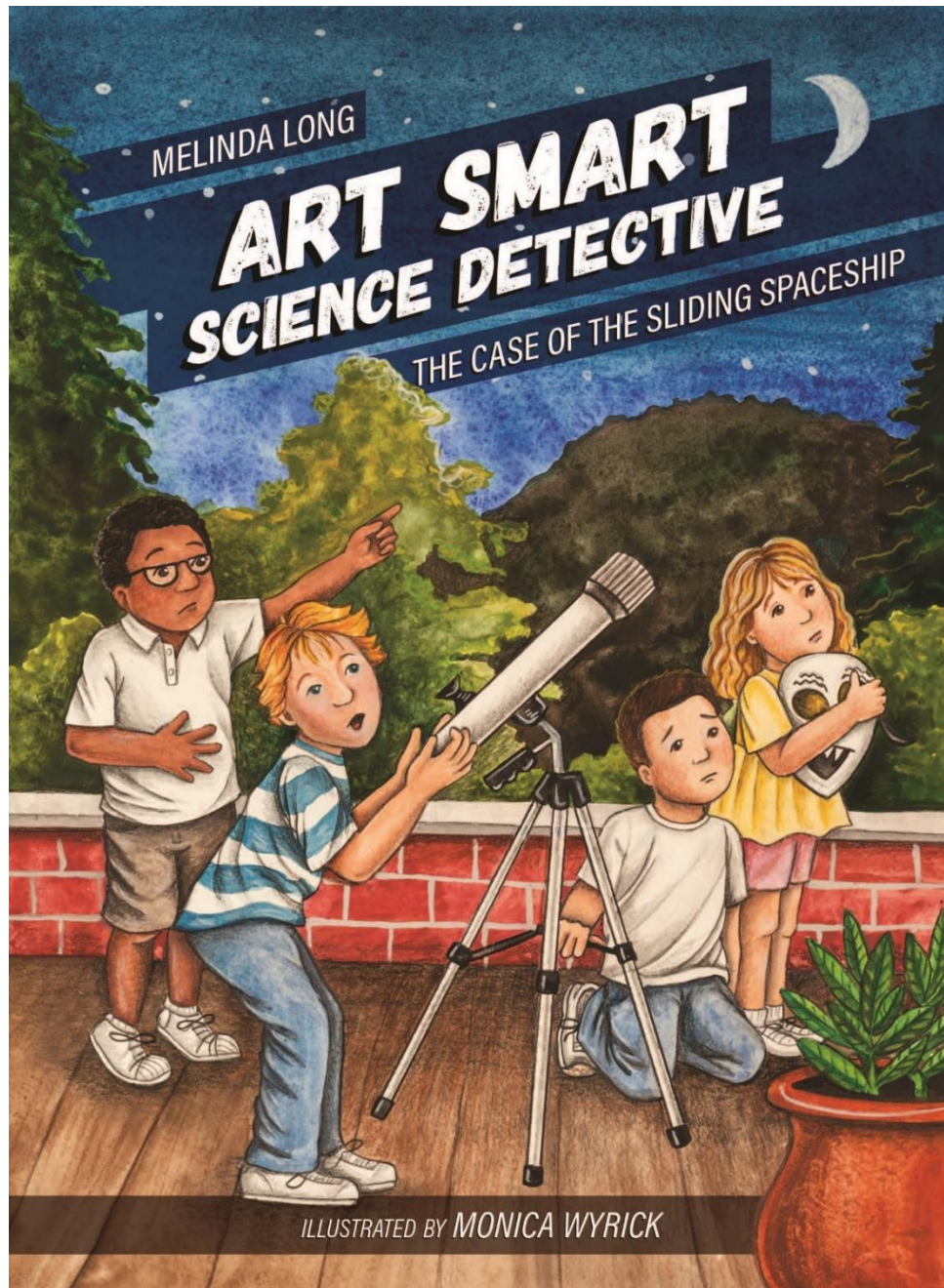


Educator's Guide To

ART SMART, SCIENCE DETECTIVE: THE CASE OF THE SLIDING SPACESHIP

By Melinda Long
Illustrated By Monica Wyrick



Dear Educator,

I was a teacher long before I became a full-time children's author. I taught every academic subject on every level of middle school and some in elementary in 23 years of teaching. My favorite subjects, as it turned out, were science and English-language arts.

Eventually, my love for reading and writing led to a career in children's books. I have been writing and sharing that love with picture books such as *When Papa Snores*, *How I Became a Pirate* and *The Twelve Days of Christmas in South Carolina*, since September, 2000. I was thrilled to see my books used in classrooms around the country and some around the world.

