

SWAY

Science My WAY



BOOK CLUB

Science Your Way, Every Day!

Junior



**BIOCHEMICAL
SOCIETY**

SCIENCE MY WAY
Sparking curiosity,
Building thinkers,
Growing future scientist.
SWAY!!!

Dear Reader,

Science My Way (SWAY) was founded on one simple belief: reading is not just a “literature” thing.

Reading should not be confined to novels or recommended texts in language classes. It is for everyone. In fact, in our everyday lives—whether consciously or unconsciously—we are constantly reading. We read signs, messages, data, instructions, and the world around us.

So if we are already reading without even realizing it, why not channel that ability into books that nourish the mind and broaden our perspective? Why not read in ways that deepen our understanding of the world and our place in it?

Too often, students approach science as a subject to pass rather than a way of life. They memorize definitions, learn formulas, and prepare for exams—yet struggle to see how those same definitions and formulas shape their daily experiences. It is common to hear the question, “What is the importance of all this?”

SWAY exists to answer that question. It helps learners discover how the scientists who came before us used those very formulas to transform the world into what it is today. Science is not just content in a textbook—it is a living, evolving story of curiosity, creativity, and impact.

A science book club creates a safe space for conversation, curiosity, imagination, and discovery. It allows learners to see science in people, in stories, in real-world problems—and in themselves.

This simplified guide was created as a starting point for anyone who desires to establish and run a book club. My hope is that through this booklet, science becomes less intimidating, more inclusive, and deeply engaging.

May your book club raise confident readers with bold curiosity and a passion for innovation.

Blessing Amuseh Joshua
jblessing199@gmail.com
SWAY Book Club



BIOCHEMICAL
SOCIETY



A GUIDE TO STARTING AND RUNNING A BOOK CLUB

WHAT IS A BOOK CLUB?

A book club is a small community of readers who meet either in person or virtually (online) to read and discuss books.

It is not a classroom, neither is it a lecture. It is more of a safe space that encourages participation, boost confidence and promotes critical thinking.

What is a Science book club?

A science book club is a community of readers who meet to discuss science themed books.

Science themed books are books that relate to concepts and people in STEM (Science, Technology, Engineering and Math) which could be fiction or non-fiction.

WHAT ARE THE AIMS OF A SCIENCE BOOK CLUB?

A Science Book club aims to:

1. Make science enjoyable
2. Build a reading culture and develop reading skills
3. Develop critical thinking
4. Expose students to more STEM careers
5. Inspire innovation

ACTIVITIES FOR A SCIENCE BOOK CLUB

The activities in a book club should not be limited to only reading, it should also involve activities like:

1. Guided discussions
2. Experiments
3. Presentations
4. Role model spotlight
5. Innovation challenge
6. Word games

The list cannot be exhausted, it could also include other creative activities that promote critical thinking in learners.

ROLE OF FACILITATORS IN A BOOK CLUB

The facilitators in a book club will be expected to do the following:

1. Encourage each member to use their words and participate in discussions
2. Ensure that book club meetings do not feel like lectures
3. Celebrate curiosity
4. Keep discussions respectful
5. Relate science concepts to real life situations
6. Encourage discretion among members, because “what happens in a book club, stays in the book club”
7. Encourage team work



A GUIDE TO STARTING AND RUNNING A BOOK CLUB

CORE PRINCIPLES OF SCIENCE MY WAY BOOK CLUB

- Curiosity over competition
- Questions over memorization
- Inclusion over intimidation
- Discussion over silence
- Growth over perfection

What a book club meeting will be, should be based on the following factors:

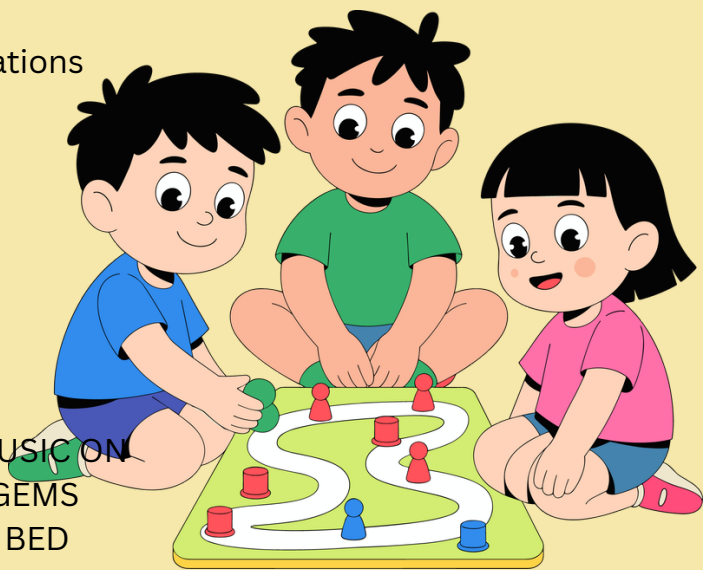
1. The age range of members
2. The theme
3. The location

PRACTICAL ACTIVITY GUIDE FOR A SCIENCE MY WAY BOOK CLUB MEETING

1. Arrival / welcoming of members
2. Reading
3. Word game
4. Discussion
5. Experiment
6. Announcement and Next reading recommendations

BOOK CLUB GAMES

1. Book talk: this or that
 - FICTION OR NONFICTION
 - PAPER BACK OR HARD COVER
 - READ OR LISTENING
 - LIBRARY OR MOVIES
 - BORROW OR BUY BOOKS
 - READ IN SILENCE OR READ WITH MUSIC ON
 - BEST SELLING BOOKS OR HIDDEN GEMS
 - READ ON COUCH OR READ ON THE BED
 - READ A BOOK OR WATCH THE MOVIE
 - SNACK WHILE READING OR READ WITHOUT SNACKS
2. Word relay
3. Word drill
4. Word pronunciation game



SWAY BOOK CLUB OUTREACH



Venue: Glorious Missions Goningora, Kaduna

Average Age: 9-12

Day 1

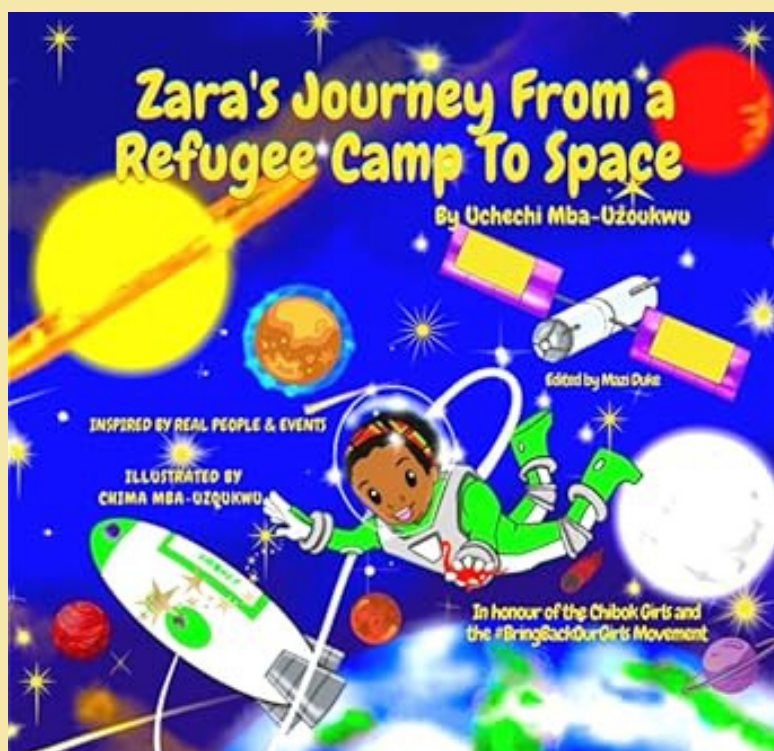
- Introduction to Book club
- Simple Warm up activity/ game to explain the concept of density and up thrust
 1. Picking an orange from a jar of water without spilling it (to explain the concept of density and up thrust)
 2. Placing an egg in fresh water and salt water
- Book reading (from “Zara’s Journey from a Refugee Camp to Space” by Uchechi Mba-Uzoukwu)
- Book Discussion
- Word relay
- Book Distribution

Day 2

- Introduction
- Warm up game
 1. Word drill
 2. Word pronunciation game (How well can you pronounce your scientific words)
- Book reading
- Book discussion
- Meet a scientist
- DNA experiment
 3. DNA extraction from fruits
 4. DNA bracelets

Zara's journey from a refugee camp to space

Uchechi Mba Uzoukwu



Gazing deeply into the awesome night sky as the moon gifted the earth its glow, 6-year old Zara Maikori smiled in satisfaction, seeing her prayers go straight to heaven with a wink from the moon.

