a cinquain, and your very own Fib by following the poetic form description found on page 20.

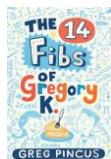
Some ideas to explore in your poetry might be to:

- Consider the mathematical patterns presented below and in the book. Think about how these patterns seem to hold the world together in marvelous and mysterious ways.
- Also, think about your own life. Are there marvelous and mysterious patterns holding it together, too?
- Ask yourself how has reading *The 14 Fibs of Gregory K.* affected you?
- Were there times in the books that made you laugh? Made you think? Maybe even made you mad? Write poetry about them.
- Which character do you identify with? Why?

For further inspiration:

- Click [HERE](#) to listen to a rendition of the pi (π) numeric sequence put to music.
- Click [HERE](#) to watch a video explaining how pi (π) can be put to music.
- Click [HERE](#) to hear pi (π) to the first 100 digits performed on the piano.
- Click [HERE](#) for pictorial explanation of the Fibonacci series in nature.
- Click [HERE](#) for video featuring examples of fractals and the Fibonacci series in nature.
- Click [HERE](#) for a video explanation of Fibonacci spirals.
- Click [HERE](#) to access a website dedicated to creating fractals – Fractivities!
- Click [HERE](#) to digitally create a fractal.

"You write so wonderfully. I hope you never stop... (219)."



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A Haiku

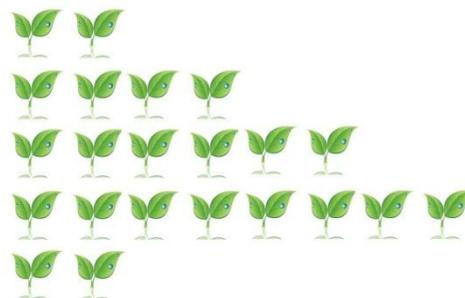
The haiku originated in Japan about 800 years ago. Each poem contains three unrhymed lines and usually includes 17 syllables, arranged in lines of 5, 7, and 5 syllables. A haiku usually describes a scene in nature and includes a seasonal reference (Janesczko, 56).



The Haiku Form

A Cinquain

This poetic form takes its name from the Latin word *quinque*, “five.” The cinquain is like the haiku in that it is composed of a set number of syllables (22) and a per-line syllable count (2-4-6-8-2). A good cinquain will flow from beginning to end rather than sounding like five separate lines (Janesczko, 56).

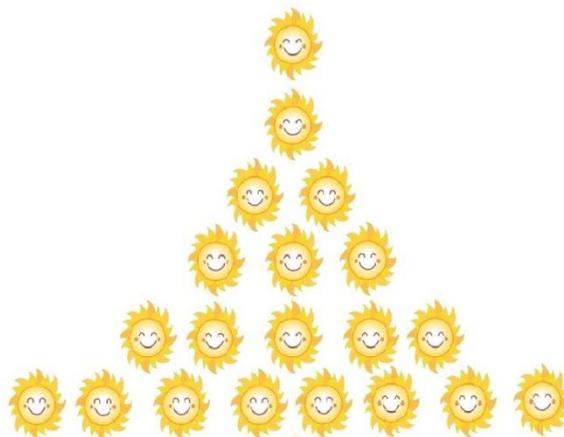


The Cinquain Form

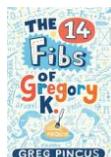
The Fib

Each line has the number of syllables of the Fibonacci sequence (0-1-1-2-3-5-8). I stopped after eight syllables because it starts to get really long fast (Thirteen syllables was like a sentence and twenty-one was just long!)

If I stop after the eight, the whole poem has twenty syllables (if you’re counting along, a haiku has seventeen), and it has six lines. I think that makes a cool poem type (Gregory K., 136).

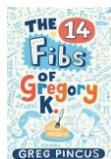


The Fib Form



Core Curriculum State Standards Annotations

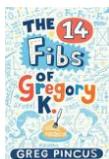
English Language Arts Standards » Reading: Literature		Discussion & Journaling	The Pi Number Roll	Fibonacci in Excel	Fractal Foldable	Poetry Pages
RL.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	✓				
RL.3.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events	✓				
RL.3.5	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.	✓				
RL.3.10	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently.	✓	✓	✓	✓	✓
RL.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	✓				
RL.4.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).	✓				
RL.4.5	Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.	✓				
RL.4.10	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	✓	✓	✓	✓	✓
RL.5.3	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).	✓				



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English Language Arts Standards » Reading: Literature
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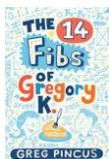
		Discussion & Journaling	The Pi Number Roll	Fibonacci in Excel	Fractal Foldable	Poetry Pages
RL.5.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.	✓				
RL.5.10	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.	✓	✓	✓	✓	✓
RL.6.2	Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.	✓				
RL.6.3	Describe how a particular story’s or drama’s plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.	✓				
RL.6.10	By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.	✓	✓	✓	✓	✓
RL.7.3	Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	✓				
RL.7.5	Analyze how a drama’s or poem’s form or structure (e.g., soliloquy, sonnet) contributes to its meaning	✓				✓



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English Language Arts Standards » Writing

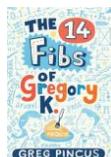
		Discussion & Journaling	The Pi Number Roll	Fibonacci in Excel	Fractal Foldable	Poetry Pages
W.3.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.	✓				
W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	✓				
W.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.	✓				✓
W.3.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	✓				✓
W.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.	✓				
W.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	✓				
W.4.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience	✓				✓
W.4.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	✓				✓
W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.	✓				
W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	✓				
W.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.	✓				✓



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English Language Arts Standards » Writing (cont.)

		Discussion & Journaling	The Pi Number Roll	Fibonacci in Excel	Fractal Foldable	Poetry Pages
W.5.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	✓				✓
W.6.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience	✓				✓
W.6.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	✓				✓
W.7.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	✓				✓
W.7.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	✓				✓



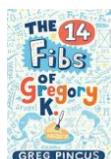
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English Language Arts Standards » Speaking & Listening

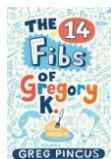
		Discussion & Journaling	The Pi Number Roll	Fibonacci In Excel	Fractal Foldable	Poetry Pages
SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 3 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓				
SL.3.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	✓	✓	✓	✓	✓
SL.3.3	Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.	✓				
SL.3.6	Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.	✓				
SL.4.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 4 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓				
SL.4.2	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	✓	✓	✓	✓	✓
SL.4.3	Identify the reasons and evidence a speaker provides to support particular points.	✓				
SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓				
SL.5.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	✓	✓	✓	✓	✓
SL.5.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.	✓				
SL.6.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.	✓				



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English Language Arts Standards » Speaking & Listening (cont.)

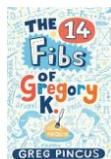
		Discussion & Journaling	The Pi Number Roll	Fibonacci in Excel	Fractal Foldable	Poetry Pages
SL.6.2	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.	✓	✓	✓	✓	✓
SL.7.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.	✓				
SL.7.2	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.	✓	✓	✓	✓	✓



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