Jason and the
Matha Lisa

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Math Book

Do not touch

Jason
and the
Matha Lisa

Written and Illustrated by
the Students of the 2008-2009
Daniels/Strong 6th Grade Team
of High Tech Middle

Story Concept by Connor Franklin
Cover Art and Character Illustrations by Gabrielle

Chapter 1

Pablo Picasso: The Coordinate Plane

By Connor   Christopher   and Nicole

"I'm so happy that there are only nine more days of summer school left," thought Jason as he walked into the Connor Franklin Rey Museum of Art with his dad.

"You're so lucky that you get to work at an art museum, Dad" Jason told his father.

"I'm only a security guard, Jason," his father reminded him.

"At least you're at an art museum. Dad, can I go explore the museum?"

"No, Jason you have to do your homework before you go exploring the museum. That's why you're in summer school."

"But Dad, I'm so good at math, I don't even need homework!" he complained.

"Then why are you in summer school son?"

"Because Dad," Jason cried, "the teachers hate me! I wish Mom never sent me here with you!"

"Jason, can you please just do your homework?" Jason's dad pleaded.

"Dad! I wanna explore the art museum!" he whined.

"Okay Jason, I'll make a deal with you. You have to do your homework, but you can do it on a bench in one of the art galleries," said his father.

Jason's dad always tried to make deals with him when fights weren't going his way. This time it worked.

"Okay!" Jason agreed. "I'll go to the DaVinci gallery!"

He headed onward to the DaVinci gallery. He flew down the hallway as if a stampede of wild animals were chasing him.

In the DaVinci, gallery Jason decided to sit on a bench facing the famous portrait of the *Mona Lisa* to do his coordinate plane homework.

"What's a coordinate plane?" Jason thought to himself as he started his homework. "Oh! This is so hard!" he cried as he furiously banged on the bench.

"Pssst, pssst, pssssst!"

"What? Who's there?" Jason asked.

"Look behind you," whispered the voice.

Jason turned his head slowly. "Who's there?" he asked fearfully as he turned around, thinking that he would see a person. All he saw was the painting of the Mona Lisa. Jason was about to turn back to his homework, but all of a sudden he saw the Mona Lisa's lips move and say:

"I think my sister can help you with that."

"Did that painting just speak to me?" Jason thought to himself confused. "Uh, can I help you?" he inquired.

"No, but I know someone who can help you," said the painting.

"Help me with what?" he replied.

"With your coordinate plane homework."

"What are you talking about, I don't need any help. But wait, how are you going to help me?"

"With my sister, of course. Come into my painting."

"Wait-" But Jason was cut off by a sudden sucking feeling. Then, Jason found himself in the painting of the Mona Lisa.

"Welcome to my painting, Jason," the Mona Lisa told him.

"Uh, nice place you got here," he complimented her, still not quite sure what was going on.

"Here is my sister. Her name is the Matha Lisa, but you can call her Lisa. She will teach you everything you need to learn about math."

"But I already know everything I need to know about math!" Jason complained.

All of a sudden a second figure appeared in the painting.

"Who's that?" Jason asked as he pointed his finger at someone who looked a lot like the Mona Lisa, but younger. Her mysterious eyes stared at him, as if the painting were alive.

"My sister already told you; I'm the Matha Lisa." she replied.

"Nice to meet you," said Jason annoyed. "Can I go now?"

"I heard you wanted to learn about math, Jason," she told him excitedly.

"I'm already good at math!" he exclaimed.

"Then what's a coordinate plane?"

"Uh, well, uh..."

"Come on Jason, just follow me, and I will take you somewhere where we can learn math."

All a sudden, the Matha Lisa grabbed Jason and they started running through the different paintings until finally they reached the Pablo Picasso section.

"Jason, this is the painting we will be learning math in. It's an abstract painting called the *Dora Maar au Chat* and it was painted in 1941 by an artist named Pablo Picasso," explained the Matha Lisa excitedly. "His first word was *lapiz* which is a Spanish word for pencil."

Jason was overwhelmed by all the information.

"Wow, I already knew all that stuff," he lied.

"Come on Jason, let's get to the math!"

"How many times do I have to tell you, I already know everything about math!"

"Then what are you doing in summer school?" she added slyly.

"How did you know that?"

"I heard you and your father arguing," said the Matha Lisa. "Come on Jason, let's get to doing the math."

The Matha Lisa waved her hand and suddenly all the color vanished from the *Dora Maar au Chat painting.*

"Wow, how did you do that?" he exclaimed.

"We will talk about that later. Let's get to the math."

After the Matha Lisa spoke, she waved her hand again and a coordinate grid appeared in the foreground of the painting.

"Do you know what that is, Jason?" the Matha Lisa asked him.

"Uhhh, is it one of those grid thingies?" he asked.

"Yes. So, do you know how it works?"

"Kinda."

"Okay Jason, here's how it works," announced the Matha Lisa. "Jason, we're going to plot out this whole *Dora Maar au Chat* painting!"

"What does that mean?" asked Jason confused.

"It means that we are going to use the x axis and the y axis and use different points on the grid so we can trace out this painting."

"Uhhh!" Jason moaned.

"It's not that hard Jason. Let's start out with the left hand, so that point would be at about 9 on the x axis, and the -5 on the y axis. The number on the x axis always goes first, so we write that coordinate like this: (9, -5)

`"I'm kinda getting it now!" Jason exclaimed.

"Okay let's do another one."
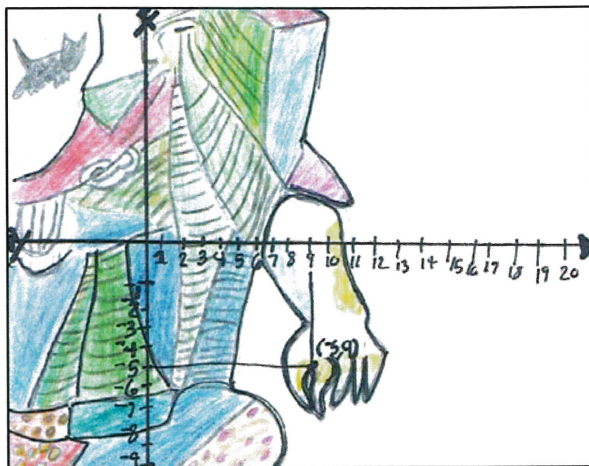
"Well how do we figure out the next point?" he inquired.

"Well we should find out what the quadrant her left hand is on the grid," the Matha Lisa responded.

"Quadrants?" Jason asked confused.

"Quadrants are the four spaces on the grid made by the x and the y axis," the Matha Lisa explained. "The first quadrant is on the top right corner, the second quadant is on the top left corner, the third quadrant is the bottom left corner, and the fourth quadrant is the bottom right corner."

"Oh I get it now. The first quadrant is a positive point on the x axis and a positive point on the y axis, so when you find a point on the grid the first point is going to be positive and the second point is going to be positive.

"And in the second quadrant, it's positive on the x axis and negative on the y axis. The third quadrant is negatives on the x and y axis. The fourth and final quadrant is the same as the first quadrant, but in reverse!" Jason explained excitedly.

"Very good Jason!" the Matha Lisa exclaimed, patting him on the back.

"Uh, thanks," he responded. His teachers were never this happy when he figured things like this out in school, probably because they thought he was showing off, which he usually was.

"Let's continue finding points," she told him.

"Okay."

They continued in silence, until Jason broke it with a question. "Are making dot-to-dot pictures the only reason the coordinate plane was invented?"

"Good question, Jason," the Matha Lisa complimented him. "No, actually, there are many uses."

"Like what?" he inquired.

"Well," she said, thinking hard, "I think the creator, Rene Descartes, invented it to measure the distance between one point and another. Yes I'm sure of that, because he was home ill when he was looking at a fly on his

ceiling. He wanted to find out the distance between him and the fly without using a measuring stick so it wouldn't fly away. And thus, the coordinate plane was born!"

"Are there any other uses?" Jason asked, now very interested in all the uses for the coordinate plane.

"The coordinate plane is often used on maps to find the latitude and longitude of places or things," she explained.

"But wait," said Jason confused, "How do I know which line is the latitude and which is longitude? On a regular grid it's the x axis and the y axis, not latitude or longitude."

"Yet another great question, Jason. You see, on a map grid, latitude is going horizontal so technically it's the x axis, and longitude is going vertical so it would be the y axis," the Matha Lisa told him.

"How the heck am I supposed to remember that?"

"Well, I remember it with funny words. Since latitude is the width of the map, I call it *fat*-itude. And since longitude is the length of the map, I call it *long*-itude!"

"That's cool!" Jason exclaimed.

"Yes it is. I can't remember any more uses. After living hundreds of years my memory has gotten pretty foggy. Is that that what you kids say these days, 'foggy'?"

"Uh, I-I don't know." he responded, confused.

"Could you check? I want to sound as hip and groovy as possible now that a kid's around me. Do you put those words together, 'hip and groovy'?"

"Um, it's kinda redundant. But you don't have to sound cool around me. I'm only going to be here tonight."

"We'll see, Jason."

What's that supposed to mean? Jason thought to himself, *I won't need any more help... or will I?*

"Jason! Look, it's beautiful!" the Matha Lisa shouted.

"Huh?" he asked turning around, then he saw it. They had finished plotting the *Dora Maar au Chat* painting. It looked even prettier than before, as if the painting was as an ice-cream cone and the math they had done to it had shaken some sprinkles on top, making it more beautiful.

"We've done a good job tonight Jason, but it's getting late. I'll see you later."

"Wait wha-" Jason didn't get to finish because he felt the same sucking feeling as he did earlier that night and he was thrown out of the painting.

The next morning in summer school, Jason got his graded homework back. When he looked at the paper he was surprised to see an A+ on the

page, and plus a whole bunch of stars and smiley faces.

After class the teacher held Jason back for a few minutes.

"Jason," he said in his dull voice, "I'm very surprised and satisfied with your grades on last night's homework. Good job."

"Thanks!" Jason replied.

Walking out of the class, Jason wondered if anything that happened last night actually happened. Was the Matha Lisa real? He'd check tonight. Right now he'd celebrate the A+.

Chapter 2
Roy Lichtenstein: Even and Odd Numbers
By Juan   Cristiana   and Isaac .

The next night, Jason remembered waking up and thinking that it was all a dream. So he went to the museum that night to see if the Matha Lisa was real. He looked at the painting where he "saw" her last, which was in the Pablo Picasso gallery. When he got to the painting, he was coughing like crazy, and he thought he might find the Matha Lisa, but all he saw was the abstract painting of *Dora Maar au Chat*. So he wandered around trying to see if he was really crazy or she was real, but he did not find her. Finally, he walked up to the painting called *Dr. Waldmann*, which was painted by some guy named Roy Lichtenstein. When he walked up to the painting, he noticed some writing at the bottom:

Created in 1979
Private Collection

All of a sudden, he looked up and got sucked in. When he saw the Matha Lisa, he ran to her side, a little creeped out by how he got sucked in. But when he was by her side, he began to feel better.

"You don't look so good," the Matha Lisa worried.

"I know. I have been coughing all night," Jason mumbled.

The Matha Lisa looked at him with sympathtic eyes, as if she was his mom.

"This doctor, Dr. Waldmann, can help you with your horrible cough," the Matha Lisa added.

"Nothing about math?" Jason asked.

"No, no math," lied the Matha Lisa.

"Sweet!" Jason yelled.