Now I'm happy to add my love for science to that list with *Art Smart*, *Science Detective: The Case of the Sliding Spaceship*. I hope you'll take the time to use some of the activities in this packet in your classroom as you investigate alongside Art and his friends.

These activities are designed to allow for open-ended and comprehension questions as well as STEM/STEAM investigations. It is my hope that it will make this book both enjoyable and usable as a classroom tool. Please feel free to use the questions and adapt them for your classroom use. I've duplicated the packet in the second half of this document without standard notations for ease of copying.

Sincerely,

Melinda Long

ART SMART, SCIENCE DETECTIVE: THE CASE OF THE SLIDING SPACESHIP

By Melinda Long

ABOUT THE BOOK

When Art and his friends—Robbie, Jason, and Amy—are having a sleepover, they decide to use Art’s telescope for some stargazing. They are shocked to see a purple spaceship hurtling toward Earth. While his parents think his imagination is getting the best of him, Art thinks Earth is at risk of an alien invasion. What should he do? Should Art and his fellow science detectives alert the authorities, or should they take matters into their own hands?

When the local police don’t seem concerned about Art’s report, the group decides to apply their knowledge of science and critical thinking skills to prepare for the impending attack. They need a plan—and fast!

What transpires as they gear up for the spaceship’s arrival will amuse and educate. *Art Smart, Science Detective* will appeal to budding scientists and even reluctant young readers as it answers burning questions such as “How close is science fiction to real life?” and “Can peanut butter really keep your brain safe from an alien assault?” This entertaining journey through the science of the sky is easily incorporated into middle-grade STEM/STEAM Classes.

Standards Addressed

These activities are divided into ELA and Science standards with Visual and Performance Arts standards spread throughout. The key to reading the standard codes is below. Standards are presented with levels when appropriate. Most have no level because they are adaptable to all elementary ages. These activities are designed to allow you to pick, choose and adapt rather than using the entire set, since not every question/activity will work for every classroom. You, as the educator, know your students better than anyone. Therefore, feel free to copy and adapt these activities to your class as needed.

From SCCCR State Standards (Activities also coordinate with common core standards where applicable)

ELA Standards

I-Inquiry-Based Standards

RL-Reading Literary Text

RI-Reading Informational Text

W-Writing

C-Communication

Science Standards

S-Science and Engineering practices

E-Earth Science

P-Physical Science

Visual Arts-VA

Performance Arts

D-Dance

GM-General Music

T-Theatre

Computer Literacy-DL

*****Stem/Steam related activity**

TDA-Text Dependent Analysis

PRE-READING ACTIVITY (RL5.2, 5.6)

1. Have students look at the title and cover art and describe what they think is happening.
2. Ask students if they've ever spent the night with friends. What sort of fun things did they do?
3. Ask students if they've ever used a telescope? What kinds of things did they see? Have they ever tried to find pictures in the stars?
4. Ask students what they would do if they saw a spaceship?

For K-1 classes, you may wish to do a collaborative list.

For grades 2-5 you may want to have students write a paragraph answering one or more of these questions.

Chapter 1

ELA

1. What can you infer about this chapter based on the subtitle? (RL5.2)
2. Who is telling this story? (RL11.2)
3. Who is Mr. Baber? What does the illustration tell you about him? (RL5.1, 5.6)
4. Why does Art ask his mother about Mr. Baber and the tabloid stories? (RL5.1)
5. Art's mother says, "Not everything can be explained with logic and reason. If we already knew everything there is to know, life would be pretty boring." What does she mean? (RL5.1, 8.1)
6. What is a U.F.O.? (RL10.1, RI 5)
7. Make a prediction. What do you think is going to happen with the case of the sliding spaceship? (RL 5.2)
8. Retell this chapter in your own words. (RL7.1)

Science and technology

1. When the chocolate melted, it went from a solid chocolate kiss to a different state of matter. What things can you think of that change from solid to liquid when they get warmer? Can you design an experiment to show how some matter changes from solid to liquid, or liquid to gas, or the other way around? (**2.P.3A, 3.P.2A, K-5.S.1)
2. Why is it important that we learn about the skies beyond our earth? How do you think scientists can make discoveries about space? (**K-5.S.1, RI 5)

