

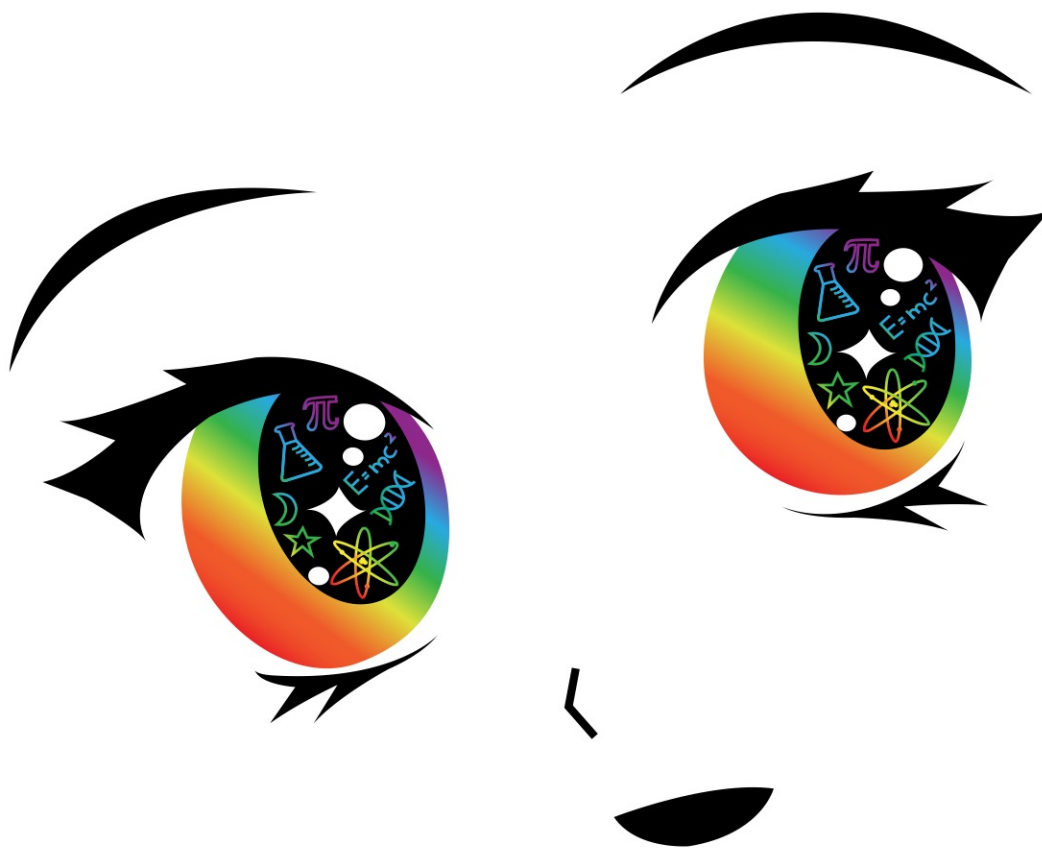


Jane's Spark Adventure!



By Kimberlyn Bailey and Jean Fan

For all children and anyone
who wants to help inspire the next
generation of STEM



Jane's Spark Adventure!

Illustrated by Kimberlyn Bailey
Written by Kimberlyn Bailey and Jean Fan
Edited by Kimberlyn Bailey and Jean Fan
Software developed by Jean Fan

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JANE



Today is the day!
What a wonderful day!
There is a great mystery
That Jane is going to solve.

Jane has noticed some people
with a twinkle in each eye.
"What is that?" Kimberlyn asks.
"It's our spark!" they reply.

A spark? A spark!
"What is this mysterious spark?"
"How do I get one?" Jane wants to know.
"And where can I find one of my own?"

But today is the day!
What a wonderful day!
Jane is going to figure out
What this "spark" is all about.



In search of such a spark,
Jane looked all over her room.
She looked in her craft corner,
at her photos, and more.

She peered at her sparkly birthday candle.
She inspected every speck of sparkly glitter.
Jane looked up and down.
Jane looked all around.

But to her disappointment
her eyes did not take on a new glow.
Perhaps this is not the same spark
as the ones in Kimberlyn's room.

But Jane is not deterred.
Jane remains determined.
Jane is going to figure out
what this "spark" is all about.



Because today is the day!
What a wonderful day!
Jane is off to new places,
to meet many new faces!

Jane has done some research.
She has asked all around.
Jane has put together a map
of sparks that have been found!

Girls from all over
who have found sparks of their own
have agreed to tell Jane more
about how their sparks were found.

So Jane packs her map and a favorite snack.
And off she goes to meet some girls
to learn more about what is a spark
and how these sparks were found.



PASSPORT





Off to discover what sparks are all about!





Jane travels to a summertime pond
where she meets Victoria peering into the water.
"I'm trying to find a spark," Kimberlyn asks.
"Would you be able to help me out?"

"Hello, Jane!" Victoria replies.
"I found a spark while watching animals grow.
Let me tell you what I know
about the spark I call my own!"

Victoria came with a net and jar in hand.
With those items, she had a marvelous plan!
She carefully scooped up wiggly tadpoles into her jar.
And watched the tadpoles grow into frogs.

