

Shark Lady



The True Story of How
Eugenie Clark Became the
Ocean's Most Fearless Scientist



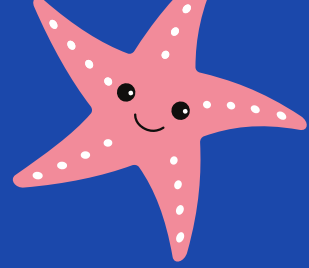


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About the Book

Eugenie Clark was a Japanese-American marine biologist who specialized in ichthyology, the study of fish. She is known for her research on shark behavior and was a pioneer in using scuba diving for research purposes. This biography tells the story of Eugenie Clark: from how she fell in love with sharks from the first moments she saw them at the aquarium, to studying zoology in college where professors told her women weren't smart enough to be scientists, to riding on the back of a whale shark and becoming the first scientist in the world to train sharks. Eugenie's dedication to her research earned her the nickname "Shark Lady," and through her discoveries and accomplishments, she taught the world that sharks are to be admired rather than feared- and that women can be anything they dream to be!



About the Author: Jess Keating

Jess Keating is a zoologist and author. She's written several books for children, including "My Life is a Zoo" trilogy and "The World of Weird Animals" series. Jess shares more animal science on her YouTube channel "Animals for Smart people."



About the Illustrator: Marta Alvarez Miguens

Marta Alvarez Miguens is a self-taught children's illustrator. She currently lives in Spain. She has worked for several Spanish and international publishers, illustration picture books and educational books.





Vocabulary

Ichthyology (n): the study of fish

Aquarium: (n) a tank of water for fish and water creatures and plants to live, or a place with a lot of aquarium tanks for people to come watch fish and sealife

Constellations: (n) a group of stars that makes a pattern in the sky

Glided: (v) to move smoothly

Laboratory: (n) a room for science experiments

Sanctuary: (n) a place for safety

Zoology: (n) the scientific study of animals

Doubt: (v) to feel uncertain or still have questions about something

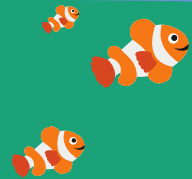
Encountered: (v) to meet someone or something

Dispelled: (v) to make disappear

Devised: (v) to think carefully and plan something



Themes



Never let the world tell you what you can and can't do.
Believe in your dreams. Only you can choose how brave
you will be.

Protect all of Earth's species, no matter how different they
may be from us

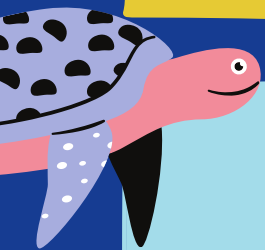




NJ State Standards



- 6.1.5.CivicsPR.1: Compare procedures for making decisions in a variety of settings including classroom, school, government, and /or society.
- 6.1.5.CivicsHR.4: Identify actions that are unfair or discriminatory, such as bullying, and propose solutions to address such actions.
- 6.1.5.CivicsCM.3: Identify the types of behaviors that promote collaboration and problem solving with others who have different perspectives.
- 6.1.2.HistoryCC.3: Make inferences about how past events, individuals, and innovations affect our current lives
- 6.1.2.HistoryUP.2: Use evidence to demonstrate how an individual's beliefs, values, and traditions may change and/or reflect more than one culture.
- 6.1.2.HistoryCC.2: Use a timeline of important events to make inferences about the "big picture" of history.

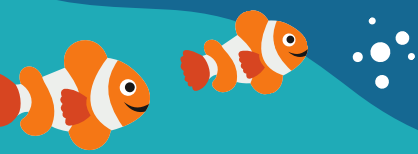


Common Core



- CCSS.ELA-LITERACY.RL.3.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- CCSS.ELA-LITERACY.RL.3.3: Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.
- CCSS.ELA-LITERACY.RL.3.6: Distinguish their own point of view from that of the narrator or those of the characters.
- CCSS.ELA-LITERACY.RI.3.4: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- CCSS.ELA-LITERACY.RI.3.7: Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).