Chapter 2

ELA

1. What can you infer about the chapter based on the illustration? (RL5.6)
2. Amy is one of Arts best friends, but she is also his cousin. Do you have people in your life that play more than one role? (RL5.1)
3. What does Lisa want to do when she grows up? (RL5.1)
4. What is was the name of the movie Art and his friends watch? How do you think this might become important in this story? (RL5.1, RL5.2)
5. How is science fiction different from regular fiction? (RL12.1)
6. Why do you think Robbie and Jason kept looking out the window? (RL5.1, 8.1)
7. Predict what will happen now that the lights are out. (RL5.2)
8. Retell this chapter in your own words. (RL7.1)

Science and technology

1. Research Jules Verne. Learn about his books. Read one of his books or watch a movie based on those books. Write about some of the science fiction ideas he had then that have become real today. (**K-5S.1, I.1-5, RI 5)
2. What are some inventions that were only imagined years ago that are part of our regular lives today? (**K-5S.1, I.1-5)
3. What kind of technology can you imagine that doesn't yet exist, but may be needed one day? Draw a picture and explain what your technology will do. Then plan and build a model for that technology from found objects. (**I.1-5, K-5S.1, VA.CR)

Chapter 3

ELA

1. What can you infer about the chapter based on the subtitle? (RL5.2)
2. What kind of creature appears in the doorway? (RL5.1)
3. How do Art and each of his friends, react to the creature? (RL5.1)
4. What kind of sandwiches does Lisa make for Art and his friends? (RL5.1)
5. When Jason asks Lisa if she believes in aliens, she says, “Only the one that lives in the room next to mine.” Who is she talking about? (RL8.1)
6. What do you think Art means when he says, “After that stunt she (Lisa) pulled, I never really thought I’d be glad to see her later, but I was.” (RL8.1)
7. Retell this chapter in your own words. (RL7.1)

Science and Technology

1. Why did scientists send the Voyager spacecraft into space in 1977? Research Voyager with a cooperative learning group. Find out what kind of items were on the space craft and why. Make a digital presentation that reports your findings. (**I.1-5,C.1-3, K-5S.1, DL.1, RI 5)
2. Scientists have been sending ships into outer space for years to find out more about our universe. Research the Mars space craft, Curiosity, as well as Voyager two. Write about those missions and what has been discovered. (**I.1-5,C.1-3, K-5S.1,W.2, 4, 5, RI 5)

Chapter 4

ELA

1. What can you infer about the chapter based on the illustration? (RL5.6)
2. What is another name for Ursa Major? (RL 5.1, RL 10.1)
3. Why did Mr. Baber get angry? (RL5.1, 8.1)
4. How does Art remember the names of the eight planets? Can you come up with your own mnemonic device to remember the names of the planets? (RL 5.1)
5. What kind of trouble do you think Art is talking about at the end of the chapter? Predict what will happen next. (RL 5.2)
6. Create your own constellation and a story to go with it. Draw the shape of your constellation on paper and then write a story about how it got there. (W.3,4,5, VA.CR)
7. Retell this chapter in your own words. (RL7.1)

Science and technology

1. Why is Pluto now considered a dwarf planet? (RL 5.1, S4.E.3, RI 5)
2. Find out more about the phases of the moon. Draw the phases of the moon and explain how they affect tides. (**C.1-3, S1.E.3, S4.E.3B.1, VA.CR NL.1.1, RI 5)
3. Research Mike Brown and Planet Nine. Design a short digital presentation with your cooperative group to display your findings. (**I.1-5, C.1-3, K-5S.1, DL.1, RI 5)
4. Do you think there may be other Earth-like planets in our galaxy that we don't know about? Use your imagination to tell about one. Give it a name, make a drawing, and tell your classmates everything about it. (**I.1-5, C.1-3, VA.CR, 4.E.3A, S1.E.3)

Chapter 5

ELA

1. What can you infer about the chapter based on the subtitle? (RL5.2)
2. What do the kids see in the telescope that surprises them? (RL5.1)
3. How do Art's parents react when the kids told them what they saw? Their reaction causes a conflict for the kids. How does this conflict force them to change plans? (RL5.1, 8.1)
4. Why does Art's mother sometimes cover her face with her hands when she talks to Art? (RL5.1, 8.1)
5. At the end of the chapter, Lisa stops Art and his friends as they're going to the garage. Predict what will happen with Lisa. (RL 5.2)
6. Retell this chapter in your own words. (RL7.1)

Science and Technology

1. The United States was the first country to put a man on the moon. Research astronauts Neil Armstrong, Michael Collins, and Buzz Aldrin to find out how they trained and what conditions aboard the Apollo 8 module were like. Write a paper about your findings. (**I.1-5, C.1-3, K-5S.1, W.2,4,5, RI 5)
2. In your cooperative groups find out what technologies existed in the home in 1969. What were televisions and radios like, for example? How is life easier now? How is it different? (**I.1-5, C.1-3, K-5S.1, S1.E.3A.3, RI 5)

Chapter 6

ELA.