Rather quickly, day after day,
A cute wiggly tail was replaced by legs.
Swimming gave way to hopping.
Victoria eagerly watched it all!

Victoria found a spark in wanting to understand
This fast-paced change that she had watched with glee!
Jane, maybe you would also enjoy watching
small creatures change as they grow!



Jane travels to a home office
where she meets Emmanuelle at a computer.
“I’m trying to find a spark,” Jane asks.
“Would you be able to help me out?”

“Hello, Jane!” Emmanuelle replies.
“I found a spark while using the computer.
Let me tell you what I know
about the spark I call my own!”

Emmanuelle clicked around on her father’s computer,
and deleted a file during one of those curious clicks.
The screen turned black and remained so.
Her father’s computer would not turn back on.

Some files were written in her language.
Others were written in a strange computer language.
Deleting one of those strange files had done the trick.
How curious her small act could cause such a stir!

Emmanuelle found a spark in wanting to understand
All that her few clicks had caused!
Jane, maybe you would also enjoy learning about
something strange you caused on a computer!



Jane travels to a basement
where she meets Dorothea at a workbench
“I’m trying to find a spark,” Jane asks.
“Would you be able to help me out?”

“Hello, Jane!” Dorothea replies.
“I found a spark by building a traffic light!
Let me tell you what I know
about the spark I call my own!”

Dorothea used pliers, a soup can, and metals
to build a tiny traffic light.
When the right connections were made,
electricity flowed through the device’s veins!

The electric flow was thoughtfully directed.
The flow had a repetitive pattern, so that
the lights looped between red, yellow and green!
That repetitive loop was so simple but complex!

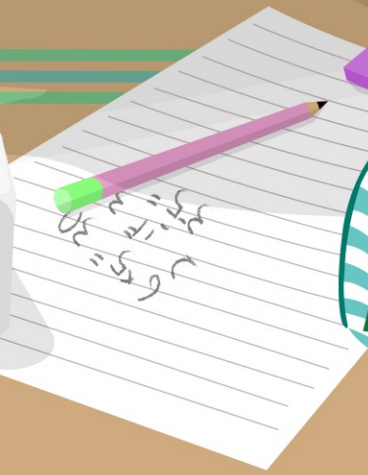
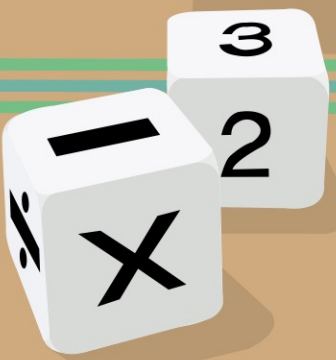
Dorothea found a spark in successfully
engineering a repeating loop of lights!
Jane, maybe you would also like to do
a simple at-home engineering project.

LASS UNS LERNEN!

Anita

Andrea

Tobias



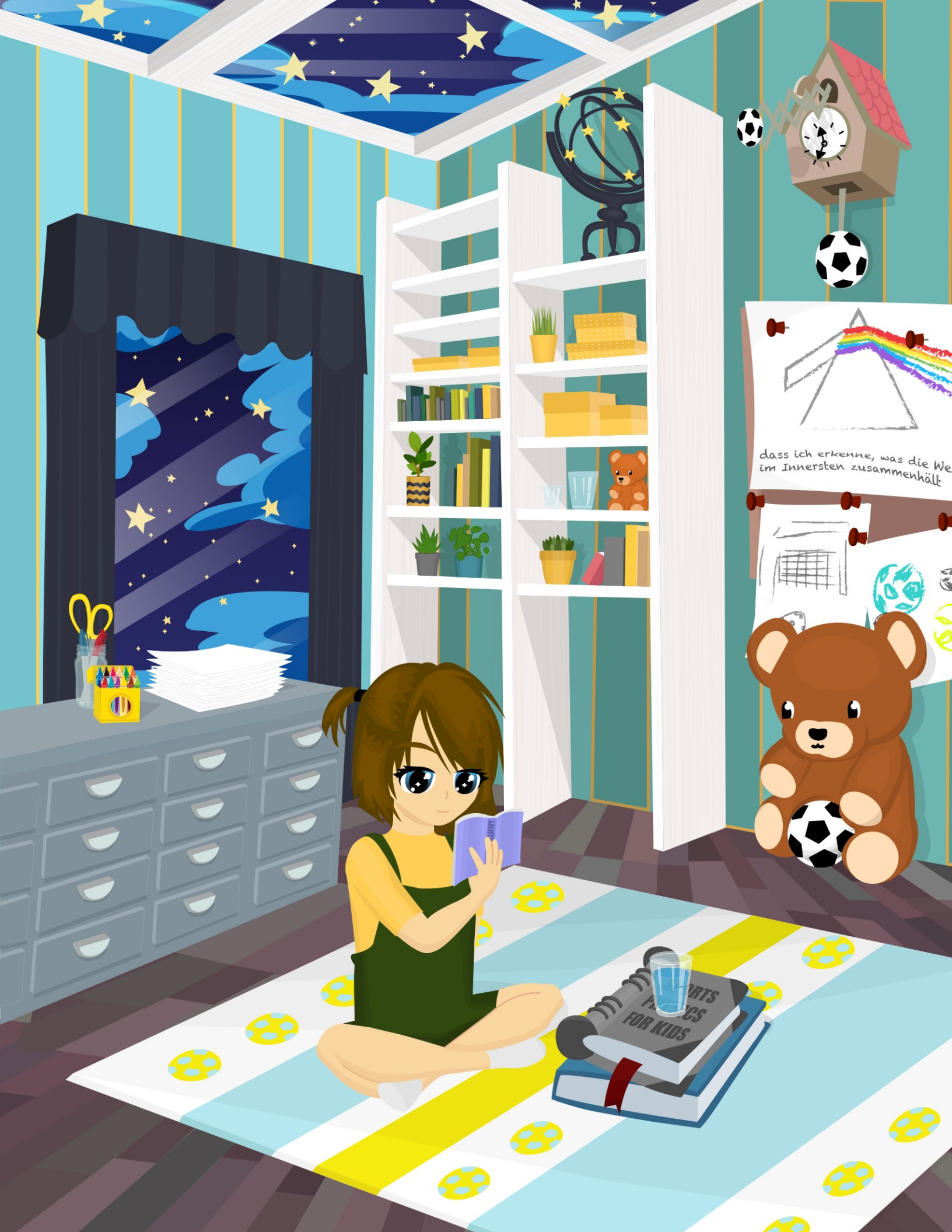
Jane travels to a classroom
where she meets Anita at a small table.
“I’m trying to find a spark,” Jane asks.
“Would you be able to help me out?”

