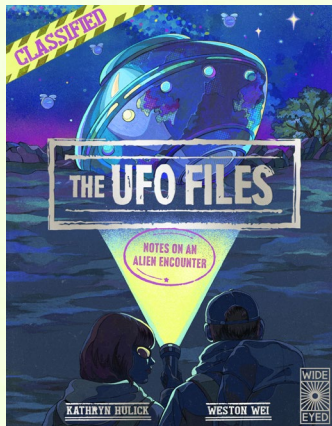


THE UFO FILES

Educator Guide



The UFO Files

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Illustrated by Weston Wei

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Ages 9 to 12 (Grades: 4 to 7)

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About the Book

The year is 2033, and an alien spacecraft has arrived on Earth. An investigator known only as Polaris has compiled THE UFO FILES, a report into every aspect of the spaceship and the beings that built it. Piece by piece, uncover a thrilling narrative of courage and curiosity during this closest of encounters, while delving into the cutting-edge science and technology that help Polaris understand – and welcome – these visitors from a distant star system.

THE UFO FILES, aimed at readers in upper elementary and middle school, explores how the arrival of an alien spaceship on planet Earth might impact humanity. Told in a graphic novel style, the book combines a science fiction story with nonfiction sidebars.

Reading comprehension: THE UFO FILES



Before reading

THE UFO FILES combines a science fiction story with nonfiction information. Help students understand what the book is about and how it is told using clues on the front and back cover, and in the back matter.

Here are some questions you can ask the class:

1. Look at the front cover and think about what you see.
 - What do you notice about the ship? Where do you think it came from?
 - What do you think might be inside the UFO?
 - Who do you think the two people are and what might they be doing?
 - What does "classified" mean, and why do you think that is on the cover?
2. Read the back cover and think about it.
 - Does the description make you want to read the book? Why or why not?
 - What did you learn about the book from this description?
 - What do you think the pieces of technology shown here might be?
 - Do you think this book is a true story? What clues can help you answer this question?
 - Do you think this book might contain facts as well as fiction? What clues can help you answer this question?
3. Discuss the difference between fiction and nonfiction.
 - What do you already know about fiction, especially science fiction?
 - What do you already know about nonfiction?
 - Look at p. 108 and read about the author's sources. Why do you think the author spoke to so many scientists to write this book?
 - Can you think of any other examples of books that combine fiction and nonfiction?



During reading

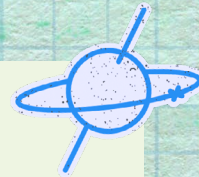
As your students read each chapter, give them these discussion questions. This will help them check their comprehension and explore the themes of the book.

First Contact, pages 5-15

1. Who is Polaris? Why are they using this nickname?
2. Why are people so excited about the signal from space?
3. Do scientists jump to the conclusion that the signal came from aliens? Why or why not? What else might the signal be?
4. What does SETI stand for, and what does this organization do?
5. Do we know if Earth is the only planet with intelligent life? How can the Drake equation help answer this question?

The Spaceship, pages 16-31

1. If you saw or came across something that looked like a UFO, what would you do?
2. Name three different kinds of evidence that Polaris gathered about the object that fell from space.
3. What job would you most want to have if you were on the UFO investigation team?



4. Do you think the UFO is dangerous or not? Why do you think that?
5. What are the BugBots? What did the investigators have to do in order for them to come out of the UFO?

The Language, pages 32-47

1. Why is it so difficult to figure out the meaning of a message in an unknown language? And how could AI help?
2. How is the BugBot language different from your language?
3. What turns out to be the meaning of the radio call that the UFO sent out?
4. What happened when the investigators ate an apple in front of the BugBots? Why do you think this happened?
5. The BugBots invite the investigators inside the UFO. Would you follow them? Why or why not?

The Technology, pages 48-61

1. The BugBots give Polaris a gift. What does it look like? Name three things you think it might be.
2. What is fusion energy? What does the UFO use its fusion reactor to do?
3. Do you think BugBot technology is more or less advanced than Earth technology? What clues from the text support your answer?
4. What is a 3D printer? Why do you think the UFO needs a 3D printer on board?
5. Why do you think Polaris decides to visit an artists' colony instead of returning to the UFO investigation?