1. What can you infer about the chapter based on the illustration? (RL5.6)
2. What is the “blue planet?” (RL10.1)
3. Why doesn’t Art tell Lisa that she and Joni remind him of twin chipmunks when they sing? (RL5.1, 8.1)
4. What does Lisa first do when Art and the others tell her about the space ship? What changes her mind? (RL5.1)
5. Art and Lisa behave toward each other like many brothers and sisters do. Write a paragraph explaining how they feel about each other. Find evidence in Chapter 6 and the rest of the book to support your answer. (W1.1 *TDA*)
6. What do you think the kids will do next? Make a prediction. (RL 5.2)
7. Retell this chapter in your own words. (RL7.1)

Science and technology

1. Research small pox to find out why the disease was so horrible. How did chemists find a way to stop the disease? (**I.1-5, C.1-3, K-5S.1, RI 5)
2. With your cooperative group, create a written or digital report on Alexander Fleming and how he discovered penicillin. How are penicillin and other antibiotics used today? (**I.1-5, C.1-3, K-5S.1, W.2,4,5, DL.1, RI 5)
3. What diseases and disorders are scientists currently trying to find cures for? What recent advances in medical science have you heard about? (**I.1-5, S.1)

Chapter 7

ELA

1. What can you infer about the chapter based on the subtitle? (RL5.2)
2. What do the kids think might happen when the space ship lands? (RL 5.1)
3. What do they do with the peanut butter? Why? (RL 5.1)
4. What other ways do they prepare for the aliens? (RL 5.1)
5. Do you think the police believed Art and his friends? Why or why not? (RL 5.1, 8.1)
6. Write a story about what you would do if aliens landed in your back yard. Tell this story through music, dance, or theatrical performance. (**T.CR, D.CR, GM.CR, C.1, W.3,4,5)
7. Retell this chapter in your own words. (RL7.1)

Science and Technology

1. What is an automatic translator? How can it be helpful? (**I.1-5, K-5S.1, RI 5)
2. With your cooperative group, decide on methods that might be helpful when communicating with people from other countries and cultures. Tell about your findings. (**I.1-5, C.1-3, K-5S.1)

Chapter 8

ELA

1. What can you infer about the chapter based on the illustration? (RL5.6)
2. What changed when Jason fell into the telescope? (RL 5.1)
3. What do the kids see as they move the telescope around? (RL 5.1)
4. After looking through the telescope again, Jason says, “Unless there are spaceships all over the sky! There’s a whole armada of spaceships!” What is an armada? (RL 10.1)
5. At the end of the chapter, Art says he was starting to get a funny feeling about the aliens. What do you think he means? (RL 5.1, 8.1)
6. If you had a telescope, what would you look for in the night sky? (RL 5.1)
7. How would you describe Art as a character? Support your answer using quotes from the book. (RL 8.1 TDA)
8. Retell this chapter in your own words. (RL7.1)

Science and technology

1. What are the rings of Saturn made of? (RL 5.1, S4.E.3A.1, RI 5)
2. With your cooperative group study the planets and report your findings. Then write a story about a trip to Saturn or some other planet. Who are your main characters? How do they get there? What do they find? Be creative. Tell their story. (**I.1-5, RL 5.1, S4.E.3A.1, C.1-3, K-5S.1,W.3,4,5, RI 5)

Chapter 9

ELA

1. What can you infer about the chapter based on the subtitle? (RL5.2)
2. Who is ringing the doorbell? (RL 5.1)
3. Art says his mother is going to be mad at him, especially after what he just figured out. What do you think he's figured out? (RL 5.2, 8.1)
4. Why does Art ask for an alcohol wipe? (RL 5.1,5.2)
5. Who do you think was responsible for the grape jelly blob? Why? (RL 5.1,5.2, 8.1)
6. Write another science adventure for Art and his friends. (W.3,4,5)
7. What type (genre) of book is ART SMART? (RL12.1)
8. The author has two purposes in this book. Choose two from the list: to explain, entertain, inform, or convince. Be ready to explain your answer. (RL11.1)