“Hello, Jane!” Anita replies.
“I found a spark by thinking hard about simple math.
Let me tell you what I know
about the spark I call my own!”

Anita’s curiosity surpassed the lesson plan.
She was told to add, multiply and subtract
whatever numbers she got by rolling dice.
Once she got a negative number. Oh my!

At home, curiosity aglow, Anita asked her parents,
“Do numbers exist below zero?” They do!
Back at school, Anita excitedly corralled the class
to tell them about this negative numeric realm!

Anita found a spark in wanting to understand
all the peculiarities that exist in the mathematical world.
Jane, maybe you would also enjoy asking
deeper questions about simple math operations!



dass ich erkenne, was die Welt
im Innersten zusammenhält

PARTS
FOR KIDS

Jane travels to a bedroom
where she meets Sandra reading.
“I’m trying to find a spark,” Jane asks.
“Would you be able to help me out?”

“Hello, Jane!” Sandra says.
“I found a spark digging deeper into a simple answer.
Let me tell you what I know
about the spark I call my own!”

It was just a simple grade school question.
Sandra asked her teacher to explain
how a liquid could take on a blue shade.
But her teacher gave only a shallow explanation.

Sandra found that her question stayed with her,
urging her to go deeper beneath that answer.
And that curiosity was the entry point to asking
What holds the world together at its core!

Sandra found a spark in wanting to understand
the fundamental physics that explain our world!
Jane, maybe you would also like hunting
for deeper answers to simple questions.



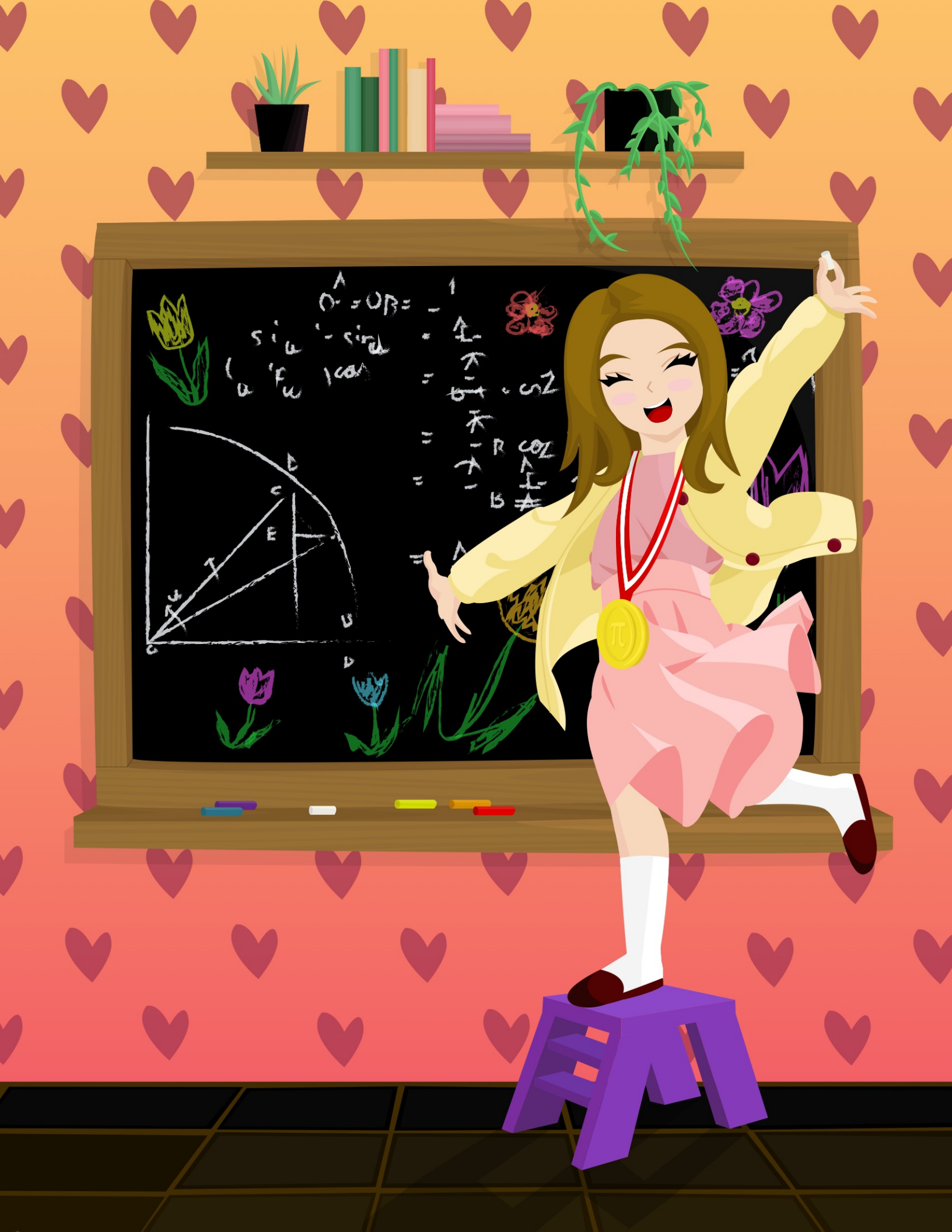
Jane travels to a cozy bedroom
where she meets Anja watching a movie.
“I’m trying to find a spark,” Jane says.
“Would you be able to help me out?”