Eugenie Clark

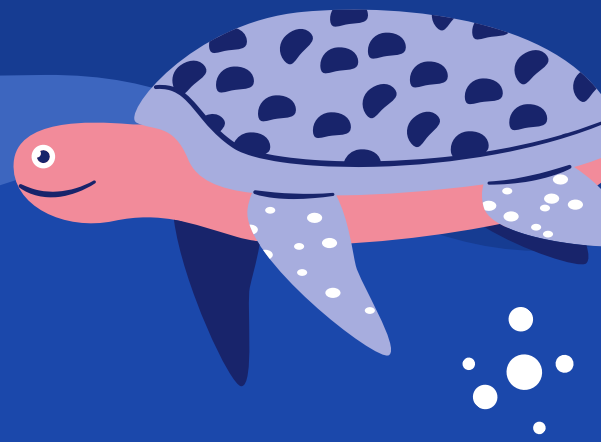
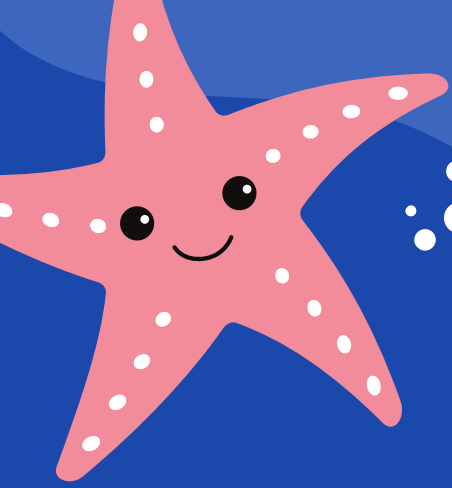
Background Info

Clark was born in New York City on May 4, 1922, to Charles and Yumi Clark. Charles was a Pennsylvania native. Yumi had immigrated from Japan in 1907, at the age of 10. Charles Clark died shortly after Eugenie's birth. The 1930 census reports the young Eugenie and her mother living in Queens with Yumi's younger brother Walter Mitomi, an architectural draftsman, and his mother Yumiko Nagahara.

The young Eugenie (known as "Genie") grew up in New York. In her early years she spent a good deal of time with her grandmother at the beach in Atlantic City, New Jersey, where she learned to swim.

Clark attributes part of her interest in the ocean to her Japanese ancestry and cultural background, in which the sea plays a large part.

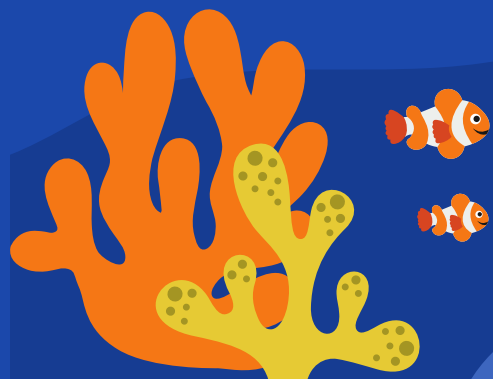
Eugenie Clark was the only Japanese student during her K-12 school years. She encountered prejudice during her school days, when her Japanese ancestry made her stand out from her school classmates. As she later recalled, "I'm half-Japanese, and in those days, people didn't understand the Japanese – they thought we were the mysterious people of opium dens and long fingernails." A drawing of hers was vandalized with the word "Jap" scrawled over it. Clark responded by being outrageous: when other children would ask about the sheets of black seaweed she would bring for lunch, she would say, "I'm eating carbon paper."



BEFORE READING

Shark Lady

QUESTIONS



Before Reading Questions



Activate Prior Knowledge: What do you know about sharks? What questions do you have about sharks? Create a KWL chart to record thoughts and questions.



