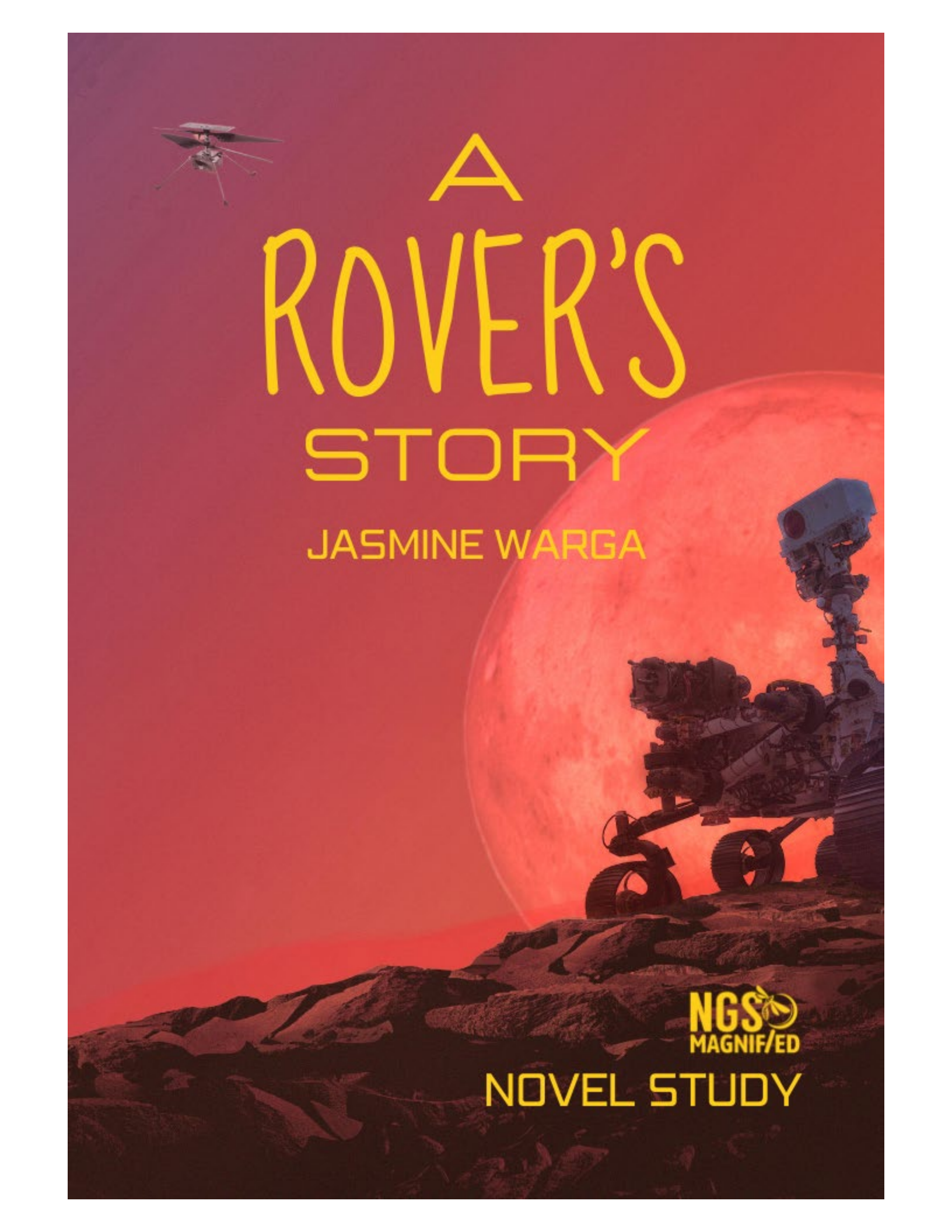




A ROVER'S STORY

JASMINE WARGA

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NOVEL STUDY

Novel Studies in the Science Classroom: Developing Science Literacy Skills

Today struggling readers face many long-term challenges and are more at risk of falling behind. However, science is a great way to engage students, no matter their background. NGS Magnified has created novel studies for teachers to use in the science classroom to help bridge that gap. Novel studies help build rapport with students while supporting and fostering independent learning. In addition, we believe that using novel studies in the science classroom will expose students to different perspectives and help them understand how science vocabulary applies to so many events in their lives.

Research shows that connecting content and skills from other subjects enhances students' learning and improves their comprehension.