“Hi, Jane!” Anja chirps.
“I found a spark watching a science-y film!.
Let me tell you what I know
about the spark I call my own!”

Anja grabbed a snack and turned up the sound.
She was excited to watch Outbreak.
It was a fictional film about a pandemic,
which is when disease spreads like wildfire!

Anja was entranced by what she saw.
Tiny creatures were making many people ill.
Only science could offer a way to save the day.
Scientists crafted an elixir to defeat those tiny creatures!

Anja found a spark in wanting to understand
The biology that inspired such Hollywood tales!
Jane, maybe you would also enjoy a Hollywood
film all aglow with science-y glamour.



Jane travels to a classroom
where she meets Anna at a chalkboard.
“I’m trying to find a spark,” Jane asks.
“Would you be able to help me out?”

“Hey there, Jane!” Anna replies.
“I found one competing at math problems.
Let me tell you what I know
about the spark I call my own!”

Anna’s grandparents were her biggest supporter.
They gave her math problems to solve and,
not before long, she upgraded her problem sets,
competing at a math olympiad!

Anna was delighted by what she found.
She was a warrior at crunching numbers,
and believed, as her grandparents taught her,
that math can be a wondrous adventure!

Anna found a spark in wanting to understand
How each math problem could be solved.
Jane, maybe you would also enjoy tackling
math problems as if each were an adventure!



Jane travels to a home
where she meets Caterina reading a book.
"I'm trying to find a spark," Jane asks.
"Would you be able to help me out?"

"Hello, Jane!" Caterina replies.
"I found one thinking about shapes and symmetry.
Let me tell you what I know
about the spark I call my own!"

Geometry, the study of shapes, was her favorite topic.
Caterina read plentifully about her favoured subject,
And she stared at flowers with a curious brow.
She loved to draw them from simple shape stencils.

Caterina saw simple shapes form the fabric of nature.
Some flowers are made of triangles.
Others are made of ellipses and diamonds.
Layers of simple shapes form beautiful blooms!

Caterina found a spark in wanting to understand
all the shapes she saw and the rules they follow.
Jane, maybe you would also enjoy breaking down
everything you see into simple shapes.



Jane travels to the mountains
where she meets Sarah near a peak!
"I'm trying to find a spark," Jane asks.
"Would you be able to help me out?"

"Hey, Jane!" Sarah replies cheerfully.
"I found one while exploring a volcano top.
Let me tell you what I know
about the spark I call my own!"

Sarah trekked the mountains, family in tow,
striding up and down diverse terrains.
She was delighted to find all the varied ways
nature could take form on the mountainside.

Hot, red magma was only a short walk away
from chilly, wind swept peaks.
Soft, grassy plains were surrounded by
rough rocks that could scrape a hiker's knees.

Sarah found a spark in wanting to understand
This natural variation in all that she saw.
Jane, maybe you would also like to go hiking,
and think about all the variation you see.



Jane travels to a home at mid-day
where she meets Miranda at play during tea time!
“I’m trying to find a spark,” Jane says.
“Would you be able to help me out?”

“Hello, Jane!” Miranda replies joyfully.
“I found one while playing doctor.
Let me tell you what I know
about the spark I call my own.”

Miranda gathered up her dolls.
She imagined they had injuries and diseases.
She pretended to prescribe medications,
And put on casts to fix all the aches!