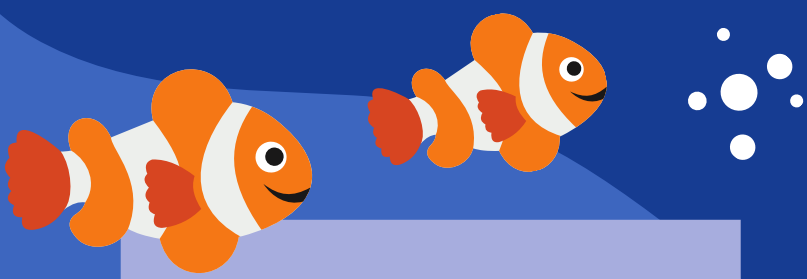
Connect to the Text: How do you feel about sharks? Do you like them/ not like them? Are they scary? Fascinating?



Read the Title Aloud: What do you notice on the cover? How does the person on the cover feel about sharks? How can you tell?



Why do you think they call her the most fearless scientist? Would you want to get that close to a shark?

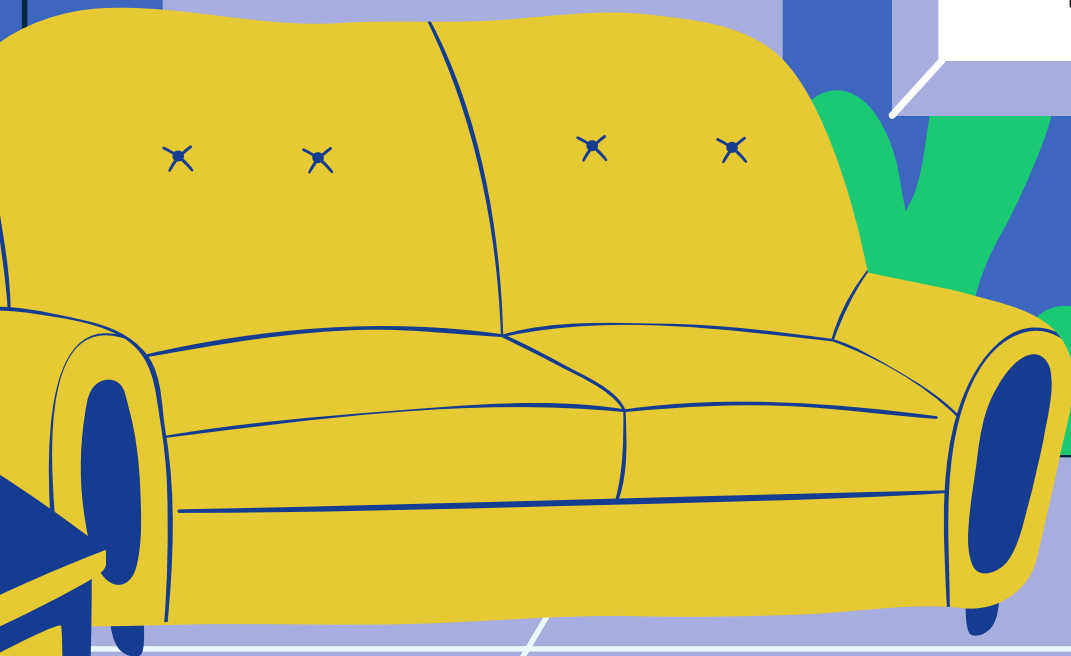


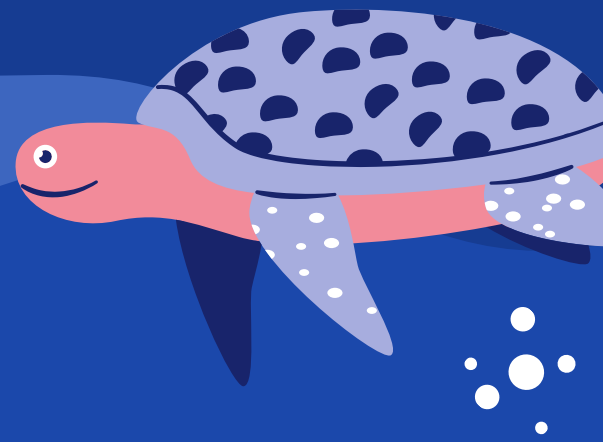
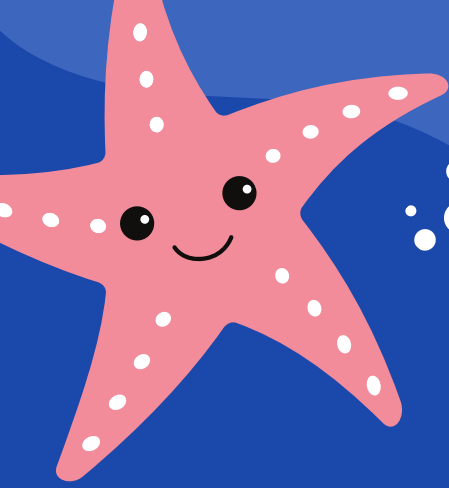
Before Reading...