"Let's meet the doctor," the Matha Lisa said.

"Fine." Jason said while coughing.

When they got to Dr. Waldmann's office they saw a man with colored stripes all over his body and a head lamp that was too big for his head.

Jason leaned over to into the Matha Lisa's ear and whispered "Why does that man look so odd?"

"Because he is a doctor that teaches even and odd..." whispered the Matha Lisa.

"WHAT?!" Jason yelled. "You tricked me!"

"Sorry that I lied, but you have to learn math," the Matha Lisa said acting like she was mad at herself.

"Hello, Jason and the Matha Lisa! How can I help you?" Dr. Waldmann said in a deep voice.

"He has a horrible cough and needs a lot… I mean needs a little help with his math," the Matha Lisa replied.

Jason glared at the Matha Lisa still mad. "So will you help us?" Matha Lisa continued.

"Sure, we will start with the cough drops," answered Dr. Waldmann. Then he put the cough drops in a pattern like this:
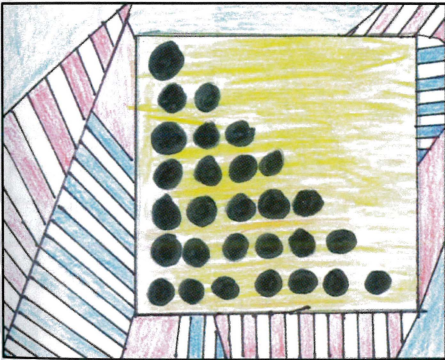
"First, you eat the first drop," said Dr. Waldmann. "Can you divide the first drop in half without cutting it?"

"No," replied Jason.

"Good!" Dr. Waldmann commented.

Jason sucked in the cough drop and was disgusted. "Do I have to eat the rest of them?" Jason asked.

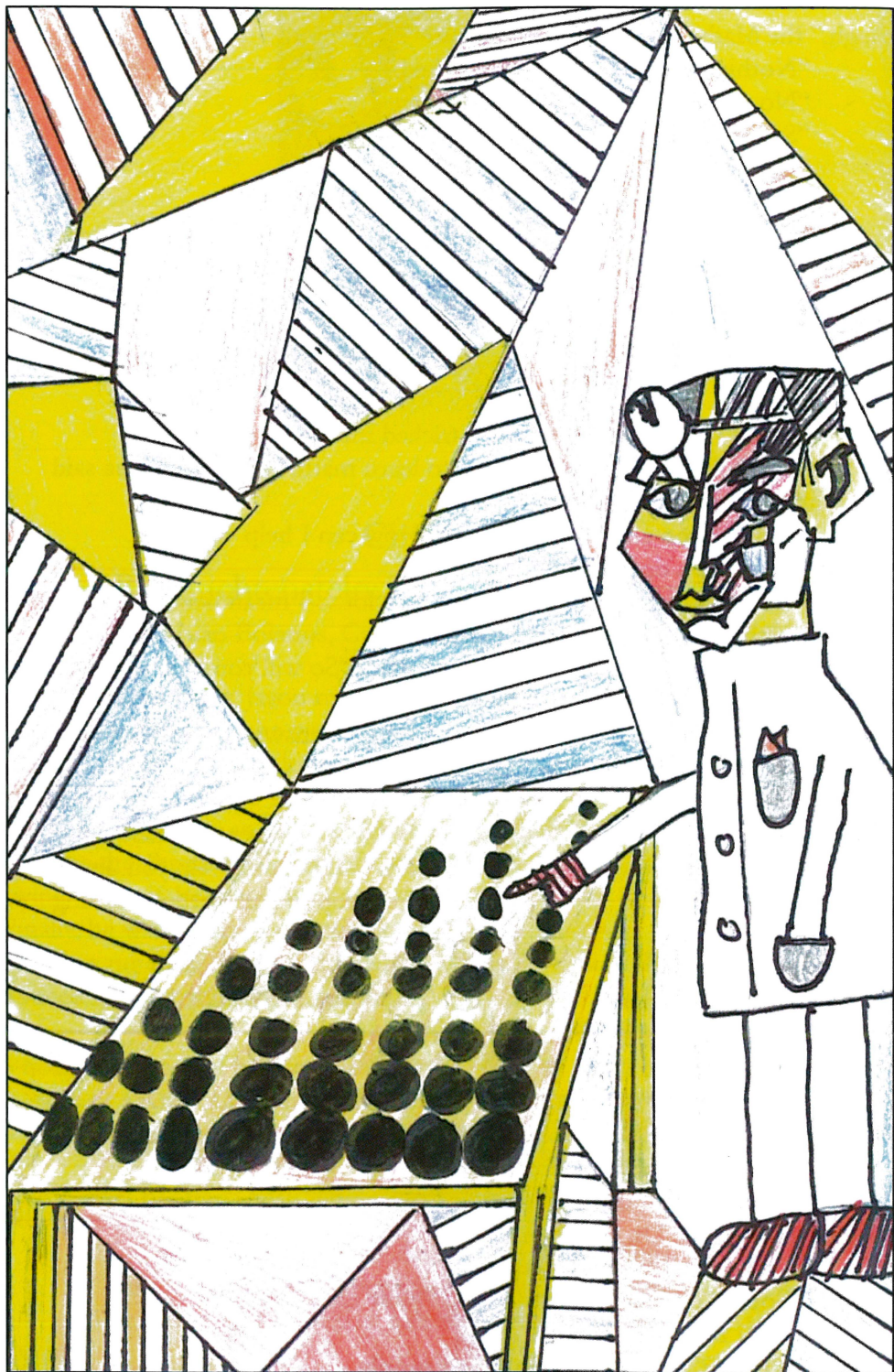"You do if you want to get better," the Matha Lisa said.

"Jason can you divide the row of two cough drops without cutting a cough drop?" asked Dr. Waldmann.

"Um… yes." answered Jason.

"Good!" replied Dr. Waldmann. "Now eat them."

" Do I have to?" whined Jason.

"WHAT?" Dr. Waldmann yelled angrily.

"Don't whine in front of Dr. Waldmann." The Matha Lisa whispered. " He gets…. mad."

"I can see that!" Jason said a little annoyed.

"Don't talk back to me if you want me to help!" Dr. Waldmann said still mad.

Grossed out, Jason shoved the cough drops in his mouth.

"That was gross…so what are you trying to teach me?" Jason asked. "You're wasting my time!"

"Excuse me, I'm trying to help you! I have not heard you cough since the first cough drop you had! Dr. Waldmann barked.

"Oh! I…" said Jason.

"THAT'S WHAT I THOUGHT!" barked Dr. Waldmann.

"So what are you trying to teach me anyway?" asked Jason getting frustrated.

"I'm teaching you even and odd. You see, you can't split one in half because it is odd; however you can split two in half because it is an even number. Odd numbers cannot be divided equally," explained Dr. Waldmann.

"What do you mean?" asked Jason.

"Here, I lined up the cough drops in pairs. All even numbers are in pairs," explained Dr. Waldmann.

"Oh, I see," announced Jason.

"Do you? The pairs are called 2n," explained Dr. Waldmann.

"2n?" questioned Jason.

"Yes. 2n are pairs of numbers that are even," explained Dr. Waldmann.

"But what if there is extra?" asked Jason.

"Well that would be 2n + 1," Dr. Waldmann answered.

"You see Jason, 2n is a pair or numbers that are even. If there is an extra, than it is called 2n+1 which makes it an odd," explained the Matha Lisa.

"Oh, I get it," cheered Jason.

"That's good Jason! Can you do your homework now?" asked the Matha Lisa.

"Yes I think I can!" Jason said, happy that he could.

"Well than this is a goodbye for…"

"Will I ever see you again!?!" Jason cried out.

"If you come back, yes," replied the Matha Lisa and with a snap of her fingers he was standing in front of Roy Lichtenstein's painting in shock. He tried to move but he couldn't. He stood there until he heard a whisper from a painting. "Do your math… genius." He guessed it was the Matha Lisa

then all went silent until all he could hear were the faint footsteps of his dad walking over to him.
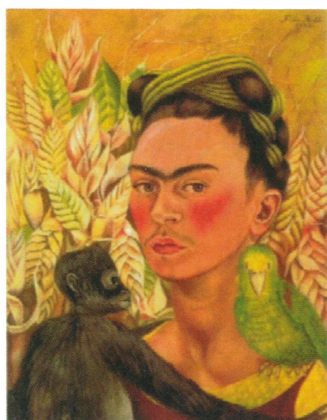
Chapter 3

Frida Kahlo: The Fundamental Theorem of Arithmetic (Factor Trees)

By Josh   Grant   and Gabrielle

"Gah! Dumb homework. Why do I have to do this factor tree Fundamental thingy anyways? I already know this!" Jason complained.

Jason stood up from an old wooden bench in one of the art galleries, and threw his homework on the cold stone floor. Jason sniffed the air. The room smelled like history and old paint.

"Jaaasooon!" A voice called out. "Jaaasooon!"

"Matha Lisa? Is that you?" Jason called out. His voice echoed through the deserted halls. "Hold on! I'm coming!" He ran through the empty halls, past the cool Roy Lichtenstein paintings, and into a new gallery where the voice seemed to be coming from. "Matha Lisa?" Jason asked when he reaches a painting where the Matha Lisa is in. Then he felt that sucking sensation again.

"Where are we going today Matha Lisa?" asked Jason.

"We are in Frida Kahlo's *Self Portrait with Monkey and Parrot* made in 1942," the Matha Lisa explains.

"You mean the weird lady with the unibrow and mustache?" Jason asked rudely.

"First of all, that's rude. Second, Frida contracted polio, so that made her right leg shorter than her left. Then she was in an accident and she got

eleven fractures in her right leg," the Matha Lisa explained.

"Oh, sorry."

"That's alright. Jason, do you know anything about factor trees, or the Fundamental Theorem of Arithmetic?" the Matha Lisa asked.

"Psh. Of course I do," Jason lied.

"Sure, then what is it?"

"Uh.... first you add.... uh.."

"Exactly, you don't know," the Matha Lisa interrupted.

"Don't tell anyone, please," Jason pleaded.

"Don't worry. I'm just a painting of course. Okay, Frida and the animals are going to teach you about factor trees and the fundamental theorem of arithmetic. FTA for short," Matha Lisa explained excitedly.

"So what do the animals do?" Jason asked impatiently.

"You'll see."

With her right hand, Frida signaled the monkey. The monkey, with his fast body, hands the bright green-yellow parrot a number. The parrot circled Jason with a number 24 in its beak and placed it on one of the patterns on the leaf. Then, with a snap, on the leaf there appeared more numbers on the bottom, which formed a factor tree. The Matha Lisa strode over to the tree while Jason lagged behind with a limping Frida. Suddenly Jason felt sorry for Frida.

"So… you contracted polio, right?" Jason asks trying to start a conversation.

"Yes," Frida replied. I've had it since I was six. Art expressed my words for me. I am very happy to help you, Jason."

Now Jason felt really guilty.

"Okay Jason," Matha Lisa announced. "Say you take the number 24." Lisa gestured to the number 24 on the leaf. "And you want to split it into prime numbers."

"What are prime numbers?" Jason questioned the Matha Lisa.

"One concept a day. I'll teach you that tomorrow," Lisa said. "Okay, so as I was saying, you want to split it into prime numbers. Well, what times six equals 24?"

"Four" Jason answered.

"Right So, let's go to four. What times what equals four?"