Miranda was delighted by her game.
The human body was her puzzle to solve!
There was no bodily pain that she could
not cure in her patients.

Playing doctor set aflame Miranda’s interest
in medicine that would live ever so long.
Jane, maybe you would also like to
play pretend that you are caring for patients.



Jane travels to a stone-covered beach where she meets Eteri by the glittering shore. "I'm trying to find a spark, Jane says. "Would you be able to help me out?"

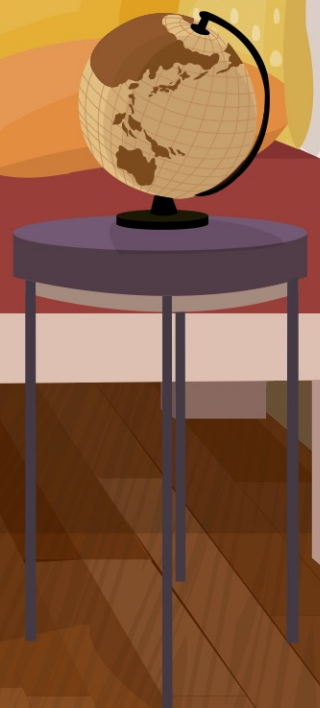
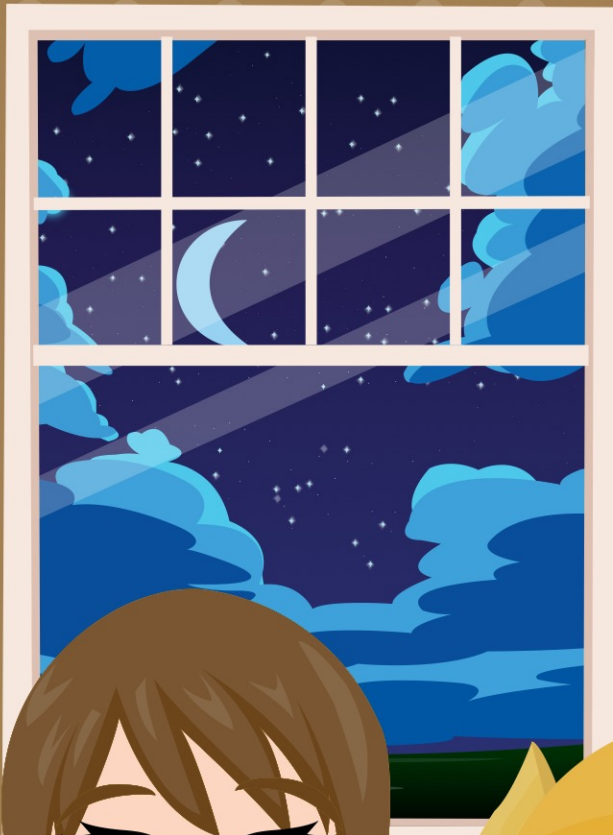
"Hey, Jane!" Eteri replies. "I found one by growing crystals. Let me tell you what I know about the spark I call my own."

Eteri followed her teacher's instructions carefully. She soaked and heated copper sulfate powder, checking it occasionally, and left it out to dry. She'd create shiny blue crystals eventually!

She was charmed by her summer break project. Simple chemistry and summer sunshine were all the ingredients she needed to create crystals as shiny and blue as the shimmery waters.

Eteri found a spark in wanting to understand This magic-like subject of chemistry. Jane, maybe you would also like to try an at-home chemistry experiment.

JANE



Jane is back from her adventure
with a luggage heavy with goodies!
She fills her shelves with these souvenirs
that she's collected from many countries!

But the bundle of global goodies,
Was not the best takeaway from the day
It's the friends, stories, and activities
that Jane has found along the way

Because today was the day!
What a wonderful day!
Jane has figured it out!
Just what this "spark" is all about.

It's the glint of curiosity
that sneaks into yours eyes,
A glimmer that makes the world seem
filled with things to analyze.



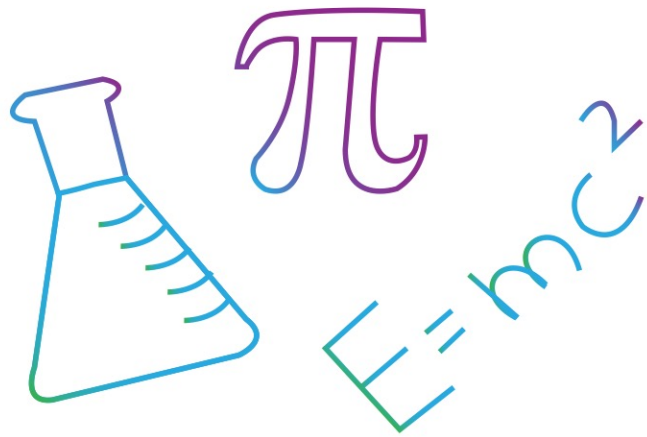
Maybe Jane will find a spark
In the activities she learned about today
Or maybe something else entirely
and that would be just as great

And maybe this spark
won't be found in a day
Because surely the greatly treasures
Are always the most hidden away