Science and technology

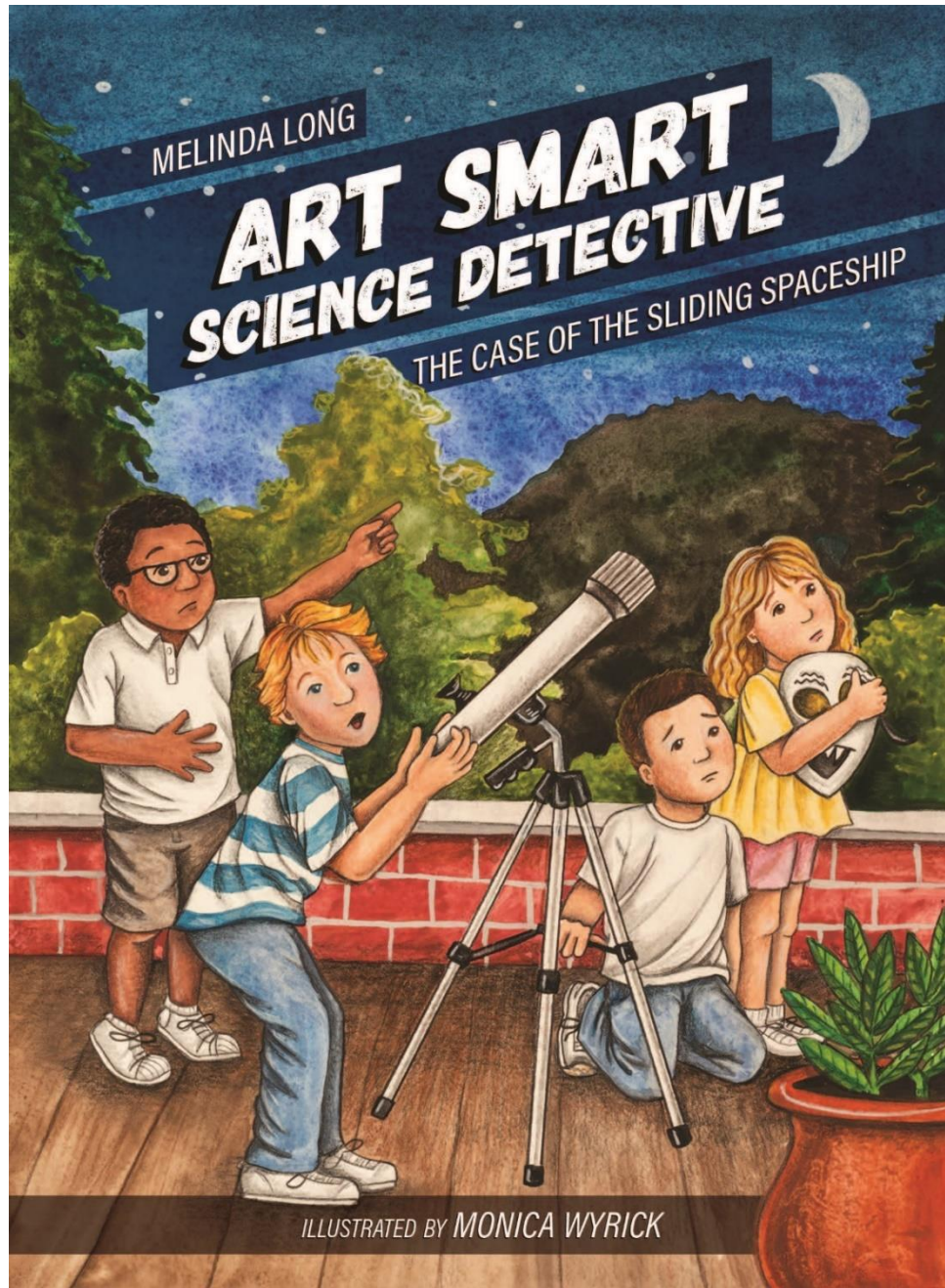
1. Research the Hubble telescope. With your cooperative group, create a digital report showing your findings. (**I.1-5, C.1-3, K-5S.1, W.2,4,5 DL.1, RI 5)
2. Research Hans Lipperhey and Galileo Galilei as well as the history of the telescope. Create a report on the telescope past, present, and future. (**I.1-5, C.1-3, K-5S.1, W.2,4,5, DL.1, RI 5)

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1. Why did scientists send the Voyager spacecraft into space in 1977? Research Voyager with a cooperative learning group. Find out what kind of items were on the space craft and why. Make a digital presentation that reports your findings.
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