"Two times two."

"Yes. So then you circle the twos," Matha Lisa quickly put a hand over Jason's mouth before he could ask any questions. "Listen to me first," Matha Lisa said sternly. "You circle the two because it's a prime number. What times what equals two?"
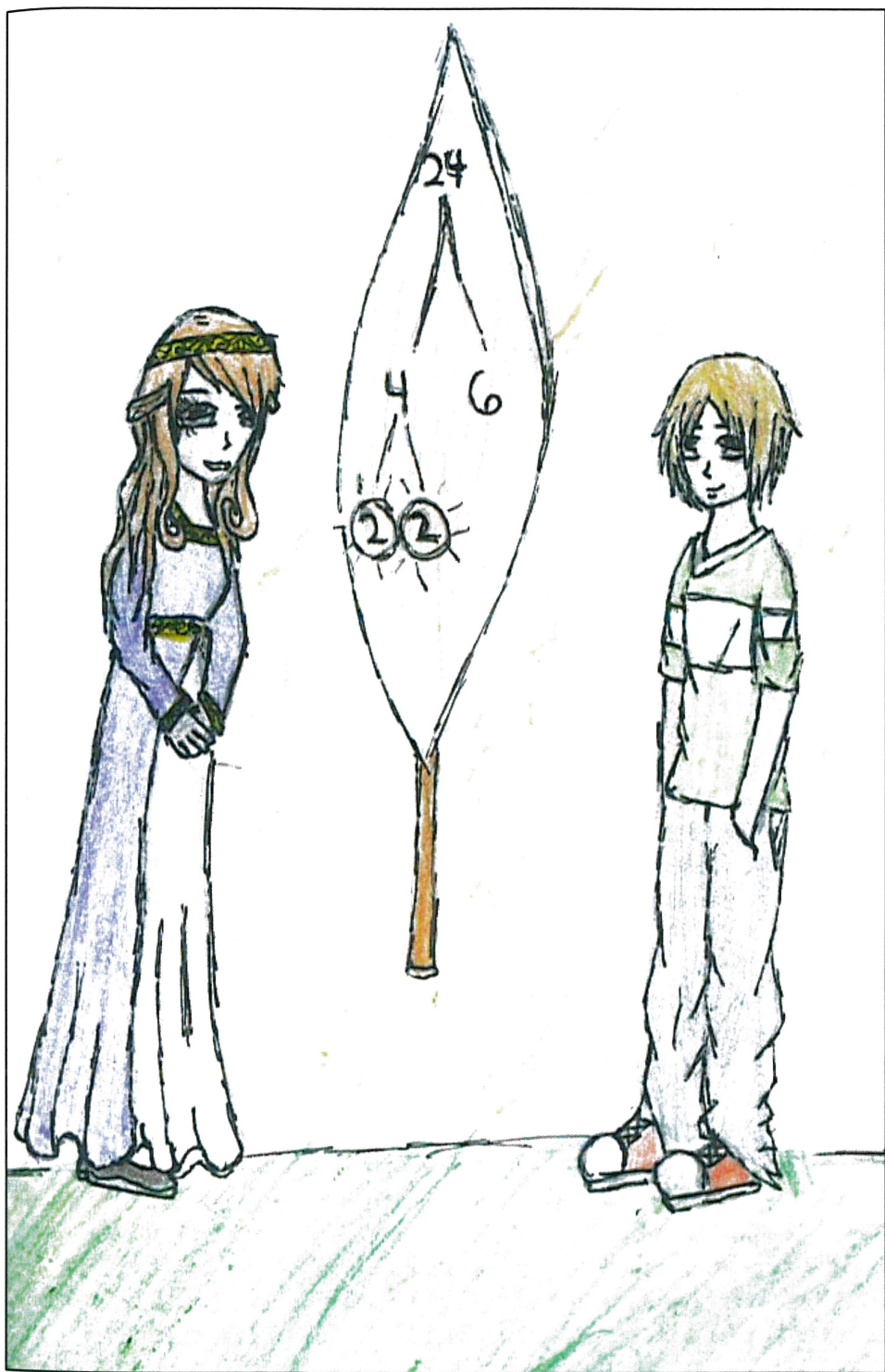
Jason thought for a moment, and said, "One times two is all I got."

"Right. So any number that can only be multiplied by one is what you circle. Got it?" Jason nodded. And while this was happening the leaf copied all the numbers down magically, and formed a halfway done factor tree. "Let's move on to six."

"You multiply three, and two, and you circle them," Jason said, like he already knew this

"Excellent, Jason!" Matha Lisa cheered. "And look! The leaf copied all of it down!" The Matha Lisa said excitedly. Jason studied the leaf and smiled. "Frida, did you do this? After all, it's your painting."

Frida just smiled, and said, "Maybe."

"Jason look at the numbers that are circled. We have three twos and one three. What do you get when you multiply all of them together?"

"24!" Jason said cheerily.

"So, that is the Fundamental Theorem of Arithmetic. Take all the prime numbers in a number and multiply them to get the same number again!" the Matha Lisa smiled wisely.

Jason twitched and uneasily said, "O-okay...you are so happy today, Matha Lisa."

"Yes. You should thank Frida." Jason looked at Frida, smiled, and kindly thanked her.

"Well then, Jason..."

"Can I leave?" Jason said.

"Not yet, Jason," Lisa said.

"You know the group of numbers that make the number twenty four? Well, that's the only one."

"Really? I don't believe you, prove it!" Jason challenged. "What if you start with 12 and 2?"

"It's the same thing. You circle the two. Four times six equals 24, two times two equals four. Circle the twos, then go to six. Three times two equals six. Then circle the two and the three," the Matha Lisa explained. And while this was happening another leaf copied all of it down.

"Told ya," the Matha Lisa said.

"Wow, you're right!" Jason said. "Okay. I still have to do homework though," Jason grimaced.

"Don't worry, Jason. You'll do fine. Thanks, Frida." And with one last wave, they got sucked out into the real world.

Jason felt a rush of air, and smelled the old, historic gallery. "Well then, I'll be off. You did great today, Jason! Have a good night."

"Wait!" cried Jason. Too late. The Matha Lisa disappeared as mysteriously as she had appeared.

Chapter 4

Faith Ringgold: Prime and Composite Numbers

By Maddie   Nicholas   and Hannah .

Jason grunted as he heaved his heavy backpack over his shoulder. "Hey, Jason, could you give me a hand?" his dad called.

"Sure Dad," Jason groaned. "Gosh! This is super heavy. I'm not as strong as a tree!"

"A tree?" his dad replied questioningly. "What are you talking about?"

"Trees, Dad, they carry so many numbers and numbers, trust me they are not light!" Jason exclaimed gesturing toward his backpack and groaning.

"What trees carry numbers, Jason?"

"Factor trees!" Jason replied excitedly. "Special ones. Frida Kahlo factor trees. You know, the ones in the paintings she draws!"

"Now you are really confusing me!"

"Frida Kahlo, Dad! She is the coolest artist ever!"

"Who the heck is this Frida Kahlid person?"

"It's Frida Kah-*lo,* and she is an artist," Jason explained.

"What?!"

"Never mind, Dad. I am going to go do my math homework," he sighed resignedly.

"Well, see you, kid." Jason's dad walked away muttering to himself. "Frida Kahlid, Frida Kahlo, Frida Kahlid, Frida Kahlo. . . ."

Jason wandered around looking for a place to do his homework. He ended up in the Frida Kahlo section, hoping that the Matha Lisa would be there waiting for him. He struggled with his homework. "Stupid primes and composites," he muttered to himself.

"Where's the Matha Lisa when you need her?" He got up and left, looking for the Matha Lisa.

"Oh, Matha Lisa!" he called out. He went to the Picasso and Lichtenstein sections too, hoping she would be there. Eventually, he found himself in the Faith Ringgold section.

"Cool!" he gasped, reading the label beside a painting. "Faith Ringgold is still alive and has a school named after her! She is an artist and works as a teacher at University of California San Diego. That is super awesome!"

"Yeah, I know, isn't it?"

Jason jumped, and looked up to see the Matha Lisa smiling at him.

"You scared me! Don't sneak up on me like that!"

"Sorry, Jason. So what do you have for homework tonight?"

"Stupid primes and composites!" he said, exasperated.

"SHHHHH! Don't say that!" she whispered.

"Why?" Jason whined.

"Dr. Philip could hear you."

"Who's he?"

"I'll show you!" she said excitedly. Jason knew what was coming next because he had done it three times before. He was starting to get used to it now, the sucking feeling as he was pulled into the picture.

"Wow!" Jason said.

He was in what appeared to be a dark black room. He could see a person surrounded by four yellow spheres, a triangle, a square, a red sphere, a book and a red arrow.

"So where are we now Matha Lisa?" he asked. "I don't recognize this place."

"We are in the *American People Series #10 Study Now 1964* by Faith Ringgold," she replied excitedly.

"Say what?"

"You know Faith Ringgold the artist? You were just in her section!" she exclaimed.

"Oh yeah!" Jason exclaimed. "That's so cool! Wait, who is that guy again?" Jason gestured toward the person surrounded by weird items.

"Dr. Phillip specializes in prime and composite numbers! Perfect isn't it?"

"Yeah but –," Jason replied.

"But what?" the Matha Lisa asked, as her smile faded.

"But prime and composite numbers are so well, *boring* and they're stupid and you never use them."
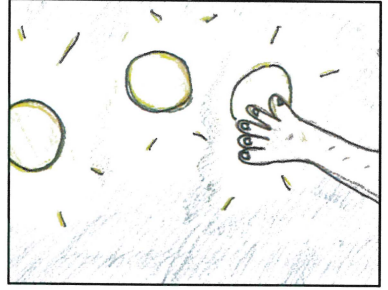
"In fact, you do," Dr. Phillip said.

"No way."

Suddenly anger filled Dr. Phillip with rage. His face turned red.

"Never insult math in front of me!" he screamed.

Then, Dr. Phillip started to get bigger and bigger.

"Let me out!" Jason yelled banging on the glass of the picture. "Now!" he shouted even louder. Dr. Phillip threw three of his yellow spheres at Jason.

Dr. Phillip was calming down now, but still screaming yelled, "How many spheres did I throw at you?"

"What?" Jason replied in a confused tone.

Finally Dr. Phillip was all calmed down and once again said, "How many spheres did I throw at you?"

"Three," Jason replied, as if Dr. Phillip was a professor.

"Yes, and is that a prime or composite number?

"Um, I don't know," said Jason.

"What factors go into three?"

"Uh, one and, uh three?"

"Anything else?" asked Dr. Phillip

"Uh, I don't kno- I mean I do know but I just don't feel like- okay I have no idea."

"Well, you're right."

"What?"

"Only one and three go into three, which means it is prime!"

"I told you," Jason said smugly.

"Don't you want to know why?" the Matha Lisa said energetically.

"I already do," replied Jason knowing this was a lie.

"Okay, well enjoy your homework." Dr. Phillip said. "The Matha Lisa will take you to your world now because you already know pri- ,"

"Wait!" Jason cried. He didn't want to be stuck with his homework clueless.

"What now? I have more important things to do other than waste my time with stuck up children," Dr. Phillip snapped reproachfully.

"Come on Jason, you can go do your easy homework in your world," the Matha Lisa sighed.

"No wait! I'm sorry! I want to learn about prime and composites! I really do, please!"