The Journey, pages 62-77

1. Compare the "book" that the BugBots shared with a book from Earth. What are the similarities? What are the differences?
2. What is the planet that the UFO came from like? How is it different from Earth?
3. What is a space elevator? Why don't we have this technology on Earth yet?
4. What do you think the backward-S symbol means?
5. Why do the BugBots start walling off the UFO? What do you think Polaris could do to make this bad situation better?

The Bodies, pages 78-93

1. If you had to tell aliens about humanity and planet Earth, what information would you include?
2. What is cryptobiosis? Why would this make a long space journey easier?
3. Name three real living things that are similar to the Blues. What is similar about them?
4. The Blues use bioluminescence. What is this, and why do they have this ability?
5. Read the Visitors' Rights on p. 93. Why might the Visitors deserve these rights? Do you think any animals on Earth should have rights like these? Why or why not?

Visitors Among Us, pages 94-106

1. Why is Polaris worried about the Blues waking up? Can you think of something that might go wrong?
2. Compare the symbols on p. 97 to the ones on p. 28-29. Can you figure out what the BugBots were saying when they first emerged from the UFO?
3. Imagine that you are one of the people chosen to board the UFO and share a story with the Blues. What story would you tell?
4. Name three differences between the way Blues live and the way people live. Which difference is most interesting to you and why?
5. Why do you think the Blues leave the UFO at the end? Do you feel happy or sad about the ending, and why?

Creative writing: Imagine an alien

THE UFO FILES involves an encounter with two kinds of aliens, robots called BugBots and animals called Blues. In this activity, students will invent their own aliens! They could even choose to use generative AI to help expand and add to their own creative ideas.



1. Give your students the following worksheet to fill out:

Choose living alien beings or alien robots (or a combo of the two!)

Describe the world they come from. Is their planet hot or cold? Big or small? Or maybe they live on spaceships.

How do they move around? (Feet? Wings? Wheels?)

What senses do they have? (Sight? Hearing? Special alien senses?)

How do they get energy?

How do they communicate?

What sorts of things are important in their culture? (Family? Scientific discovery? Strength or power?)

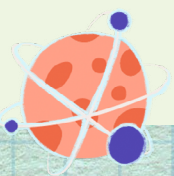
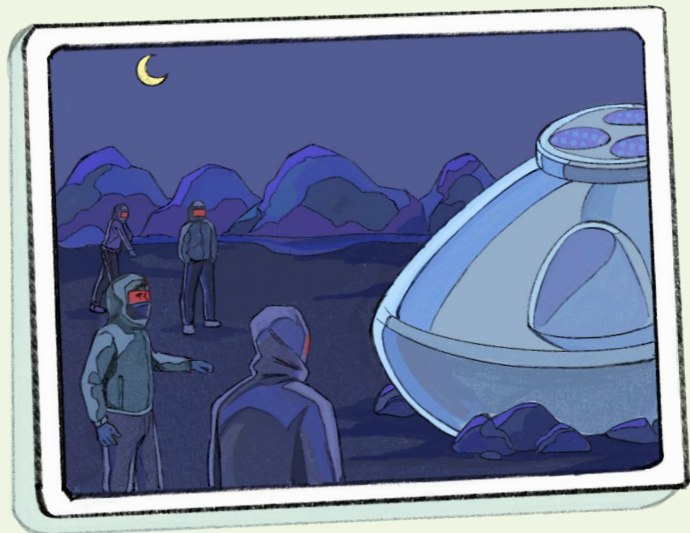
2. On the back of the worksheet, students should draw a picture of the alien and label its parts. If they would like another source of inspiration, students could put a description of the alien into Dall-E or another AI image generator to see what it comes up with.
3. Students should write a short story about the alien arriving on Earth. They should include what happens after it arrives and why it came. Students should write the first draft independently.
4. Students can now try pasting the draft into ChatGPT, Claude, or another generative AI tool, adding the prompt: "I'm a student in middle school and I wrote this story. Do you have any ideas on how I could revise or expand it?" They should use the AI's responses to work on a second draft.



Critical thinking: Fiction vs. nonfiction

THE UFO FILES combines a science fiction story with nonfiction sidebars. However, many parts of the science fiction story have been presented as if they are real emails, newspaper articles, charts, or other scientific material. In this activity, students will use critical thinking and online fact-checking to tease apart what's imagined from what's real.