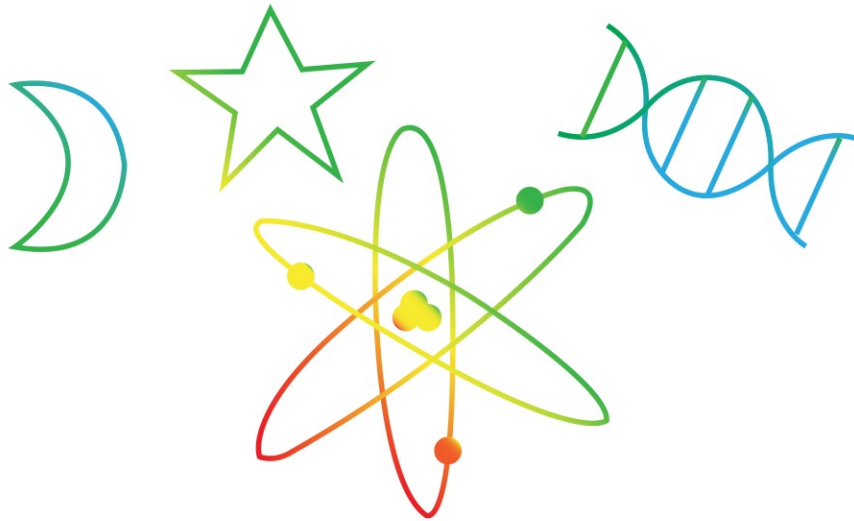
And maybe your path
towards finding this spark
will be filled with curves
and unexpected adventures

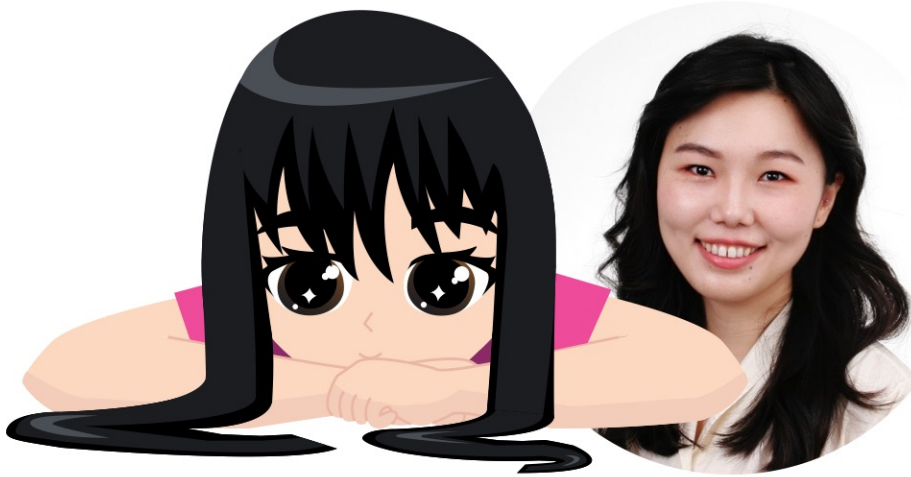
But don't fret Jane
your spark is out there
Just waiting to be discovered
Just waiting to be found

Because today is the day!
What a wonderful day!
Jane is off to new places
where her spark awaits!



Meet the real scientists!





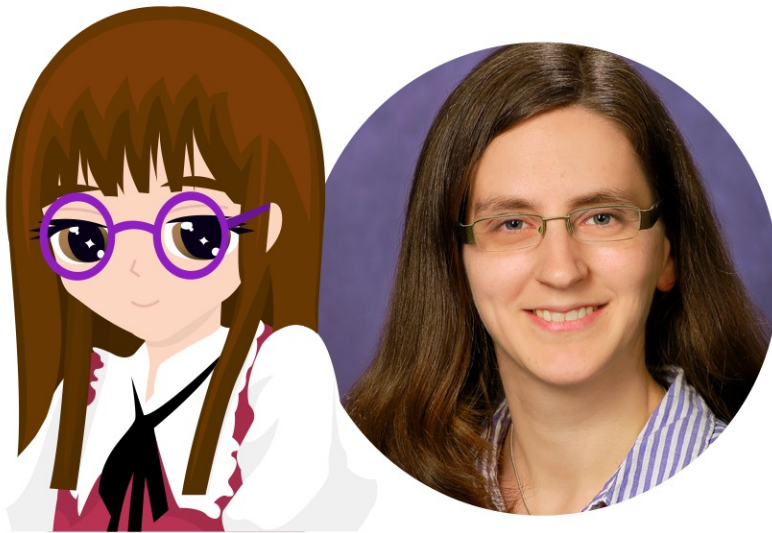
Victoria Yan

Victoria Yan grew up in Canada and China, where she spent many fun-filled hours exploring the flora and fauna of ponds! In university, she initially studied business, but soon made the passion-driven choice to switch to biology. Today, Victoria Yan studies biophysics at the Max Planck Institute for Cell Biology and Genetics, in Dresden, Germany. She researches how cells function on a microscopic scale!