Dr. Phillip's face lit up. "Here," he called, "catch." And he threw his fourth yellow sphere over to Jason who caught it effortlessly.

"Cool," he yelled, "I stink at catching! But look what I just did!"

"Yes, I know you can do things in paintings that you can't do in real life."

"Awesome!" Jason thought this was incredible.

"How many spheres do you have Jason?" Dr. Phillip asked.

"Four!" he exclaimed.

"Is that prime or composite?"

"I don't know," he muttered.

"It's composite!" he announced.

"Why?" Jason asked. "I mean three is prime and four is composite, but how do you know which is which and what makes them that way?"

"Good question, Jason. The thing with primes and composites there are set rules on what makes them prime and composites. You see, for all prime numbers it's the same, only one and itself for factors."

"What about composites?"

"Well composite numbers have more than two factors."

"Okay I think I am getting this. The prime numbers are the numbers at the bottom of the factor trees, right? Because they can't be broken down so those are the numbers we are left with!"

"Yes Jason that is correct," the Matha Lisa said, proud of him.

"So four is composite because it has one, two and itself for factors, and three is prime because the only factors it has are one and itself.

"But what about with huge numbers like 1,769,344,626?" Jason asked frowning. "How will you be able to tell? List all the factors? That would take forever!"

"I agree. It has puzzled many mathematicians crazy for years. They are no patterns for prime numbers!"

"What?"

"But I do know that 1,769,344,626 is composite."

"How? You just said that there is no pattern for primes"

"Well remember Dr. Waldman?" the Matha Lisa cut in.

"He taught me even and odd numbers. How could I forget?"

"Even numbers always have two as a factor right?"

"Yep."

"And 1,769,344,626 is even because last digit is six which is even. So it will have two, along with another number, so it has to be composite!"

"Cool! So every even number is composite and every odd number must be prime!"

"Close."

"Can I take it from here?" the Matha Lisa asked.

"Whatever you wish," Dr Phillip answered.

"Hey Jason want to play some ball?"

"Sure!" Jason grabbed a yellow sphere and wound up for the pitch! The Matha Lisa was using her red arrow for a bat and …CRACK! The sphere that Jason pitched broke into three smaller balls which Jason caught easily.

"Is that prime or composite?" Dr. Phillip asked.

"Prime!" Jason yelled. "It is odd and only has two factors one and itself, three. He threw another pitch. CRACK! This time the ball split into thirty-nine balls.

"Whoa!" Jason cried as he not surprisingly caught all of them. "Prime," Jason said proudly.

"Nope." Dr. Phillip replied.

"What? It is odd it should be prime, right?"

"Not all odd numbers are prime. 3x13=39 which means 39 is composite."

"Oh," Jason muttered.

The next three he got right until the sixth pitch BAM! The ball ripped through the air and slit in two smaller balls. "Oh this is easy!" Jason called. "What a breeze! It's composite!"

"Wrong!" Dr. Phillip Yelled "It's prime."

"No way! You said that all even numbers are composite."

"Except for two, because two only has one and itself as factors."

"But-"

"Here let me show you." Lisa called she took the red arrow bat and conjured up six yellow spheres. "Look at these," she said.

"What about them? There is six. That's composite."

"Yes, do you want to know how to figure that out with these spheres?"

"Sure," Jason muttered knowing that his reply didn't matter.

"You make rectangles!" Dr. Phillip announced throwing his arms up. That caught Jason by surprise.

"How? Show me," he gasped.

"Look." Dr. Phillip used his arrow to pull the dots together in a line. "This is a rectangle," he said. "To see if a number is prime or composite you simply figure out how many rectangles you make without having one or more spheres left out."

"So, for 6 you can make four rectangles, you can make just a line vertical and horizontal. "But you can also make a 3 by 2 or a 2 by 3 rectangle!" Jason exclaimed.

"Yes and to tell if a number is prime, it will only have two rectangle horizontal and vertical. Others, like six, that are composite will have more,

making the number composite. Now let's try it with two. You can only make a horizontal line and-,"

"And a vertical one!" Jason interrupted. "So two is prime!"

"Correct!"

"But which prime is the biggest? And how many more composites are there than primes?" Jason asked.

"There is no biggest prime. There is an infinite number! Also, there are an infinite number of composites so there is not a larger amount of composites than primes."

"No way! If you get half the numbers composite because they are even and lots of odd numbers too, there has to be more composites than primes."

"There is an infinite amount of each, so there is no greater one," said Dr. Phillip staying calm.

"Prove it!" Jason cried.

"Okay , look over there." Dr. Phillip replied, pointing out of the picture to a hidden spot behind the frame.

It looked like paradise, luscious green trees with grass and ponds everywhere.

"Wow!" Jason gasped.

"How many blades of grass are there?" Dr. Phillip asked.

"How should I know? I can't tell where it stops!"

"Exactly! That grass is the prime numbers and there are an infinite number of primes! How many trees are there?"

"Infinite!"

"Yes, that's the composites! There is no greater number of primes or composites!"

"I get it! I am finally getting prime and composites!" Jason shouted joyfully.

Suddenly he felt very tired. He was exhausted from all the math. "You know numbers really are heavy," he thought tiredly.

"That was great! Math is so cool! Wait, did I just say that! Ew! Nerdy! Ew!" Jason exclaimed disgustedly.

"I agree Jason, math is cool," the Matha Lisa replied ignoring the last part.

Jason tried to give her a disgusted look but he was too tired to pretend. He blushed. "Huh, huh, yeah me too," yawning again sleepily.

"Oh, you must be tired," the Matha Lisa soothed.

"Yes, after all the excitement," Dr. Philip added.

Jason tried rolling his eyes but ended up yawing some more. "Ready to go?" she said grabbing his hand.

"Yeah," he said dreamily.

"Jason, you're going to love our next adventure!"

"What is it?" asked Jason

"It's..."

Just then, as Jason's dad walked into the gallery, the Matha Lisa disappeared and then reappeared at her spot beside the Mona Lisa, unseen behind the picture frame.

Chapter 5

Andy Warhol: GCF and Co-prime Numbers

By Faith   Trevor   and Besnik

Jason was wandering around the museum again. After a long day of summer school, he needed a break. His homework was frustrating, and he was tired of it. After wandering around for an hour or so, he found himself in the Warhol gallery and decided he should try his homework.

"I can't do this!" he thought to himself as he looked over the paper of confusing numbers. He stopped walking and was startled when he looked up; he saw an angry man in a painting glaring at him. Jason continued to stare at the painting, but then fell out of the daze. He walked to the bench in front of the mysterious angry man, took a seat, and started at his homework again. But he quickly looked back up at the painting.

"Creepy," he murmured. He switched his position so he was facing the opposite direction of the man who's eyes seemed to follow him wherever he went. He still felt the piercing eyes on him, so he decided to get up.

But as he started walking away, he heard a "Psst!!" behind him. He quickly turned around to see the Matha Lisa standing in the painting of a zebra next to the terrifying man.

She whispered, "Hey, come here!" Jason paused, but then started walking toward the Matha Lisa, all the while keeping his eyes on her, avoiding the man in the next painting.

Once he reached the Matha Lisa, he looked at the painting where she stood and wondered. "A multi-colored zebra? Hmm, you don't see that everyday," he thought.

He felt the familiar grasp of the Matha Lisa, once again, pulling him into the painting.

"Hey Jason, are you ready for today's lesson?" she asked.

"Yeah, but I need to finish my homework first." Jason looked at the confusing paper, but after ten minutes passed, he finally gave up in frustration and crumpled the paper.

The Matha Lisa picked the paper up and gently uncrumpled it. "Here," she said, "Let's get some help from an old friend of mine."

She took Jason by the arm and started walking. As they passed a crowd of colorful zebras, Jason noticed his surroundings were getting darker. He looked behind him to see if everything was still there, but the crowd of zebras was now a flock of flying notes. By the time he looked in front of him, he saw the creepy man not even five feet away from him, and gasped in terror. The Matha Lisa waved and he smiled back.

Jason choked, "Who-who is that?"

The Matha Lisa replied, "I'd like to introduce you to Ludwig van Beethoven. Beethoven, this is Jason. He needs assistance with his math homework."

Beethoven stood up and spoke for the first time, "Well then, let's get started."

"Wait, where are we Matha Lisa?" Jason demanded.

"Andrew Warhol's painting of 1987," replied the Matha Lisa.

"Oh well, I think I'll skip this lesson."

"Why?"

Jason whispered, "Oh, I don't think he likes me. He doesn't look that friendly."

"Oh no! That's kind of just the way he looks; don't be intimidated by that. He's very nice," she declared smiling.

Alright fine," Jason said resignedly.

Jason walked over to Beethoven, relieved to see that he was smiling and shook his hand stiffly.

"Nice to meet you Jason," Beethoven said.

The Matha Lisa walked to Beethoven's side and whispered something in his ear.

"Ah! Greatest common factors and co-prime numbers! My specialties!" Beethoven cried, cracking his knuckles readily. (The Matha Lisa must have told him about his homework). Beethoven went over to his desk and took a seat. He beckoned Jason over by slapping the seat next to him.

"Thank you," exclaimed Jason, surprised that such an angry looking man could act so nicely.

"Now then, let's see this homework of yours," Beethoven said.

Jason handed him the homework. Beethoven looked over the paper then responded, "Okay then, let's start with this; what is the GCF of 14 and 7?" Jason shrugged, confused.
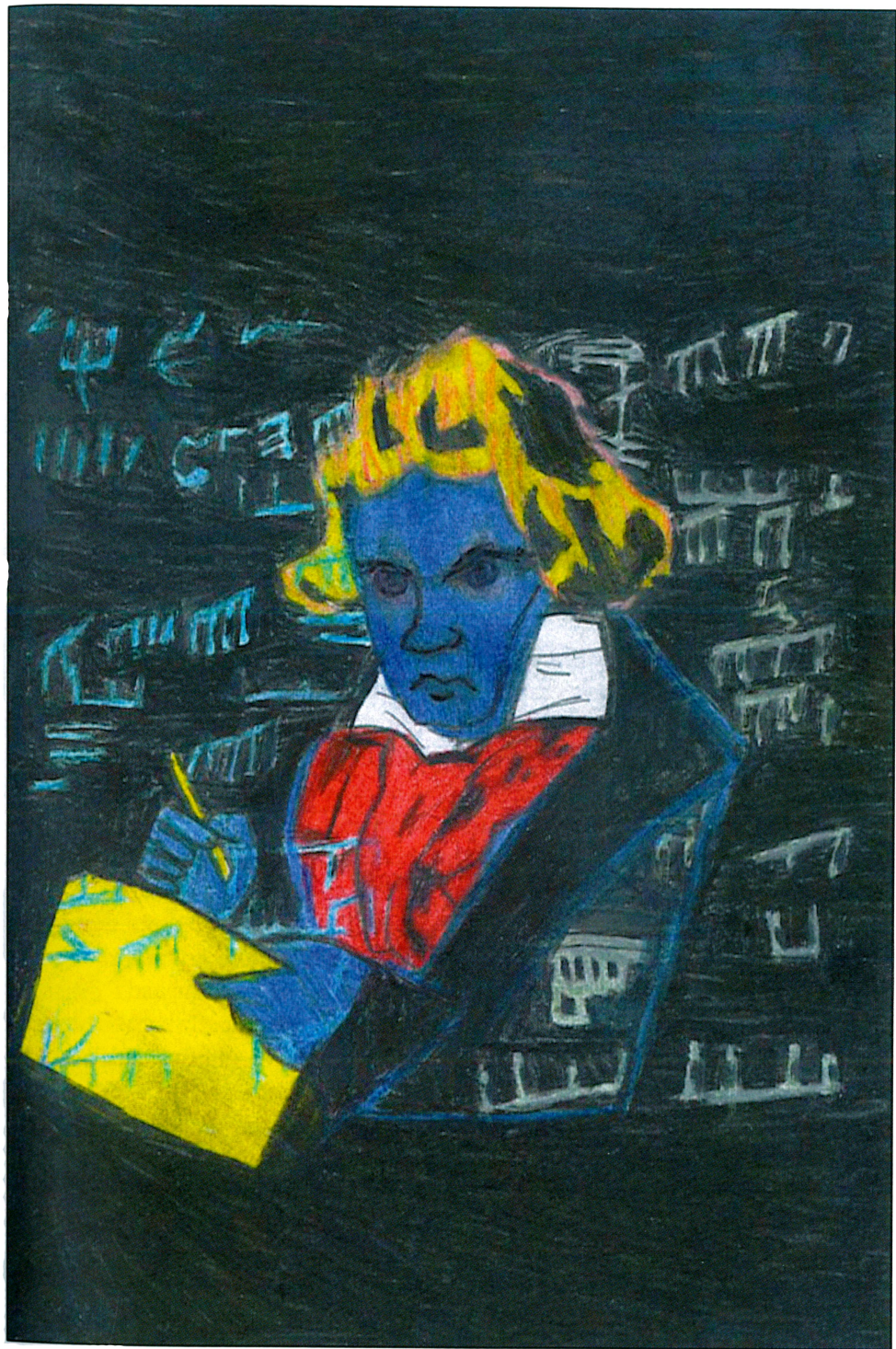
"Hmm, how about a visual aid?" asked Beethoven.