Zara had big dreams and she never let her difficulties make her sad. She always ended her prayers with her favorite phrase- "I will be very successful one day by the grace of God!"

Zara was the first of four children born to Mr. Nasir and Mrs. Aisha Maikori. She lived with her family in an old house in Kwoi, South of Kaduna State, North of Nigeria.

Her parents were uneducated farmers who wanted the best for their children, So, they worked very hard every day to give them the best. Their best almost always fell short but Zara and her siblings resolved to be satisfied with what their parents could afford to give them.

Because Zara's parents didn't have a lot of money, they could not enroll her in school. The little money they made from farming was used to enroll her younger brother, Zakary, in school. It had to be him rather than her, because their culture puts boys' education over girls'. "But I am one year older than Zakary. Why does he get to go to school and I don't? It's not fair!", Zara cried out to her parents'.

Her dad responded, "You know, that is the way things work around here. Unfortunately, I cannot afford to enroll all of you in school. But don't worry. Things will get better. Your mother and I will afford to enroll you in school too."

Zara replied, "I know things will get better. I will be successful one day!". "Yes, you will my daughter", her dad added, slowly stroking her hair; Zara smiled, revealing her white teeth.

Zara was a hardworking and intelligent girl. She loved the night sky; the stars, moon and planets.

Every night she would go to the bonfire square to gaze at the sky, pray to God and count the stars. While there, she would admire the moon and tell stories with other kids by moonlight.

They would gather around the fire, with their little palms waving at the hissing flames. “Story, story!” said Zara as her little voice pierced through the silent night. Her friends chorused in unison. “Story”! “Story story?” Zara would repeat and her friends would respond, “Story!”

“Once upon a time!”, added Zara. “Time, time!”, her friend responded, to show they were ready for the story to begin. They usually take turns to tell stories.

Apart from her house chores, Zara was responsible for caring for her siblings while her parents were away at the farm.

Her five-year-old brother, Zakary lost the use of his leg to polio shortly after he was born. However, that did not stop Zakary from being playful. Since Zara could not go to school, her daily routine included bathing her siblings, cooking, cleaning the house and going to the stream to fetch water.

Whenever Zara saw other kids playing and going to school, it made her very sad because she really wanted to play and go to school as well.

Zara has big dreams of being great. She encouraged herself every day, especially when things got rough. She spoke to herself everyday saying, “I will be great one day!”

Zara and her brothers slept on the floor in one room because they had no bed. They also had holes in their shoes and wore tattered clothes.

Every night, Zara knelt down and prayed for her dreams to come true. She would also get regular visits from a gang of mosquitos buzzing in her ears as he prayed, “Dear God, make my dreams come true and give my family and I a better life. Please God? Amen”!

Zara woke up every day determined to be successful. She put her words into action by doing her best with her chores and everything.

One day, the sun blazed in the sky and its rays gifted the earth with warmness. The harmattan breeze serenaded the palm trees as its leaves danced in the wind. The cassava branches swung while their leaves waved to the sky.

The cocks crowed and the goats bleated in sweet accord in salute to the sky. It was indeed a bright and beautiful day in Kwoi. Zara hummed joyfully as she walked back from the stream with a pail of water on her head.

Suddenly she heard a loud sound, Bam! Bam! Bam! Instantly, the sun went down and it all went dark. The music stopped and the cool harmattan breeze suddenly became hot. Kwoi was under attack. Zara’s pail of water dropped from her head- Splaaash! As she ran for cover and hid behind a tree.

When it was safe, she raced back home to find her siblings nestled in a corner of their room, frightened.

“Thank God you came back”, Zakary said with fear in his eyes. “Where are mama and papa?” Abba asked, as they all began to cry. I don’t know where they are, Zara answered. “But, don’t worry. Everything will be okay”, she assured them, with panic lines drawn all over her face.