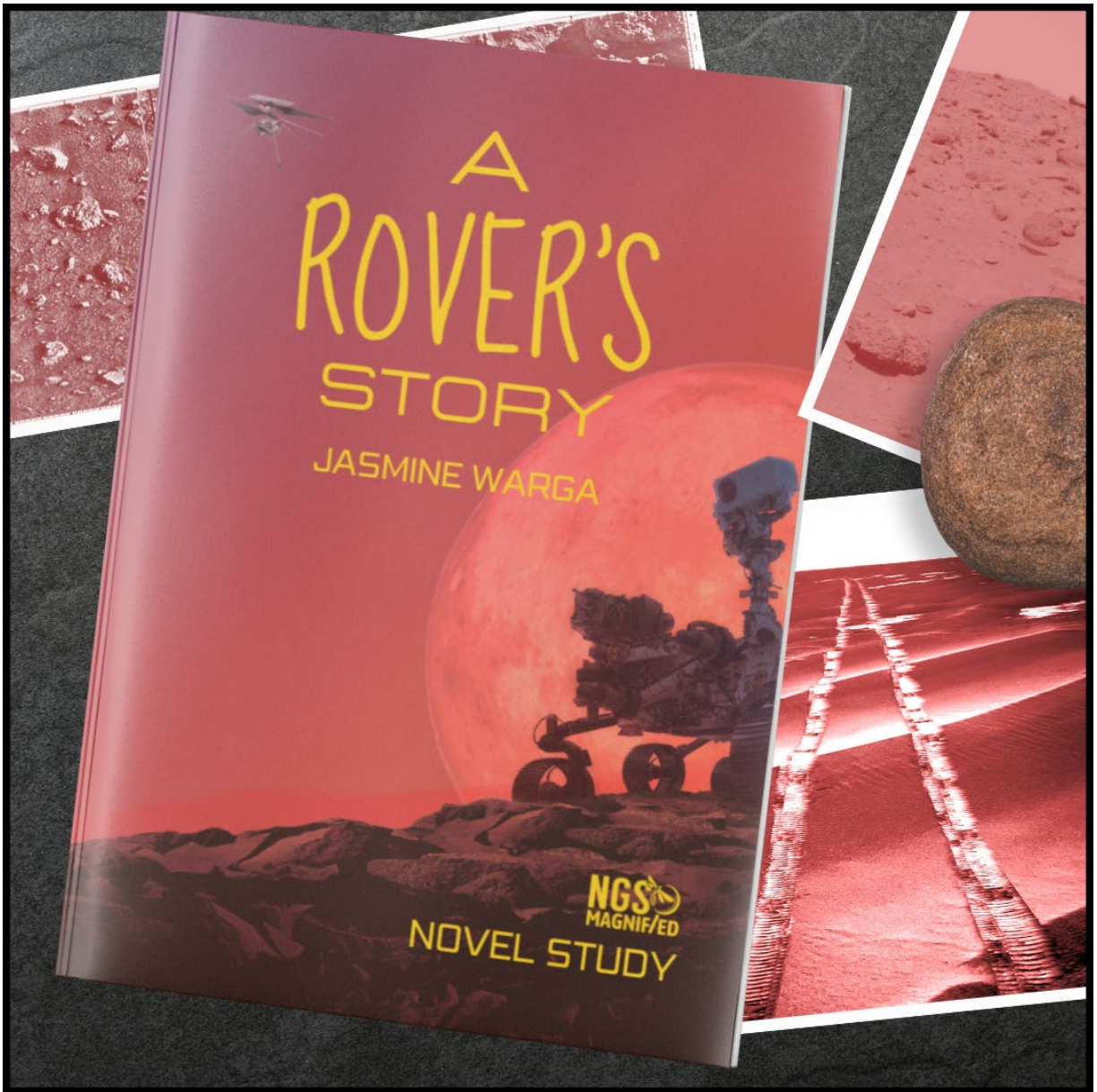
- *The literacy from reading can easily come from non-fiction and fiction novels that surround a science-related topic and are far more of a high-interest read for the majority of students than reading a textbook (Anderson & Hite, 2010; Batchelor, 2017; Coiro, 2012; Freudenrich, 2000).*
- *Science fiction novels are an excellent way to engage students in science ideas while also helping students improve their literacy skills. (Creech and Hale, 2006)*
- *Teachers can add in other readings from the internet and news articles which brings the reading level down to a more manageable level, however students are more willing to learn and spend the time to learn new vocabulary when highly engaged in what they are reading (Weinbugh et al., 2014).*

NGS Magnified novel studies heavily focus on the following:

- vocabulary
- reading comprehension
- simple research
- cross-curricular connections
- culminating final project

Students will focus on inquiry skills such as comparing and contrasting, summarizing, making inferences, cause/effect relationships, fact and opinion, and critical thinking.

Happy reading,
Erica



***New York Times* bestseller * Best Book of the Year from *The Washington Post*, *Publishers Weekly*, New York Public Library, Chicago Public Library**

Meet Resilience, a Mars rover determined to live up to his name.

Res was built to explore Mars. He was not built to have human emotions. But as he learns new things from the NASA scientists who assemble him, he begins to develop humanlike feelings. Maybe there's a problem with his programming....

Human emotions or not, launch day comes, and Res blasts off to Mars, accompanied by a friendly drone helicopter named Fly. But Res quickly discovers that Mars is a dangerous place filled with dust storms and giant cliffs. As he navigates Mars's difficult landscape, Res is tested in ways that go beyond space exploration.