"That would probably help a little..." Jason replied.

Beethoven reached up and grabbed 21 of the flying notes and divided them into a group of seven and a group of fourteen. "Do you know how to find factors?" he asked.

"Well of course!" Jason said angrily, "Any 4th grader can do that!" He was insulted that Beethoven would think he didn't know. "Seven is prime, so its factors are only one and seven. Fourteen's composite, and its factors are 1, 2, 7, and 14."

"Very good!" Beethoven said, "That'll speed things up a bit! List them out, one above the other." Jason did as he was told. "Good, now what numbers do both lists have?"

"One and seven! That's easy!"

"And which one is the biggest?" Beethoven questioned.

"Well seven, of course!" Jason exclaimed.

"Good god! Do you know what you've just done boy?" Beethoven yelled excitedly.

"Well no, not really," Jason yelled, for he was also caught up in the moment.

"You found the GCF of 7 and 14!"

"I did? Well that was easy! Give me the next problem!"

Beethoven grouped up more notes, this time 15 and 24. "Remember, group up each factor note into lists and find the biggest one they have in common."

"Got it! Let's see…the factors of 15 are 1, 3, 5, and 15. The factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24. Well the only factors they have in common are 1 and 3, and 3 is bigger so the answer is 3!"

"Great job! Now, let's see if you can find the GCF of three numbers! How about 36, 81, and 63?"

"Okay…" Jason said, feeling a little bit nervous.

"Don't worry, I know that you can do it!" encouraged the Matha Lisa.

"Thanks," responded Jason, blushing even more, "Hmm, let's see... factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, and 36! The factors of 81 are 1, 3, 9, 27, and 81, and the factors of 63 are 1, 3, 7, 9, 21, and 63. Well they all have 1, 3, and 9 in common, and 9 is the biggest. Is 9 the answer?"

"Why yes! Yes it is! You catch on quick! How about one more problem?"

"Okay!" Jason replied excitedly.

"Find the GCF of 16, 40, and 64!"

Jason worked out the problem in his head, and after only 40 seconds, he found the answer. "Eight! Is it right?"

"Yes! You are an expert now! Should we start on co-prime numbers

now?"

"I think I'm ready Beethoven," Jason said full heartedly.

Beethoven lined up two new bars of notes, nine and thirteen. "Do the same thing as before, except this time, don't find the bigger factor," Beethoven explained.

"This one is simple! They only have one in common!"

"Good, good! That means nine and thirteen are co-prime!"

"What? I don't quite follow."

Beethoven cleared his throat and began, "Co-prime numbers, or notes in this case, are notes that have only the factor of one in common."

Jason thought about, then frowned again in confusion. Beethoven saw this reaction of his and gave one more example, "What are the factors of six and seventeen?"

Jason thought this to himself and exclaimed, "Ah I see! So if they only have the number one in common, they are co-prime?"

"That is correct," said Beethoven smiling.

"So three and four are co-prime? And six and seven?"

"Yes! Exactly!" cried Beethoven, "I think my work here is done! Good luck and good fortune Jason!"

"Wait! Is this the only time I'll get to see you?"

"Why of course not! You can always come back to look at my painting!" Beethoven said smiling. And at that, everything started to fade into reality. The notes became Andrew Warhol's painting. Beethoven became still, and the Matha Lisa was nowhere to be seen.

In a blink of an eye, before Jason could even take it in, everything was back to normal. Jason was standing in front of the multi-colored zebra painting, but strangely it looked different than what he remembered. Beethoven looked a lot happier, though he still had the same expression on. He noticed that he had his homework in his hand and did it as fast as lightning. That night, while in bed, under the covers, he drew a picture of the Matha Lisa in his summer school notebook.

Chapter 6

Claude Monet: Least Common Multiples

By Skylise   Nick   and Kiahna

The cool night air hung like mist in the deserted halls. "This is stupid," Jason thought. "How on Earth do I do my homework if I don't even know how? I mean how do you find the LCM anyway?" He had been waiting in this hall for twenty minutes, now stuck on his LCM homework, though he was too embarrassed to admit to Matha Lisa that he didn't know how.

As Jason walked the halls, he rounded the corner into the Monet aisle. Standing next to the colorful wall, was the Matha Lisa.

"Hi," he whispered excitedly. "Where are we going today?"

"I'd like for you to meet my best friend, apart from you that is," she explained smiling warmly.

"All right," he said blushing a little.

"Here we go," she said taking his hand and with that they were gone, leaving the silent museum behind them.

Soon they were walking on a field of grass that stretched the whole length of the painting.

To Jason's surprise he saw Lisa beaming at something, or someone, on the horizon.

"Camille, oh my, it's me Lisa," Lisa cried.

She dashed toward a woman with a little boy at her side. They hugged and said things like, "It's been decades."

"Camille," Lisa said in her business tone, "My friend Jason is learning math from me. Tonight he is studying least common multiples, she said, glancing at the empty paper in his hands. "Why don't you and your son show

me where the infinity flowers are? Those are always helpful when finding the LCM."

"All right, Lisa. Jean, lead the way," replied Camille confidently.

As Camille and Lisa lagged behind chatting a million miles an hour, Jean was busy answering Jason's questions. Jason had already found out he was in the painting *Woman with a Parasol* which was painted in 1875 in France by Claude Oscar Monet. Camille and Jean were his wife and son.

Then all at once Lisa let out an excited squeal. "We're here," she announced.

Short trees let off emerald leaves, and the short grass was covered with a meadow of golden yellow flowers. A stream bubbled along it creating squashy patches on the grass.

They walked over to a patch of yellow flowers.

"Zipped zapped zoo!" Camille shouted.

Suddenly the petals changed into the infinity signs and in the middle was an empty center.

"Eight, five," Camille ordered.

Sure enough the numbers eight and five appeared in middle of two flowers and other numbers appeared on the petals. Jason recognized the numbers in the first loops of the infinity flowers. They were one, two, three, four and five. The numbers in the second loop were multiples of 8 and 5. There were five infinity petals. Jason still didn't understand.

"Now," announced Lisa, "let me explain what the LCM is. It's the smallest multiple which two numbers have in common," she said. "The infinity flowers show us the multiples of five and eight. To find the LCM, we just have to find the smallest multiples of five and eight."
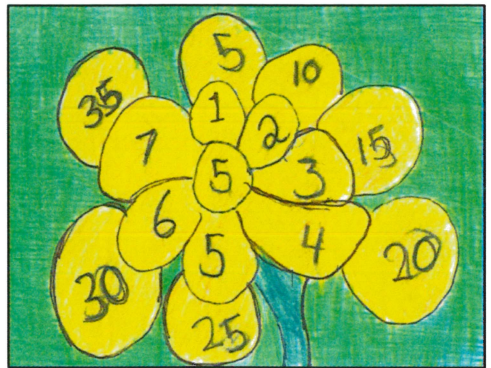
"Okay,"Jason replied deep in thought. "Multiples of eight, hmm," Jason thought.

"8, 16, 24, 32, 40, and 48.

"Multiples of five," he thought. "5 ,10, 15, 20, 25, 30 ,35, 40. . . wait, 40," Jason gasped. "Forty," Jason cried. "Its forty."

"Good job," Camile exclaimed. "Let's check." With a wave of her parasol, the things that once had once been clouds were white fluffy numbers, Jason recognized them as multiples of five and eight, one under the other, and sure enough a white puffy line slashed straight through the two forties. They floated above peacefully.

"Excellent," cheered Lisa.

"Gee thanks, Camille," cried Jason.

"You're welcome, Jason," exclaimed Camille.

"And thank you too Lisa," Jason added politely.

Lisa giggled, and Jason grinned back.

"Jason, why don't I give you one more problem, just in case." Lisa suggested

"All right," Jason sighed.

She began, "If Max goes to the park every five days and Sarah goes every six, how many days from now will they meet?"

As if on cue, the infinity flowers showed up again, but this time the numbers were six and five. On the flower with the six in the middle, Jason saw six, twelve, eighteen, twenty-four, and thirty on the surrounding petals. On the number five flower, Jason saw five, ten, fifteen, twenty, twenty-five, and thirty. "Thirty! Thirty was on both infinity flowers!" Jason yelped.

"Great job, Jason," Lisa replied looking very proud.

"Oh wait," exclaimed Camille, "you haven't met Claude yet have you?" said
Camille.

"Umm, no, I haven't," Jason replied, confused.

"Well, let's go," exclaimed Camille.

They went down the soft green meadow until they came to a small cottage with a thatched roof.

"Jason, this is my husband, Claude Monet," Camille explained, her French accent pronouncing it beautifully.

"Hello," said a gruff voice. As he emerged from his chair Jason was astounded at what he saw. There was no funny mustache or beret or mime costume; there was an elderly man with a long white beard and a thick mustache that had nothing funny about him.

" Hi, I'm Jason. I've heard all about your paintings, especially this one where Jean Monet is on his hobby horse. You rock!"

"I beg your pardon?" Mr. Monet asked, looking confused.

"Eh, ehhhm," Lisa coughed into her arm, that meant Jason was talking too modern for people in the paintings could understand.

"Oh," thought Jason, "right."

"I mean you have great talent," he corrected himself.

"Well we'd better be going," Lisa announced, "We wouldn't want Jason's father to be worried now, would we," Lisa said giving him a wink.

"Yeah," Jason agreed.

"Drop by any time," said Jean with a smile.

When they reached the meadow on the way back Lisa sat down and sighed.

"I'm going to miss this place. That parasol that was cool!" Jason exclaimed.

"Yeah me too," she added.

He sat down awkwardly next to her. The breeze had picked up a little and the infinity flowers were swaying like little kites all around them.