“We will get through this better”, she muttered under her breath. Zara was taught that the best way to keep having confidence in her dreams was to always reassure herself that they will come to pass.

At sunset, when all the noise had calmed down, they heard footsteps in the yard. Zara looked up and saw her parents. “Thank God you are back” she screamed out as she led her siblings to hug their parents in excitement.

But sadly, they noticed that papa had lost his arm. Zakary looked worried as he stared at his dad. “What happened to your arm, papa?” he asked. “I lost it as we tried to flee the attacks on our way back from the farm”, replied Mr. Nasir. The whole family said a prayer afterwards.

Help came the next day as the Kwoi people were rescued and placed in a camp for displaced people.

The heavens opened on Christmas day in form of a team of young people visiting the camp led by Barrister Chinenye.

They decided to do something memorable for the kids for Christmas to give them an experience, not just gifts like other visitors do.

Barrister Chinenye was a nice and kind-hearted lawyer who took a special liking to Zara and decided to take her and her new friends from the IDP camp to the movies. That was the first time Zara was in a car in all the six years of her life. Her excitement knew no bounds as she enjoyed her new view.

It was also Zara’s first time in a mall. She was so happy God had heard her prayers and sent help to her and her family.

Zara liked all the beautiful things she saw in the mall. At the movies, they saw the movie “Hidden Figures” in 3D. The movie was about three women; Kathrine, Dorothy and Mary who, despite the racial bias they faced, served as the brains behind one of the greatest operations in history; sending the first human to the moon.

Zara, being obsessed with astronomy, was thrilled as she watched the astronaut in space. The experience gave Zara an idea: “I will be an astronaut when I grow up”.

Touched by Zara’s excitement Barrister Chinenye replied; “I’m so glad you’re enjoying your movie experience”. “I’m glad you brought us to see this inspiring movie. I think I want to be an astronaut, I will be great one day”, Zara said excitedly.

“That’s right Zara! You sure will! I have a surprise for you” said Barrister Chinenye.

“What is it?”, asked Zara.

“Seeing the joy in your eyes, I have decided to give you a scholarship through university. If you work hard, you can become whatever you set your mind to become, including being the first female astronaut from Africa!”. Barrister Chinenye said smiling.

Zara could not contain her excitement. “Yaaaaay!, She exclaimed. “Thank you so much. I can’t believe it! My dreams are coming true!”, said Zara as she jumped in excitement. She gave Barrister Chinenye a big hug.

“Mama! Papa!” an excited Zara called-out when they got back. “I’m going to school and I will be the first female astronaut from Africa!”.

Turning to Barrister Chinenye, she said, “I promise to make you super proud!”. Barrister Chinenye nodded in approval with a big smile on her face.

Zara enrolled in school and studied day and night. She also made sure she did her chores and took care of her younger siblings after school while her parents were away. Her hard work paid off when she emerged the best student in her school.

As a result of this, Zara was selected to go on a fundraising excursion to space on a joint mission with Blue origin, NASA (National Aeronautics and Space Administration) and the National Space Research Development Agency. Dr Wendy Okolo made this possible.

This would make her the first African as well as the first little girl to go to outer space.

Zara was determined to make history. She couldn't quite believe it was happening as she waved good-bye to everyone.

She was excited for all the money raised from this mission.

After all, it was going to help Kwoi and other victims of violence in Africa. especially the children kidnapped from their school who had just returned home.

Many hours after rocket launch, Zara and crew super falcons arrived at the International Space Station which was in orbit around the earth. Zara was officially in outer space! She was dancing with the stars, circling the moon, and watching comets travel across space.

The heavens are happy. As the moons light glazed in her beaming bright eyes. Zara affirmed to herself saying, "I am on my way to great success! I am the youngest person to go to space".

"The beautiful sky is not my limit but the beginning of greater things to come!"

DISCUSSION QUESTIONS

1. In which geographical region is Kaduna located?
2. What is another name for star gazing?
3. What culture does not attach much significance to female education?
4. Zara's father said "You know that is the way things work around here". Have you heard this phrase used to any situation around you?
If yes, have you done anything to change that or would you do anything to change that?
5. What are tales by moonlight? What types of stories are told?
6. Is Zara's story similar to yours in any way?
7. If you were in Zara's situation do you think you would be contented?
8. If no, what would you have done differently?
9. What careers are related to star gazing?
10. What new words did you learn?