Before beginning, tell students this book is a **biography**. A **biography** is a book about a real person's life. This biography is about Eugenie Clark, a famous ichthyologist, or a scientist who studies fish.

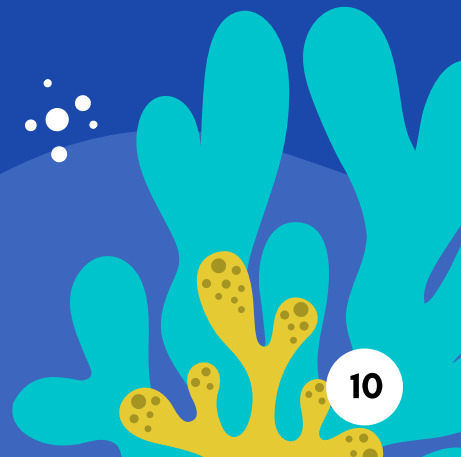
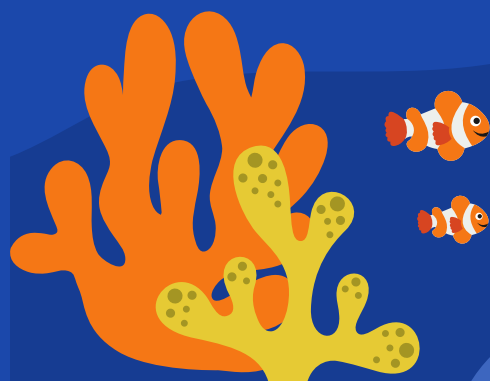


Growing up, many people told her she couldn't be a scientist because she was a woman, but she proved them wrong. She's famous for her research on sharks. Throughout the story, **emphasize** how Eugenie follows her dreams despite what others tell her, and **highlight** her important discoveries.





WHILE READING
Shark Lady
QUESTIONS



Reading Questions



PAGE 1

Before reading, ask students: where do they think Eugenie is right now? What animal is she watching? What do you notice about her family, who she's with?

Add Background: Eugenie's Mother is Japanese. She immigrated to American from Japan at 10 years old. Her father was White/American born in Pennsylvania. He died shortly after she was born)

After Reading: Thumbs up or down: Have you been to the aquarium? Favorite animal at the aquarium?



PAGE 2-3

Ask students: What do they think it would be like to breathe underwater? What would it be like to swim with sharks?

Movement Activity: Move your body like you are walking at the bottom of the sea. Would you move fast, or slow? Try it. Move like you are swimming with sharks.



PAGE 4-5

Explore Illustrations: Ask students, what does Eugenie see under the ocean?

Connection: Have you ever swum in the ocean? What animals have you seen underwater?

Reading Questions

PAGE 6-7



Eugenie wishes everyone could see sharks through her eyes. Have students make goggle circles with their fingers and hold them up to their eyes. Pretend we are looking at sharks through Eugenie's eyes. What do you see? What do you think about sharks from Eugenie's point of view?

Compare and Contrast: Eugenie's POV of sharks vs. everyone else.

Art: Draw how other people see sharks vs. how Eugenie sees sharks

PAGE 8-9



Before Reading: Where does Eugenie go to learn more about sharks? Talk about the value of libraries and learning from books.