As millions of people back on Earth follow his progress, will Res have the determination, courage, and resilience to succeed... and survive?

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@NGSS

**Check out the following sample pages
focusing on science vocabulary, reading
comprehension, and literacy-based projects!**

Teacher Guide included!

Before You Read

Find out what students already know.

Directions: Read each statement below. Circle **FACT** if you think the statement is true and **FICTION** if you think the statement is false. For those that are incorrect, please look up and provide the correct answer in the box at the bottom.

1. Mars is

2. Mars is

3. People

4. Mars h

5. A year

6. Rovers

7. Mars h

8. Mars h

9. Robots

10. Mars

WORD STUDY: Part One pp 1-44

1. Hazmat

2. Circuits

What is a h
scientists t

WORD STUDY: Part One pp 1-44

7. Scientists

8. Deduced

List as many famous scientists as
you can.

Use the word *deduced* correctly in
your own sentence.

WORD STUDY: Part One pp 1-44

3. Observati

List the five
making obs

- 1.
- 2.
- 3.
- 4.
- 5.

5. Microbact

The prefix

words you d
with the pr

- 1.
- 2.

9. Mo
Descri

11. Dis

The p

List t
the p

- 1.
- 2.

13. Code

Use the word *code* as it relates to
this novel correctly in your own
sentence.

15. Pigment

Definition:

17. Buoyancy

Draw a picture that correctly shows
the meaning of the word *buoyancy*.

14. Unbiased

Identify two synonyms for the
word *unbiased*.

16. Resilience

How can developing *resilience* help
you to overcome challenges in life?

18. Terrain

Planets have different terrains
because of various natural forces
that have shaped the land over long
periods of time.

TRUE

FALSE

Vocabulary

Reading Check: Part 1 – Preparing

Directions: Answer the following questions in complete sentences.

1. Describe Raina as the robot sees her.

2. Why is trust so important in any relationship?

3. What does it matter?

4. Why are they?

5. Why do they?

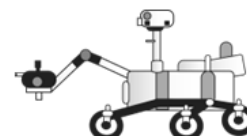
6. What are their eyes?

Reading Check: Part 1 – Preparing

Directions: Answer the following questions in complete sentences.

7. What is Res's mission?

8. Who is Fly?



Each section has reading comprehension questions to track student progress and understanding.

Novel Project option

A ROVER'S STORY

Final Project - Edible Rover

Challenge: Design and build a Mars rover model entirely out of edible materials that represents essential parts from the rover in *A Rover's Story* and real Mars exploration technology.

Project Requirements:

- At least five distinct rover parts must be included in your design. Examples:

- Wheels
- Camera mast
- Solar panels
- Robotic arm
- Antenna
- Body frame

- All parts must be labeled.

- Before building, get teacher approval. You must have a drawing of your rover.

- Your labeled drawing must be submitted with your model.

- Rover must be made of edible materials.

- Write a 1-paragraph challenge and how your rover solves it.

Example edible materials:

- Graham crackers
- Marshmallows
- Pretzel sticks
- Licorice strings
- Cookies (biscuits)
- Frosting or icing
- Gummy candies

Final Check Before Submission:

- ✓ Labeled drawing
- ✓ Paragraph challenge
- ✓ Model can stand
- ✓ Workspace cleaned

A Whale of the Wild

Edible Rover Model - 4-Point Rubric

Criteria	4 Meets Project Expectations	3 Minor Gaps in Requirements	2 Several Gaps in Requirements	1 Major Gaps or Missing Work
Rover Parts & Accuracy	Includes at least 5 distinct rover parts , all accurate and match the labeled drawing.	Includes 4 parts OR 1-2 parts do not match the labeled drawing.	Includes 3 parts OR several parts are inaccurate.	Includes fewer than 3 parts OR most parts inaccurate.
Edible Construction & Creativity	Entire model made of edible materials; neat, creative, freestanding.	Mostly edible materials; minor neatness/structure issues.	Some non-edible materials used OR model is unstable.	Mostly non-edible OR model falls apart.
Labeled Drawing	Drawing is neat, fully labeled, matches final rover, and was submitted with the model.	Drawing mostly matches final rover; missing 1-2 labels.	Drawing is incomplete OR mismatched with final rover.	No drawing submitted.
Mars Challenge Paragraph	A complete paragraph explaining a rover challenge & how the design addresses it.	Paragraph missing one part (challenge or solution) OR unclear connection.	Paragraph incomplete OR unrelated to rover design.	Paragraph missing entirely.
Clean-Up & Participation	Student participated fully & cleaned workspace completely.	Minor issues with participation or clean-up.	Several issues with participation or clean-up.	No participation and/or no clean-up effort.

Score Total _____ / 20

Feedback:



Thank you for sharing NGS Magnified with your students!

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