STEM HERO SPOTLIGHT

Wendy Okolo

April 22, 1989

Field: Aerospace Research Engineering

As a young girl growing up in Nigeria, Wendy Okolo already knew what she wanted to be. “I am going to be an engineer,” she confidently told anyone who asked. When her Primary 3 teacher said to her that engineering was for boys, Wendy almost changed her mind. Back home that day, her mum helped her keep her dream alive by assuring her that girls could be engineers. The third of four children, Wendy is an aerospace research engineer. She currently works at the United States of America National Aeronautics and Space Administration (NASA) Ames Research Center.

Besides her mum, her other family members were also supportive. She had her sister, Phyllis, who generously shared science facts with her from when Wendy was only seven years old. Little wonder that Math and Physics were two of her favorite subjects while she attended Queens College, Lagos. After secondary school, she moved to USA to attend the University of Texas, Arlington. Her dad helped her to decide between different branches of engineering. Of course, she chose Aerospace Engineering.

In the USA, Wendy was one of the few women in most of her classes. She was also the only black woman. Yet, she had a goal, so she did not let anything stand in her way. She worked hard and got good grades. After her Bachelors degree in Aerospace Engineering, she earned a PhD in the same field. In 2015, she became the first black woman to be awarded a PhD in Aerospace Engineering from the University of Texas, Arlington. She was only 26 at the time.

At NASA Ames Research Center, Wendy currently leads a team working to improve drone autonomy and ensure that spacecraft can better land on earth and other planets. Besides being an engineer, she is very passionate about helping other people, especially women and minorities, to get into STEM careers. At NASA Ames, she is also the Special Emphasis Programmes Manager for women. She regularly gives talks where she uses her experience and story to guide and inspire others.

In 2019, she won the Women in Aerospace (WIA) Award for Initiative, Inspiration and Impact. She also won the Black Engineer of the Year Award for the Most Promising Engineer in the US Government. The same year, she became the first woman to win the NASA Ames Early Career Researcher Award. Wendy is thriving in an exciting field of engineering, and her efforts are celebrated by many.

(culled from “I am a Nigerian in STEM” by Foluke Oyeleye)