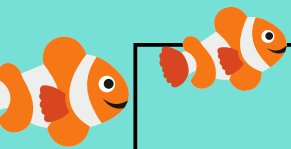
Compare and Contrast: Display the included graphic of types of sharks and discuss their similarities & differences: whale sharks, nurse sharks, tiger sharks, lemon sharks.

PAGE 10-11



Math Connection: How many gallons of water does a shark need in its tank to survive? How many more gallons of water would Eugenie need to fit a shark in her tank? How many 15 gallon tanks would Eugenie need to have enough water for a shark?

Count the guppies, snails, and clown fish in the tank.



Reading Questions



PAGE 12-13



Before Reading: Set the context. This is Eugenie grown up, in college. What do you notice about her class? (Back then, very few women went to college. People thought women should stay home and take care of the house. What do you think about that?)

How does Eugenie feel when people tell her she's not smart or brave enough? Eugenie believes in her dream. What is your dream?

PAGE 14-15



What are the different ways Eugenie studies fish? (Scientists read, they make observations, dissect animals to learn about how they work inside.)

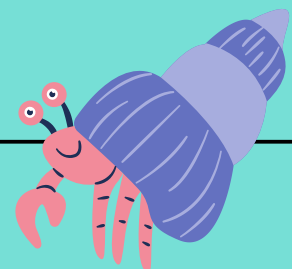
Extension: Practice observations. Go outside with an observation journal and observe the birds/nature. Get a class goldfish and observe the fish.

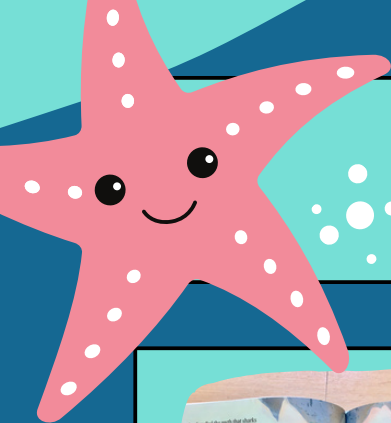
Eugenie graduated college as one of the smartest students, but why do people still doubt her? What do you notice in this picture? How is everyone feeling, including the professor? How do you think Eugenie feels about this?

PAGE 16-17



Geography: Find Red Sea and Palau Islands on the map. How would you feel seeing a shark in the wild?





Reading Questions



PAGE 18-19

Myth vs. Fact: Review myths vs. facts about sharks in the book. Share other myths and facts you and students have heard.



PAGE 20-21

Before Reading Illustration Analysis: What do you notice on the cans and in the photo?

- The newspaper heading?
- What do you think about these things?
- How do you think Eugenie feels about this? What can she do?



PAGE 22-23

Read page 22, and then pause and ask students to answer the questions you read aloud. Can you train sharks? How smart are sharks?

Illustration Analysis: Look at the illustration. What did she train the sharks to do?

Science Extension: Choose an animal and design an experiment to train it to do something.

After Reading:

- Now that you have finished reading, what are some other adjectives to describe sharks?
- How do the people in the last picture feel about sharks?
- Have your feelings about sharks changed?

Extension Activities



Make a **timeline** of Eugenie's life and major discoveries. Reference timeline at the back of the book.

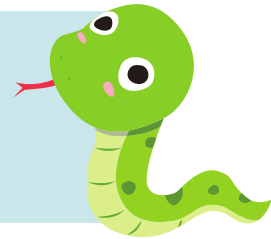
Shark Poem: Use adjectives and descriptive language to write a shark poem. Try a haiku.

Poem
Mmm, Shark
Like the Shark
Mmm, Shark
Shark like Shark
Shark like Shark
Shark like Shark



Science: Design an experiment to train an animal to do something (like how Eugenie trained the sharks)

Research an animal that people think is "Scary." Ex. snakes, rats, spiders. Report Myth/Fact about that animal.



Research Asian American Scientists and produce a short biography (reference list provided).