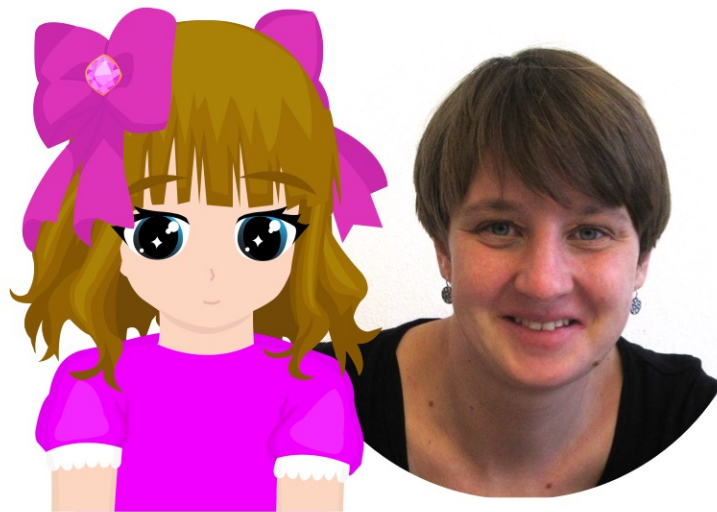
Emmanuelle Dietz

Dr. Emmanuelle Dietz grew up in Germany, where she once messed up her father's computer! She pursued her interest in computer science only much later, studying the subject in university. She continued her pursuit at the doctoral level and beyond at the Technical University of Dresden, Germany. In her research, she uses computer science to understand human reasoning.



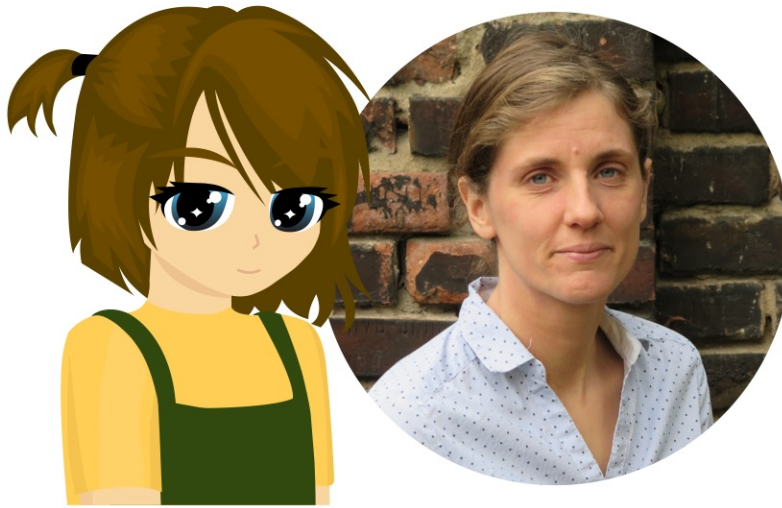
Dorothea Baumeister

Dr. Dorothea Baumeister was raised in Germany, where she built a small traffic light with her father! She is now a professor of computer science at Heinrich-Heine University in Düsseldorf, Germany, where she studies uses computer science to understand social choices, like voting.



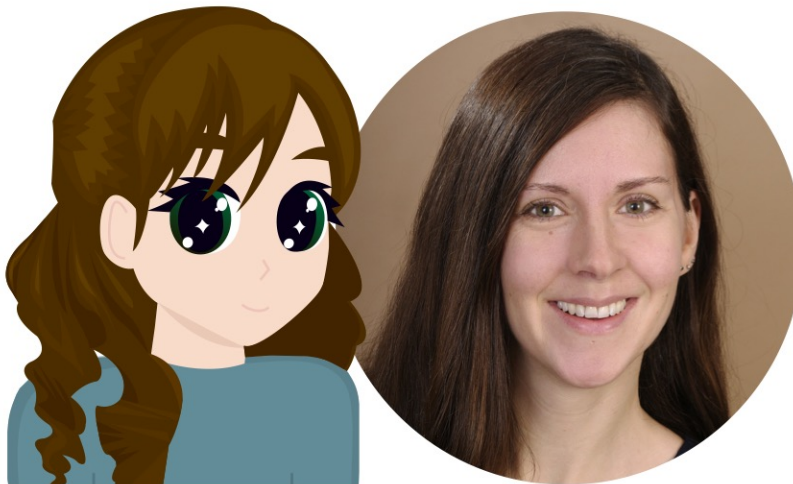
Anita Behme

Dr. Anita Behme was raised in Germany, where she once spoiled her first grade teacher's simple math lesson plan! She is now a mathematics professor at the Technical University of Dresden, Germany. She researches what patterns and properties emerge when numbers become chaotic or random.