"Thanks," Jason breathed, "for all that you've done for me, it means a lot."

Lisa looked at him through amazed eyes. He really does care, she thought, it's not just that he wants to get good grades.

"You're welcome," she replied. She pulled him in for a tight hug. She had a friend and that was all that mattered right now. Then she remembered why they were here in the first place: to teach Jason LCM.

"Um, Jason, you do understand least common multiple, right?" she asked suddenly.

"Yeah," Jason replied, "you just have to find the smallest multiple that both numbers go into without a remainder."

"Excellent," she squealed. "I am doing my job right," she thought happily.

"Alright, we'd better get going," she sighed.

Then they walked back to the meadow where they had landed and they were sucked back though the painting.

When they got back Jason sputtered, "Well, I'd better be off." As he left he could feel her gaze on his back. It felt strangely comforting, the feeling of someone looking out for him, which was exactly what the Matha Lisa intended to do.
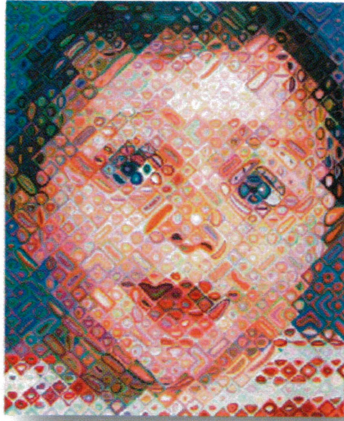
Chapter 7
Chuck Close: Squares and Square Roots
By Fiona   Tannia   and Jacob

J ason finally gave up on doing his homework. He just didn't get it. He knew what he needed, help from the Matha Lisa! He decided to go explore and look for her. After all, art always helped him calm down. While he was exploring, he got even more frustrated. Where was she? It never took her this long to come! Finally he decided to go to the gallery where the Monet painting was that he got sucked into the night before. After all, maybe she decided that he had not learned enough last night. He sat down on a bench facing the meadow painting. It really was a beautiful painting. He pulled out his sketch book and a pencil. While he was sketching, he heard quiet voices discussing something. Probably just the security guards, Jason thought to himself. But he listened any way. Maybe it was robbers! That would be exciting! Here is what he heard:

"So you think you can help him?" Jason knew that voice!

"Of course I can!" I am going to kindergarten soon even though my mom wants me to go straight to 6ᵗʰ grade!"

Jason whipped around. That was the Matha Lisa's voice! Right as he turned around, he got sucked into the painting behind him.

"Finally!" exclaimed Jason as soon as the Matha Lisa was in sight.

"What took you so long?"

"Well sorry, your majesty," replied the Matha Lisa sarcastically. I was trying to find you the best painting to teach squares and square roots in!"

"Oh, well if you put it that way..."

"It's okay, Jason. I forgive you," said the Matha Lisa.

"Thanks. So, where are we now Lisa?"

"We are in a Chuck Close painting. He was born July 5th, 1940 in Monroe, Washington."

"Cool," replied Jason. Why does the painting look so strange?"

"Because it is a 113- color Japanese woodcut. And this is baby Emma," announced the Matha Lisa loudly.

"Hi, my name is Emma Close. Chuck Close is my uncle, and I am two and a half years old," she declared proudly. "I am going to kindergarten soon, even though I'm a genius," bragged Emma.

"Wow interesting," Jason replied with a hint of doubt. Going to kindergarten at the age of two and a half? Weird, thought Jason.

"We are lucky that Emma is here to help us. Usually she is very stubborn," said the Matha Lisa.

"Hey!" exclaimed Emma. "I am not!"

"Anyway, are you ready to learn all about squares and square roots?" asked Emma sweetly. "They are my specialty!"

"I guess so," muttered Jason.

"First we will make a chart."

"With what?" asked Jason.

"My magic crayon of course!" exclaimed Emma. "I have it in my overalls," Emma said as she pulled an orange crayon out of her pocket."

"Why is it magic?" asked Jason.

"Because it can write on any surface," Emma said hurriedly. "Let's get to work on that chart."

"Okay," agreed Jason, sounding unexcited.

1	36	121	256	441
4	49	144	298	484
9	64	169	324	529
16	81	196	361	576
25	100	225	400	625

"Do you know what kind of numbers these are, Jason?" asked the Matha Lisa.

"Ummm... are they, square numbers? I have those on my homework!"

"Correct," shouted Emma before Lisa had the chance.

"Here is the definition," said Emma as she began to write something on the wall.

A perfect square is the product of a number and itself.
Example: 1 = 1x1, 64 = 8x8, 400 = 20x20...

"Okay!! I have a problem for you to solve!" declared Emma happily.
"Okay," Jason agreed. "Bring it!"

Chuck likes the number 400 but not 300. He likes 100 but not
99. He likes 3,600 but not 3,700.

Which of these numbers does Chuck like?

900? 1,200? 1,000? Or 1,100?

"Oh, that's easy. 900! Because it is a square number!" answered Jason
confidently.

"How do you know that, Jason?" asked the Matha Lisa.

"Because 30 times 30 is 900!" exclaimed Jason.

"Exactly!" yelped Emma with excitement.

"You've got it! Now let's move on to square roots."

"What is a square root?" asked Jason.

"Well, 30 is one," answered Lisa. To learn about them, we are going
to go outside."

Now all three of them were outside looking at the painting, which
was made out of squares.

"Hey! I thought we were doing square roots now!" Jason cried.

"We are," replied the Matha Lisa calmly.

"But those are perfect squares!" Jason protested.

"Yes, but square roots and perfect squares are very closely related,"
answered Lisa.

"They are?"

"Yes. You will find that out soon," answered Lisa.

"How many squares make up each side of the square of four?" asked
Emma.

"Um, two on each side?" said Jason.
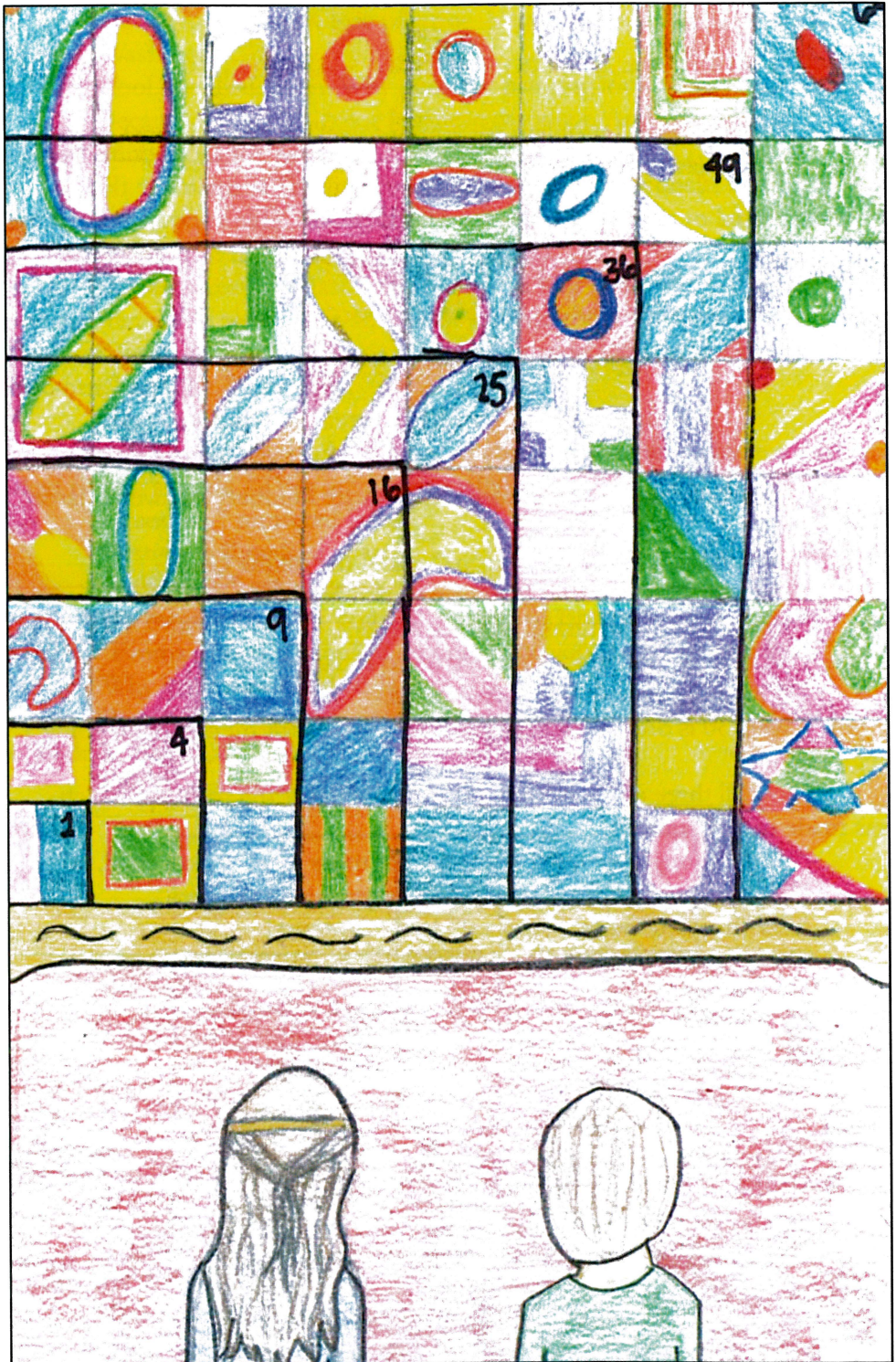
"Correct-o-moondo!" Emma giggled happily.

"Quiet Emma! The security guards will hear!" said Lisa.

"Sorry," Emma whispered with her head hung low. "I forgot we were
outside of my painting."

"So, how many sides are on each square of nine?" asked Lisa.

"Three on each."

"Yes!" Emma cried. "How many on each side of sixteen?"

"Four!" Jason exclaimed. He was beginning to remember the definition of a square root on homework. "And on 25 there is 5, and on 36 there is 6, and on 49 there is 7, and on 64 there is 8!" Jason shouted with glee. "And those are all square roots!" Jason announced proudly. "I finally understand! That stupid homework doesn't explain it right at all! Wow, you guys are the best! All of a sudden, they were back in the painting.

Emma started laughing hysterically.

"What's so funny? Did I do it wrong? Jason asked, sounding deeply concerned.

"No," Lisa giggled.

"But we didn't do a thing! You figured it all out yourself!"

"Oh," Jason replied. He paused for a moment. "Well of course! I am a math genius you know!"

"No, I am!" said Emma contently and began to suck her thumb.

The Matha Lisa and Jason started to laugh.

"Well, thanks again you guys. You really helped me...again."

"Hey, Emma hasn't spoken in a while," noted Jason. They both turned around to find Emma curled up on the floor and fast asleep.

"We must have worn her out," said Lisa.

"Oh my, look at the time. You must be going." The Matha Lisa gave Jason a quick hug and a slight push. He got that sucking feeling again and found himself back in the gallery.

As he was walking through the hallway, he thought to himself, the Matha Lisa is the best teacher I have ever had, and she is a painting. Interesting.

Chapter 8
Fernando Botero: Adding and Subtracting Integers
By Macy   and Jimmy

Jason was sitting on a bench in The Connor Franklin Rey Museum, doing his adding and subtracting integers homework.