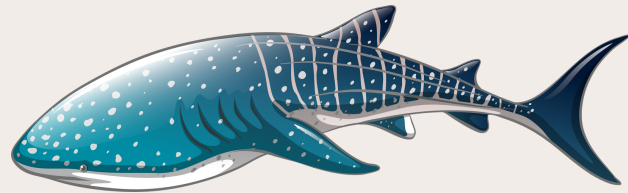
Art: Eugenie Clark portrait with facts about Eugenie Clark. Alternative: Shark art with shark facts.



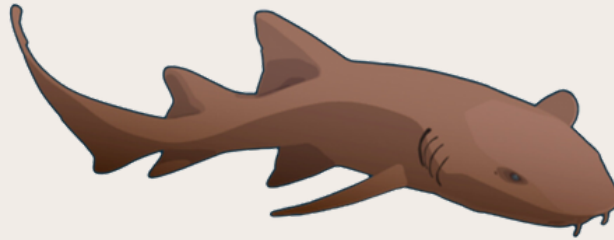
Types of Sharks



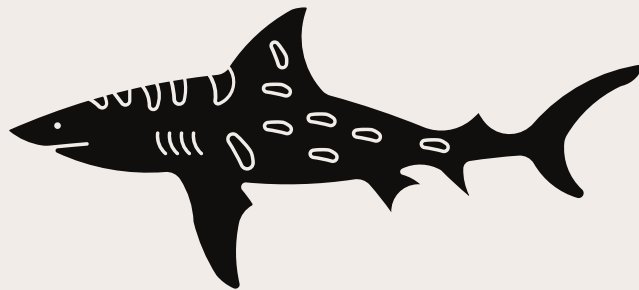
Whale Shark



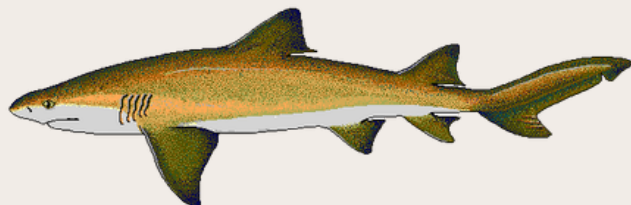
Nurse Shark



Tiger Shark



Lemon Shark



Asian American & Pacific Islander Scientists

Bonnie Lei

Bonnie Lei is a conservation biologist. Today, she heads Microsoft's AI for Earth Program, which delivers technology solutions to environmental challenges. Previously, she helped start the marine program for the Wildlife Conservation Society in Myanmar and discovered a new sea slug species in the Caribbean.

Flossie Wong-Staal, PhD

Dr. Wong-Staal was the first scientist to clone HIV and determine the function of its genes. She helped prove HIV is the cause of AIDS. She also helped formulate the Pfizer and Moderna vaccines. She was born Yee Ching Wong in China, but was pressured to choose an English name to further her career.

Kalpana Chawla, PhD

Dr. Chawla was an aerospace engineer and the first Indian American woman in space on NASA's 1997 Columbia space shuttle mission. She was the robotic arm operator. She was awarded the Congressional Space Medal of Honor.

Isabella Aiona Abbott, PhD

Dr. Abbott was the first native Hawaiian woman to earn a Ph.D. in science. She was an ethnobotanist, a scientist who studies the interaction of humans and plants. She is known for her research on edible seaweed, known as limu. She has been called the "First Lady of Limu."

Roseli Ocampo-Friedmann, PhD

Dr. Ocampo-Friedmann was a Filipino American biologist who researched microorganisms that live in extreme environments. Her research helped indicate that microscopic life could exist on Mars.

Tetsuya Theodore Fujita

Ted Fujita was a Japanese American meteorologist who studied storms and tornadoes and visited hundreds of tornado sites to gather data from the aftermath. Fujita, who became known as "Mr. Tornado," developed the Fujita Scale (F-Scale), a six-point scale to measure the strength of tornadoes.

Dr. Barry Paw

Dr. Paw was a Burmese American biologist who studied red blood cells and used zebrafish to research blood disorders. His research with zebrafish led to the identification of gene mutations that cause anemia.