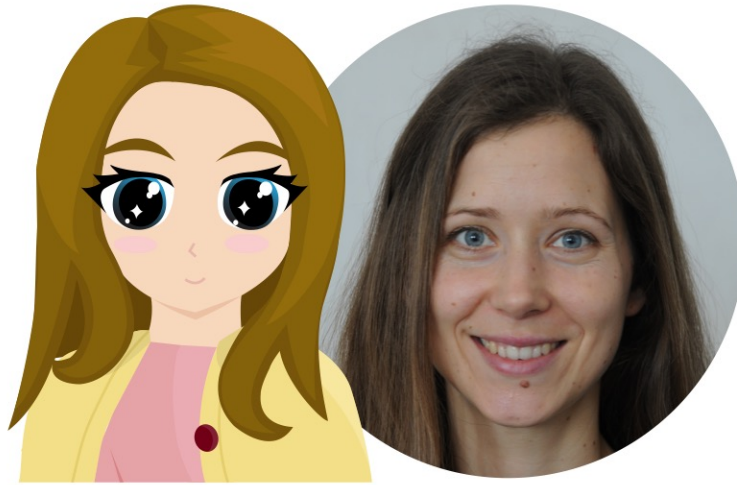
Sandra Hamann

Dr. Sandra Hamann was raised Germany, where she remembers feeling absolutely certain she wanted to pursue physics from a very young age! She went on to study chemical physics at the doctoral level and beyond and now continues her studies at the Max Planck Institute for Chemical Physics of Solids in Dresden, Germany. Her research focuses on using physics and chemistry to understand how materials can have useful properties.



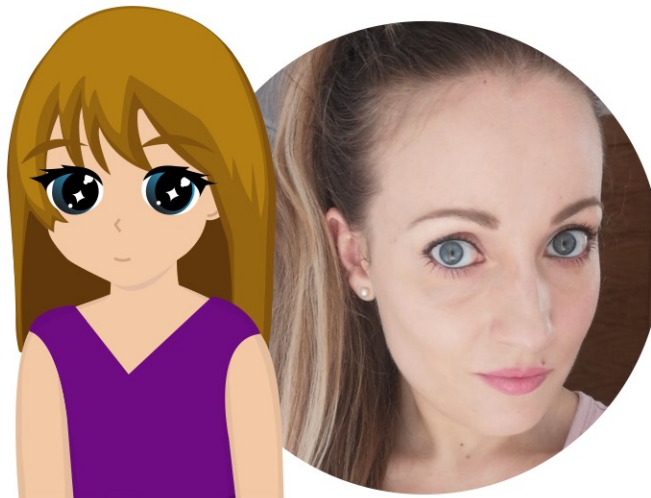
Anja Schoeps

Dr. Anja Schoeps was raised in Germany, where she once watched the American film *Outbreak* about a fictional, ebola-esque pandemic. Anja loved medicine from her teenage years onward, studied epidemiology at university and beyond. She is now a faculty member at the University of Auckland, New Zealand, where she researches maternal and child health.



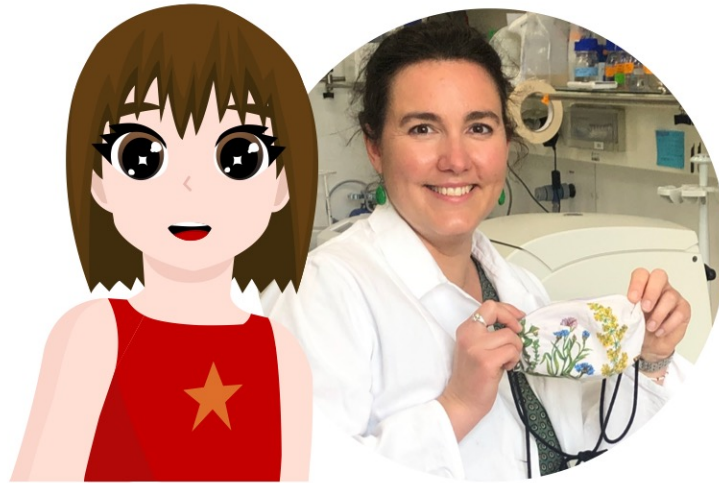
Anna Koslova

Dr. Anna Koslova was raised in the Czech Republic, where she enjoyed mathematics competitions. As she grew, her interests morphed, and she ended up pursuing biochemistry in university in beyond. She now researches viruses at the Max Planck Institute for Medical Research in Heidelberg, Germany.



Caterina Viola

Dr. Caterina Viola was raised in Italy, where she spent many hours entranced by shapes and symmetry. Caterina studied mathematics in university and beyond, worked a bit in industry for a big computer company, but ultimately circled back to mathematics — the thing she really loves! She now studies geometry at the University of Oxford, England.



Sarah Duponchel

Dr. Sarah Duponchel travelled much of the world as a kid. Though she was often based in France, she remembers fondly a family trip to the Sicilian mountains in Italy! She studied biology in university and beyond and now focuses on virology at the Max Planck Institute for Medical Research in Heidelberg, Germany.




Miranda Stattmann

Dr. Miranda Stattman was raised in a small town in Austria, where she often played doctor with her dolls. After a brief stint studying physics in university, she switched to medicine and worked as a neurologist in a clinic based in Vienna, Austria and, now, in Zurich, Switzerland.



Eteri Svanidze

Dr. Eteri Svanidze was raised in Russia, where she turned Copper Sulfate crystals into a beautiful blue crystal. Eteri studies physical chemistry in university and beyond. She now uses chemistry and physics to understand useful properties of materials at the Max Planck Institute for Chemical Physics of Solids in Dresden, Germany.

 **STEM**ized is a non-profit that creates personalized STEM-themed storybooks to help spark STEM interests and inspire the next generation of scientists.

THIS BOOK WAS MADE FOR

Jane