1. Use the first few pages as an example. As a class, look at pages 8-13 together.
2. Ask if the newspaper story "Strange Signal From Space" on page 8 is nonfiction or fiction (it's fiction) and discuss some clues:
 - If this were real, students and their families would have seen it on real news.
 - A real newspaper would use a real photograph, not an illustration.
 - On page 13, you can see the story is set in 2030, a year that hasn't happened yet.
3. Ask if the sidebar "The story of SETI" on page 9 is nonfiction or fiction (it's nonfiction) and discuss some clues:
 - It's set apart from the main story with a distinct border, subheadings, and fonts.
 - The dates mentioned are all in the past.
4. Explain that you can check if you're correct about which parts are fiction and nonfiction by fact-checking. Demonstrate this for the two sections above using online searches.
 - As you search, explain the difference between AI-generated search responses (which aren't always true), and information from more reputable websites (such as .edu or .gov). Explain that you can add "-noai" or "-ai" at the end of a Google search to prevent an AI response from appearing.
 - Search online for a person mentioned in the fictional newspaper story ("Shane Atwood SETI") and show there's no person with that name in that role.
 - Search for the person mentioned in the nonfiction sidebar ("Jill Tarter SETI") and show there is a real person with that name in that role.
 - Check another fact in the nonfiction sidebar: "Breakthrough Listen Initiative launched in 2015."
5. Break the students into small groups and assign each group one of the following sections of the book. All of these sections contain several clear examples of nonfiction sidebars.
 - The Spaceship, pages 18-23
 - The Language, pages 34-37
 - The Language, pages 38-41
 - The Technology, pages 52-55
 - The Technology, pages 56-59
 - The Journey, pages 64-67
 - The Journey, pages 68-71
 - The Journey, pages 72-75
 - The Bodies, pages 84-87
 - The Bodies, pages 88-91



6. Each group should create a chart (example below) and fill in at least three examples of fiction and nonfiction parts of the text.

Page numbers:	
Fiction	Nonfiction
1.	1.
2.	2.
3.	3.

7. Have the students fact-check one fiction and one nonfiction section using online searches. Did they identify them correctly?

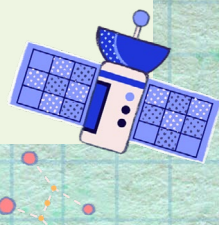
Vocabulary: Learn & teach a new science term

THE UFO FILES includes a lot of advanced vocabulary from science and technology. In this activity, students will each learn the meaning of one technical or scientific term and then create a video, reel, or poster that explains the term.

1. Have students work alone or in pairs. Assign words from the following list:

- Technosignature (page 8-9)
- Frequency (page 10-11)
- Nanotechnology (page 24-25)
- Xenolinguist (page 36-37)
- Generative adversarial network (page 38-39)
- Infrared (page 40-41)
- Fusion (page 54-55)
- Superconducting magnets (page 56-57)
- Pulsar (page 64-65)
- Exoplanet (page 68-69)
- Rocket propulsion (page 72-73)
- Cryptobiosis (page 84-85)
- Tardigrades (page 84-85)
- Photosynthesis (page 88-89)
- Bioluminescence (page 90-91)

2. Students read their pages and find all instances of their term.
3. Using context clues on the page, students write down what the term means.
4. Students spend 10-15 minutes researching their term online for additional information, including charts or images that help explain what it means.
5. Students create short videos, reels, or posters to present the vocabulary term to others.



About the Author

Kathryn Hulick started writing stories when she was eight years old and never stopped. As a freelance science journalist, she covers technology, AI, and computing for Science News and Science News Explores. Her books for young people include *Welcome to the Future: Robot Friends, Fusion Energy, Pet Dinosaurs, and More* (Quarto, 2021), and *Strange But True: 10 of the World's Greatest Mysteries Explained* (Quarto, 2019). Hulick's favorite part of writing about science is getting to speak with researchers in many different fields. Once, she spoke with an expert on parallel universes while he was shoveling snow from his driveway. For more information, visit <https://kathrynhulick.substack.com/>

About the Illustrator

Weston Wei is an illustrator from China who now lives in New York City. He describes himself as a 55% extrovert and 45% introvert, which is why he chose to live in the most crowded city in the world but spent lots of time in his room and drawing alone. Weston's visual practices focus on communicating stories and emotions. His art aims to build an immediate and direct emotional connection with his audience. Influenced by surrealist art, fashion styling, and pop culture, he loves drawing figures with vivid colors and meticulous details.



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