"Ahhhhh, I don't get this!" Jason screamed angrily. "I need the Matha Lisa!" After working on his homework for seven more minutes he decided to jump in himself.

And Jason did, except he kept hitting his head. He tried again and again and again, every time hitting his head with a loud thud.

The Matha Lisa heard all the noise and went downstairs to investigate. She saw Jason banging his head against the wall.

Jason heard giggling coming from behind him. He turned around and saw Matha Lisa.

"Um, it's not what it looks like," Jason pouted.

Matha Lisa laughed even harder. "Come on, let's go," she said, half giggling.

"Adventure!" shouted Jason excitedly, as they got sucked into the painting. "Wait, where are we?"

"We're in Colombia!" Matha Lisa shouted excitedly.

"Who are these people?"

"This is the Santos family," Matha Lisa replied. 'That's Mr. and Ms. Santos, the baby boy Carlos, the little girl Lucy, the play soldier Mateo. And that's Helga."

"Nice to meet you guys," giggled Jason.

"What's so funny?" asked Ms. Santos.

"Helga," Jason giggled.

"Why are you insulting me!" Helga exclaimed, waving her fist in the air and talking with a Spanish accent. Then she ran into the Santos's house crying.

Matha Lisa pulled Jason away from the family and asked him, "Why are you being so rude? They are going to teach you math, and you are insulting them!" scolded Matha Lisa.

"I'm sorry," Jason whimpered.

"Okay, let's get down to math," Matha Lisa exclaimed.

"You better be nice to our family, or you'll be dinner," Mr. Santos explained evilly with a little bit of drool in his mouth.

"Alright time for a road trip!" exclaimed Matha Lisa.

"Where are we going?" asked Jason.

"Alaska," Matha Lisa said. "First, let's take the temperature. It's ninety-six degrees here in Colombia. Okay let's go," she said and she snapped her finger. Out of nowhere came a flying paint brush.

"That's my paint brush. It can do anything!" announced Matha Lisa and in a second it turned into a private jet. Then they're off! They arrived in Alaska fifteen minutes later. Alaska was awesome; they were on top of a huge mountain. "Let's take the temperature here. It's negative fifty-three degrees. Jason, what's the difference between the temperature in Colombia and Alaska?" asked Matha Lisa.

"Uhhhh... sixty-four degrees," Jason muttered.

"Did you just get guess or do you actually think that's right?" Matha Lisa asked.

"I guessed," Jason said shamefully.

"Alright think of a number line that goes from negative one hundred to one hundred. Start at negative fifty-three. How many spaces till you get to zero?" Matha Lisa said asked.

"Fifty-three," proclaimed Jason.

"Good!" she said excitedly. "How many spaces from zero to ninety-six?" Matha Lisa asked.

"Ninety-six!" he exclaimed.

"What's fifty-three plus ninety-six?" she asked.

"One hundred and forty-nine," he said.

"Do you kind of get what I'm saying?" asked Matha Lisa.

"Yes!" Jason said.

"Okay let's see your homework. Number one: What is negative nine plus four?"

"Five?" Jason muttered.

"Not exactly. I forgot to tell you some rules about adding and subtracting integers. A negative number that's the same as a positive number equals zero, like negative nine plus nine equal zero. Also if a negative number is greater and the positive is smaller, then the sum is going to be negative. If the positive number is greater, the answer is positive," she told him.

"Oh," Jason said amazed, "so it equals negative five!"

"Yes! What's negative five minus four?"

"One," he replied.

"No. If you have a hard time subtracting you can always slash and burn," Matha Lisa suggested.

"What's that?" He asked.

"Let's say you have a problem like negative five minus four. Slashing is when you change the minus into a plus. Burning is... if the second number is positive, it turns negative. If it's a negative it turns into a positive, and the rules for slashing and burning is it can only be used for a subtracting problem and the first number never changes," proclaimed Matha Lisa.

"So it's negative five plus negative four, which equals negative nine!" Jason announced excitedly.

Jason rode back to Colombia in the giant paint brush private jet. Then it started raining celery.

"Is that celery?" asked Jason, "Raining from the sky?"

It stopped raining celery and started raining jelly-filled doughnuts. The Santos family went crazy, catching as many doughnuts as possible. Then they started stuffing the doughnuts into their mouths, spilling the jelly all over their clothes.

"Put the doughnuts down, you know you're on a diet." They put the doughnuts down. "Now eat the celery!" Math Lisa ordered. "Doughnuts have 1,225 calories each, but celery has negative one hundred and one calories because you burn more calories eating it than it contains. What's the difference between the calories?" Matha Lisa asked.
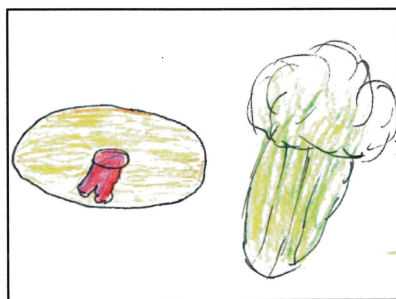
"1,225 plus negative 101 equals 1,124!" exclaimed Jason.

"Great! Here's another one. Mr. Santos weighs three hundred and ninety-six pounds. Mr. Santos snuck away and ate twelve jelly-filled doughnuts. There are three thousand and five hundred calories in a pound how much does Mr. Santos weigh now?" asked the Matha Lisa.

"One thousand one hundred and twenty-five times twelve equals uhh... two thousand four hundred and fifty plus twelve thousand two hundred and fifty equals fourteen thousand seven hundred, so Mr. Santos

now weighs about 210. Negative one hundred and one times three hundred and fifty equals five thousand and fifty plus thirty thousand one hundred equals thirty-five thousand one hundred and fifty, so Mr. Santos weighs about three hundred and ninety-five and Ms. Santos weighs about three hundred and eighty-one pounds!" he exclaimed.

Jason was done with his lesson today. He waved good-bye to the Santos family, and he gave Helga a big hug as a way of saying sorry. Jason felt a sudden tingle and he was back at the museum. Matha Lisa gave Jason a big good night hug and left.

That night, Jason dreamt he and Matha Lisa where having a picnic under a big oak tree. Then Jason's alarm clock went off.

"Grrrrrr. Time for school," Jason moaned. He got dressed and went to summer school. The teacher gave a pop quiz on adding and subtracting integers and Jason aced it.

Jason ran to the museum and showed his dad. "Jason how did you learn all this stuff?" Jason's dad asked.

"Matha Lisa taught me how," Jason exclaimed.

"Who's she? Oh she's one of your imaginary friends, huh?" asked Jason's dad.

"Um, sure Dad," said Jason.

"Okay let's go to dinner," said Jason's dad.

They went to a fancy restaurant called Blue Lobster. At Blue Lobster the waitress asked if they wanted free doughnuts. Jason said no. For dessert they went to Purpleberry. Jason and his dad went back to the museum and went to bed.

Chapter 9
Henri Matisse: Multiplying and Dividing Integers
By Sierra   and Joshua

The next evening, Jason was sitting on a blue and purple bench in the Matisse gallery. As he was working on his math homework, he was remembering the celery and jelly donuts in the Botero painting. All of a sudden he ran into a negative multiplication problem. He remembered negative addition and subtraction, but he wasn't sure what the rules for multiplication were. He skipped that problem and found a negative division problem, but he didn't know what the rules for division were either! He skipped problems until he found an addition problem.

He was working hard, when, suddenly he heard singing. The lyrics sounded something like this: "Minus times minus results a plus, the reason for this, we needn't discuss." He looked up and saw that one of the paintings had come alive. He knew the Matha Lisa must be near, because eight times before today, he had been sucked into a painting and she would teach him a new math concept. The painting was called *The Dance*. He had a hard time concentrating, so he stopped his work. Jason got up and walked over to the painting. In the middle of the painting was the Matha Lisa and some other people. They were dancing in a circle. When he looked closer, they all stopped.

"Huh," he sighed. Jason turned around and started walking back to his homework, when he felt the magical sensation of being sucked into the painting.

Jason had appeared in a large field, or, at least what he thought was a field. It was very bright, and sort of hard to see. Jason noticed a large black lump coming towards him.

"Who's there?" yelled Jason. It was silent for a moment, and then he heard someone.

"It's me Jason," coaxed the Matha Lisa. All of a sudden, Jason felt better, for he knew that the Matha Lisa was there, and had chosen this painting.

"Jason," said the Matha Lisa as she handed him sunglasses, "you should take these."

"Okay, but why?" asked Jason, as he put on the sunglasses.

"Well, Henri Matisse was advised by his doctors to wear sunglasses because his paintings were so bright. That's why we should wear sunglasses," replied the Matha Lisa. When Jason put the sunglasses on, he saw that there were people dancing.

"Umm... Lisa, they don't have any clothes on! Can we go back to Botero, please?" whined Jason.

"No," replied the Matha Lisa, "you have to stay and learn more math. Besides, these are the wrong people." The Matha Lisa led Jason to a group of different people.

"Good," Jason sighed, "these people have clothes."

"Now, Jason," said the Matha Lisa, "these people are a bit confused about how to break up into groups.

"We want to break up into five groups, but we don't know how many of us there are or how many would be in each group," said one of the dancers, "can you help us?"

"Okay," replied Jason, "I'll try." He started to count them off, "One, two, three, four. One, two, three, four. One..." He noticed that there would be four people in each group. He was about to add four five times, but the Matha Lisa stopped him.

"Four plus four, plus four, plus four, plus four, equals four times five," said the Matha Lisa, "multiplication is a short-cut for adding."

"I knew that," Jason boasted.

"Really, did you know that?" sighed the Matha Lisa.

"Well, I guess not," confessed Jason, "so four times five equals...twenty! What about dividing?"
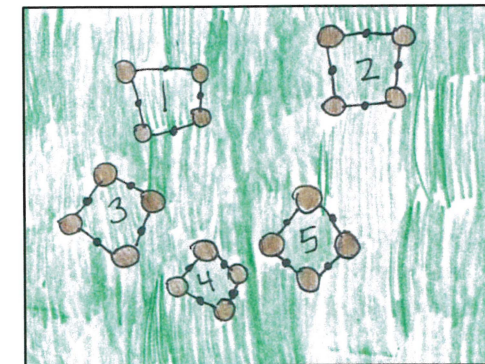
"You divided twenty people into five groups without any people left out. There were four people in each group." explained the Matha Lisa.

"Cool, but what about the negative numbers?" asked Jason. "I heard a song that went something

like this: 'Minus times minus results in a plus, the reason for this we needn't discuss.' "

"That isn't true!" complained the Matha Lisa, "The reason is that a negative number times another negative always becomes positive."

"Oh, okay," said Jason, "What about negative times positive?"

"Negative times positive equals a negative," replied the Matha Lisa, "now, each one of the dancers here is in debt of twelve dollars from the clothes that they bought. How much do they owe all together?

"Hmm," Jason thought, negative twelve times twenty equals....negative two-hundred forty!"

"Good job Jason!" exclaimed the Matha Lisa. "Division has the same rules as multiplication. So if I told you that they were in debt for one hundred sixty dollars, how much does each of them owe?"

Jason thought for a moment. "Negative one hundred sixty divided by twenty is...negative eight. So, eight dollars, right?" replied Jason.

"Correct Jason! For your reward we can go dance." cheered the Matha Lisa.

After a while Jason's feet were getting very tired. He had danced too much.

"Lisa?" asked Jason, "Can we go now? I'm getting tired of all this dancing."