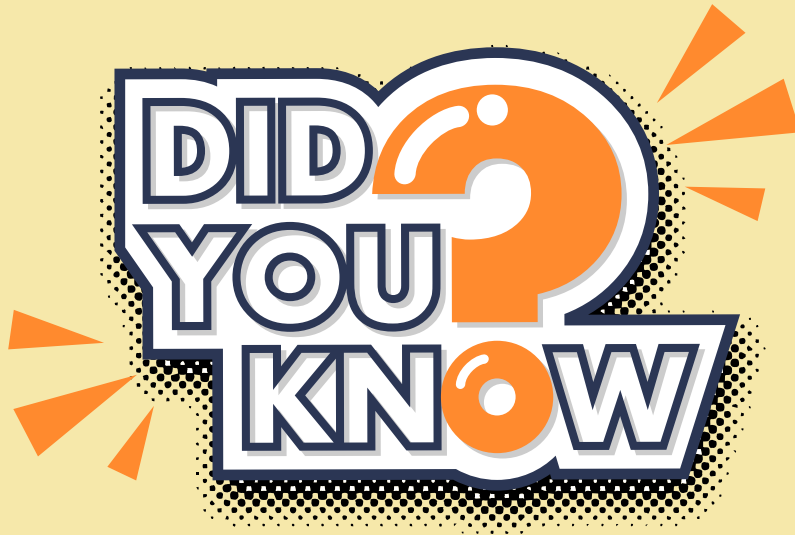
BIOCHEMICAL
SOCIETY



SOME CAREERS IN STEM

Q	W	E	R	T	Y	U	I	O	P	L	K	J	H	G	F	D	S	A
B	I	O	C	H	E	M	I	S	T	X	Z	C	V	B	N	M	T	R
L	K	J	H	G	F	D	S	A	P	A	T	H	O	L	O	G	I	S
M	O	L	E	C	U	L	A	R	B	I	O	L	O	G	I	S	T	E
Z	X	C	V	B	N	M	I	M	M	U	N	O	L	O	G	I	S	T
A	S	D	F	G	H	J	K	L	Q	W	E	R	T	Y	U	I	O	P
C	E	L	L	B	I	O	L	O	G	I	S	T	D	F	G	H	J	K
V	I	R	O	L	O	G	I	S	T	P	O	I	U	Y	T	R	E	W
N	E	U	R	O	B	I	O	L	O	G	I	S	T	A	S	D	F	G
H	J	K	L	P	R	O	T	E	O	M	I	C	S	R	E	S	E	A
T	O	X	I	C	O	L	O	G	I	S	T	Z	X	C	V	B	N	M
Q	W	E	R	T	Y	G	E	N	E	T	I	C	I	S	T	U	I	O
P	A	S	D	F	G	H	J	B	I	O	T	E	C	H	N	O	L	O
L	O	G	I	S	T	K	L	Q	W	E	R	T	Y	U	I	O	P	A
S	Y	S	T	E	M	S	B	I	O	L	O	G	I	S	T	R	S	T
R	E	G	E	N	E	R	A	T	I	V	E	M	E	D	I	C	I	N
E	P	I	G	E	N	E	T	I	C	I	S	T	Q	W	E	R	T	Y
C	L	I	N	I	C	A	L	R	E	S	E	A	R	C	H	E	R	U
B	I	O	I	N	F	O	R	M	A	T	I	C	I	A	N	P	O	I
M	I	C	R	O	B	I	O	L	O	G	I	S	T	L	K	J	H	G

Molecular Biologist, Geneticist, Microbiologist, Biochemist, Immunologist, Pathologist, Toxicologist, Biotechnologist, Cell Biologist, Bioinformatician, Clinical Researcher, Epigeneticist, Proteomics Specialist, Regenerative Medicine Scientist, Systems Biologist, Virologist, Neurobiologist.



- The sun is so big, you can fit 1 million earths into it
- The moon has no air, that is why the foot prints of astronauts can stay on it for millions of years
- There are more stars than there are grains of sand on all the beaches on earth
- An octopus has three hearts
- A giraffe has the same number of neck bones as humans, theirs are just much longer
- Babies are born with more bones than adults
- The first computer was so big, it filled an entire room
- Ice is less dense than water, that is why it floats
- A single human cell contains about 2 meters of DNA, tightly packed into its nucleus.
- Molecular biologists use tools like CRISPR to edit genes with remarkable precision.
- Virologists helped decode viruses like SARS-CoV-2 in record time, enabling rapid vaccine development.
- Bioinformaticians analyze massive genetic datasets using coding and computational tools.
- Immunologists study how your immune system remembers past infections to protect you in the future.
- Neurobiologists explore how molecular signals in brain cells influence behavior and memory.
- Regenerative medicine scientists are developing techniques to repair or replace damaged tissues using stem cells.



A CURATED READING LIST OF SCIENCE THEMED BOOKS FOR JUNIORS

1. Fantastically great women by Kate Pankhurst
2. Zara's journey from a refugee camp to space by Uchechi Mba Uzoukwu
3. Addiction by Nicole Bertram
4. My sibling and I are different and this is a golden gift by Adebola Adesina
5. Standing in the sunshine by Cari Loder
6. Crafted by Mary Akanbi
7. You must be Layla by Yassmin Abdel Magied
8. Woman of the Aero planes by B.Kojo Laing
9. Gifted hands by Ben Carson
10. One day and a night by Oluleye Animashaun
11. The hound by Phebe Veronica Jatau
12. Ngozi and her son by Olajire Olanlokun
13. Georges secret key to the universe by Lucy and Stephen Hawking
14. The way things work by David Macaulay
15. Women in Science: 50 great pioneers by Rachel Ignatofsky
16. Hidden Systems by Dan Nott
17. Bomb by Steve Sheinkin
18. The wild robot by Peter Brown
19. Onyeka and the academy of the sun by Tola Okogwu
20. Enders game by Orson Scott Card
21. Project Hail Mary by Andy Weir
22. The omnivores dilemma by Micheal Pollan
23. Noor by Nnedi Okorafor
24. Zahrah the windseeker by Nnedi Okorafor
25. The last kids on earth by Max Brallier
26. The tree lady by H. Joseph Hopkins