"Yes, but first we must thank the dancers for helping us," replied the Matha Lisa. The Matha Lisa and Jason said goodbye to the dancers and thanked them for all their help. Afterwards, Jason knew what was about to happen. He closed his eyes and was sucked out of the painting.

"Bye, Lisa," whispered Jason. He had finished all of his homework with ease. His dad walked up shortly after he was done.

"Where were you?" he scolded.

"I was dancing in a Matisse painting and I was also learning math...I mean bathroom," Jason replied.

"Wait, dancing? Matisse? Bathroom? You need to go to sleep now, I think you're hallucinating," his dad sighed.

That night Jason dreamed he was dancing with the dancers. The Matha Lisa was with him and they were dancing under a beautiful starlit night.

Chapter 10
Mary Cassatt: Order of Operations
By Juanita   Celine   and Bryan

Jason was exhausted and to top that off, he was in a bad mood. He couldn't do his homework, even though he had been learning from the Matha Lisa for nine days now. The kids at summer school were making fun of him, and tonight the Matha Lisa was taking forever to find him.

Jason stared at his homework for a long time. He tried to work things out in his head, but he couldn't do it.

Suddenly, things became blurry, and Jason couldn't hold his eyes open for any longer. His head fell back and his eyes closed.

Then Jason's eyes snapped open and he saw the Matha Lisa hovering over him. Jason rubbed his eyes and mumbled sleepily, "Where am I?"

"We're in France young one," the Matha Lisa chuckled.

Jason yawned and said, "Give me some specifics."

"Well, we're at my Aunt Sally's house," the Matha Lisa answered. "She gets kind of cranky, so be careful. She's 126 years old. Mary Cassatt painted her in 1882," she said knowingly.

"Great," Jason sighed. "We had to come here the one day I'm not in a good mood!"

"I'm sure that you'll have a good time," the Matha Lisa cooed. "She's really nice once you get to know her."

"Whatever," Jason muttered.

"Here we are," said the Matha Lisa. "Aunt Sally? We're here," the Matha Lisa whispered.

"What? Where are you?" a sharp voice asked.

"Over here." The Matha Lisa stepped out from behind the wall. She yanked Jason out with her. He groaned. "Aunt Sally, this is my friend Jason."

"That little boy? What is he, six?" Aunt Sally barked.

The Matha Lisa grabbed Jason's arm, and he tried not to yell at Aunt Sally.

"Jason, this is my Aunt Sally. Aunt Sally, Jason is a fifth-going-on-sixth-grader," the Matha Lisa explained.

"Well, come sit down. Don't just stand there like a bunch of burglars."

The Matha Lisa pulled Jason over toward Aunt Sally, and sat him down on the chair farthest from her. Then she sat down in the chair between them.

They sat in silence for a little while, and then the Matha Lisa asked, "So Jason, what's on your math homework?"

"Oh just some stupid order thing. It's super confusing," Jason blurted.

"You mean the order of operations?" the Matha Lisa asked. "That's my favorite subject!"

"As of when?" Jason asked.

"Today!" she answered.

"Whatever," he whined, "let's just get it over with."

"Okay well, first let's talk about what the orders of operations are. If you get a math problem with a lot of different operations in it, you have to do those operations in a certain order. That order goes parentheses then exponents. Next multiplication and division. This is where it gets kind of tricky. You have to multiply and divide from left to right. Last you add and subtract. Same thing as multiplication and division, left to right. It doesn't matter which one is first," the Matha Lisa explained.

Jason could hardly hold his head up and his frustration in. "I'm getting frustrated, this doesn't make sense! I don't remember anything you've said," snapped Jason.

"Okay calm down. What will help you?"

"Well, how about some brain food?" suggested Jason.

"Why would I waste all my delicious food on him?" Aunt Sally barked.

"Fine if you don't want me here I'll just go back to Henri Matisse's *The Dance* or Botero," he yelled and stood up to leave.

"Jason, wait," cried the Matha Lisa. She grabbed Jason by the arm and she turned to Aunt Sally. "Please."

"Fine," Aunt Sally spat. "But don't take too much! What a rude, short-tempered, little boy."

The Matha Lisa led Jason into Aunt Sally's kitchen and pulled out food from random cupboards.

Jason heard his stomach grumble and said, "Man, I'm starving!"

"Well I'm glad we're at my Aunt Sally's house because you tend to get cranky when you're hungry." They carefully walked out of the kitchen to sit with Aunt Sally. Jason started shoving food down his throat. The Matha Lisa elbowed Jason.

"What was that for?" asked Jason.

The Matha Lisa gave him wide eyes and looked down at his plate.

Jason let food from his mouth drop back onto his plate. "Sorry."

Suddenly, Jason heard a low grumbling noise and then Aunt Sally let out a loud burp.

There was a short silence, and then the Matha Lisa muttered, "Please Excuse My Dear Aunt Sally."

Just as the Matha Lisa realized what she had said, they heard an arguing noise from the kitchen. Two little boys that looked younger than Jason came out into the living room complaining about something that Jason couldn't understand.

"I'm right. The answer is 126," said one of the boys.

"No you're wrong, it's 30," said the other.

"Tim, Jim," the Matha Lisa interrupted. "Please we have a guest over!"

"Oh sorry," they both apologized.

"What's the problem?" asked Aunt Sally. They both went off on a rampage of yelling and pointing.

"Boys, boys!" screamed Aunt Sally. "We can't understand you if you're yelling."

"Now, one of you can say your side of the story, then the other," explained the Matha Lisa. "Tim, you can go first."

"Okay," said Tim, "we were doing the exact same math problem."

"Which was?" asked the Matha Lisa.

"12 + 2 x 9," blurted Tim. "I got 126 and Jim got 30. Only because he did it the wrong way!"

"No I didn't," screamed Jim.

"Yes, you did," yelled Tim.

There they go again, thought Jason. *There really starting to get on my nerves.*

"Please boys, hush," Aunt Sally interrupted. "One at a time. Jim, stop interrupting. Tim, continue."

"Thank you, mom," Tim went on. "I did it from left to right, like you're supposed to. I know I'm right because I went to 1ˢᵗ grade!"

"Jim," asked the Matha Lisa, "what did you get?"

"I got 30," gloated Jim. "I know I'm right because you have to multiply first."

The boys went back to quarreling while the Matha Lisa told Jason, "Jason, these are my cousins, Tim and Jim. This is a perfect example for your homework!"

"What? How? That doesn't make any sense."

"This is why we have order of operations," said the Matha Lisa.

"What?" asked Jason

"People used to have the exact same problem as Jim and Tim. They decided there needed to be a set way of solving problems like this," the Matha Lisa explained.

"So I *am* right!" exclaimed Jim.

"Yes, you are," sighed Aunt Sally. She seemed to be getting bored.

"Ha ha! I knew it," yelled Jim.

"Wait, how does this help me with my math homework?" asked Jason.

"Please... Excuse... My... Dear ... Aunt... Sally." the Matha Lisa said it like it was obvious.

"Huh?" asked Jason.

"I beg your pardon, but what do I have to do with this?" questioned Aunt Sally.

"Please Excuse My Dear Aunt Sally. P, parentheses. E, exponents. M or D, multiplication or division from left to right. A or S, addition or subtraction from left to right. If you ever forget the order of operations, just repeat that sentence to yourself."

"Oh, I get it! Thank you so much!" exclaimed Jason.

"Of course, Jason. Now help me carry these dishes into the kitchen."

"Sure thing," replied Jason.

They walked into the kitchen and set the dishes in the sink. As Jason was getting ready to go back into the living room, the Matha Lisa grabbed his arm and said, "Jason, can we talk for a second?"

Jason's stomach did a somersault. This was the moment he'd been waiting for. He wondered if the Matha Lisa liked him the way he liked her.

"Of course. What's up?" He was trying not to seem anxious.

"Well, first of all, I want you to come up with your own sentence to remember order of operations."

"Okay," replied Jason, "Something about art."

"Hmm," the Matha Lisa thought out loud.

"Paintings," mumbled Jason. "Paintings express..."

"Good. That's good. Keep going."

"Paintings express many different…" Jason went on. "Many different… artistic styles."

"Jason, that's perfect! Good job!" cheered the Matha Lisa.

"Thanks," blushed Jason. "So, is that it? Is that all you wanted to talk about?"

"No," replied the Matha Lisa. "Here, this is for you." The Matha Lisa handed him a piece of paper folded in half. Jason unfolded the piece of paper and read:

Dear Jason,
Congratulations! You are cordially invited to a graduation that shows your improvement in math. You will be inducted into the Da Vinci Society of Art and Math. Thank you very much.
Yours truly,
Leonardo Da Vinci

"Really?" asked Jason.

"Of course," replied the Math Lisa.

"Thank you so much! Wait, how do I get there?"

"Okay, I know this is going to sound funny, but close your eyes and pull your ear three times."

Jason did so. Suddenly, he felt a soft hand on his shoulder and the world began to spin around him. There was a faint buzzing noise off in the distance. Then it grew louder and louder, until it sounded like there were a million people screaming in his ear.

"Open your eyes," said the Matha Lisa.

Jason opened them and what he saw almost knocked him off his feet. "Wow!" was all he could manage to say.

There were tons of people, all gathered around what seemed to be a stage, staring right at him.

"SURPRISE!" everyone yelled.

Jason didn't recognize anyone, but they sure knew him. He felt the Matha Lisa pat his shoulder.

Then a man started walking towards Jason and the crowd became silent. "Hello Jason," said the man. "I'm sure you're very confused, so allow me to explain. I am Leonardo Da Vinci and all these other people are the artists who painted the paintings you've visited in the past days," he went on. "We are all here to celebrate you."

"Me?" questioned Jason. "Why me?"

"Because you're the newest member of the Da Vinci Society of Math and Art," he explained. "Now, it is tradition that you go crowd surfing while wearing your official Pi medal," Leonardo said.

"Sweet!" exclaimed Jason.

Then, Leonardo placed a necklace with a gold Pi sign on it around his head and pushed him backwards. Jason was confused as to why Leonardo had just pushed him. Then he realized he was supposed to fall into the crowd, so Jason let himself finish the fall.

Jason closed his eyes and let himself be consumed by the pulling and grabbing and pushing hands.

Suddenly, Jason felt lips on his cheek and he automatically knew it was the Matha Lisa.

His eyes popped open. Then reality hit him. Jason was sitting on the bench that he had fallen asleep on. His homework was on his lap. At least he knew how to do it now.

Jason got up and he figured that the Matha Lisa would be somewhere waiting to congratulate him. So he went looking for her. Jason looked through all of the previous paintings he'd been to. She was nowhere to be found. Then, Jason realized how bad he had to go to the bathroom. So he practically ran to the restroom. When he was finished he walked over to the sink. As he begun to wash his hands, he looked up and saw that the necklace, the Pi necklace, was still around his neck.
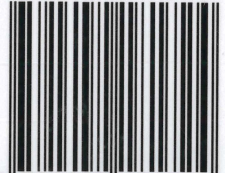
Had it been real after all?

Jason is in summer school because he failed math. Luckily for Jason, who loves art, he is also spending the summer with his dad, who is a security guard in an art museum. As he explores the galleries that summer, he meets the Mona Lisa's sister, Matha Lisa, who guides him through the museum, introducing him to famous artists and teaching him math along the way. Join Jason on his unforgettable journey, where both paintings and math seem to come alive.