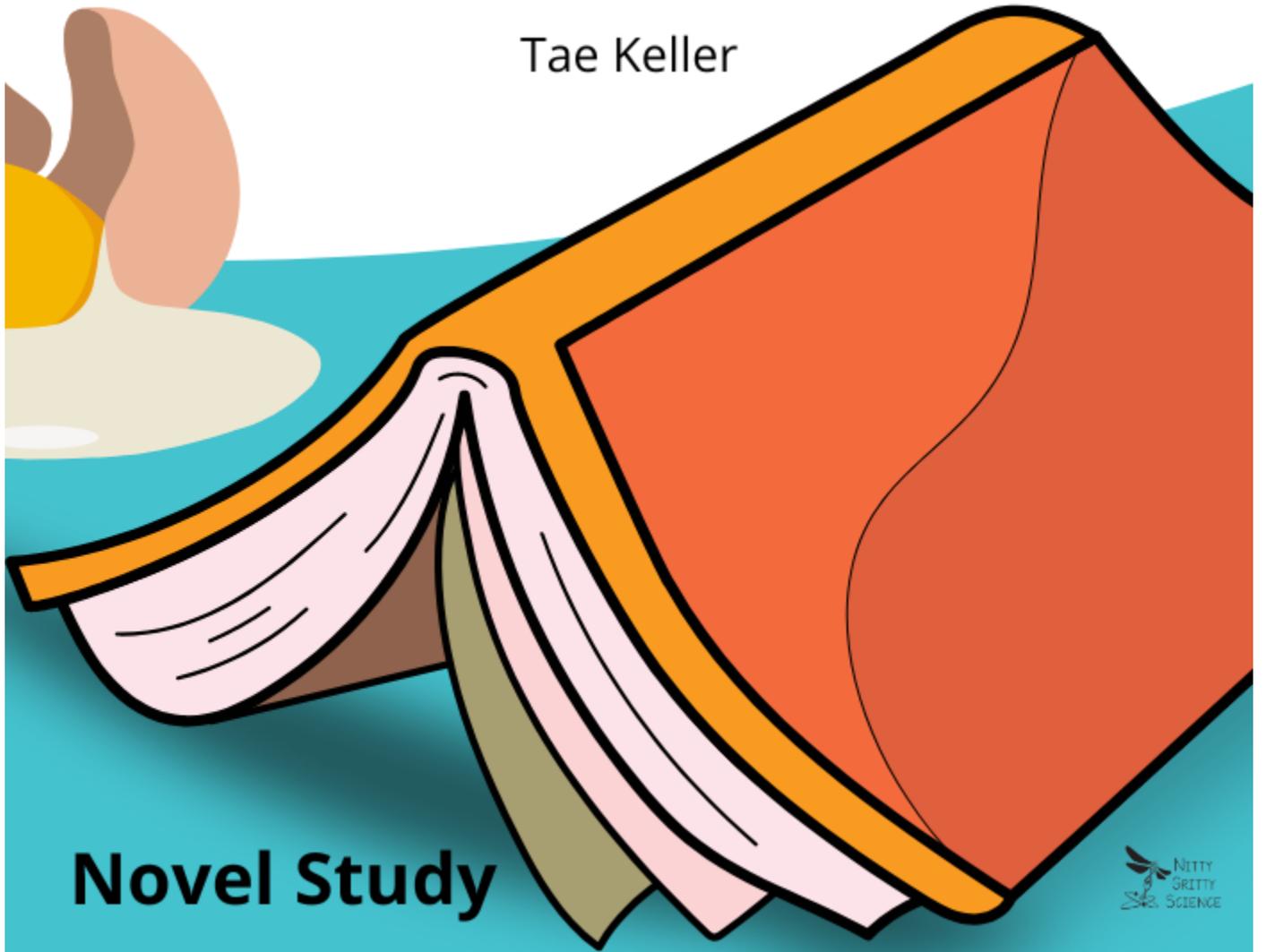




# THE SCIENCE OF BREAKABLE THINGS

Tae Keller



**Novel Study**

 NITTY  
GRITTY  
SCIENCE

## Why Novel Studies in the Science Classroom?

Here at Nitty Gritty Science we want to foster the love of reading and improve science literacy. We believe that using novel studies in the science classroom will not only give students exposure to different perspectives but will also help them develop an understanding of how science vocabulary applies to so many events in their lives.

Research also shares benefits of using novel studies in the science classroom such as:

*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).*

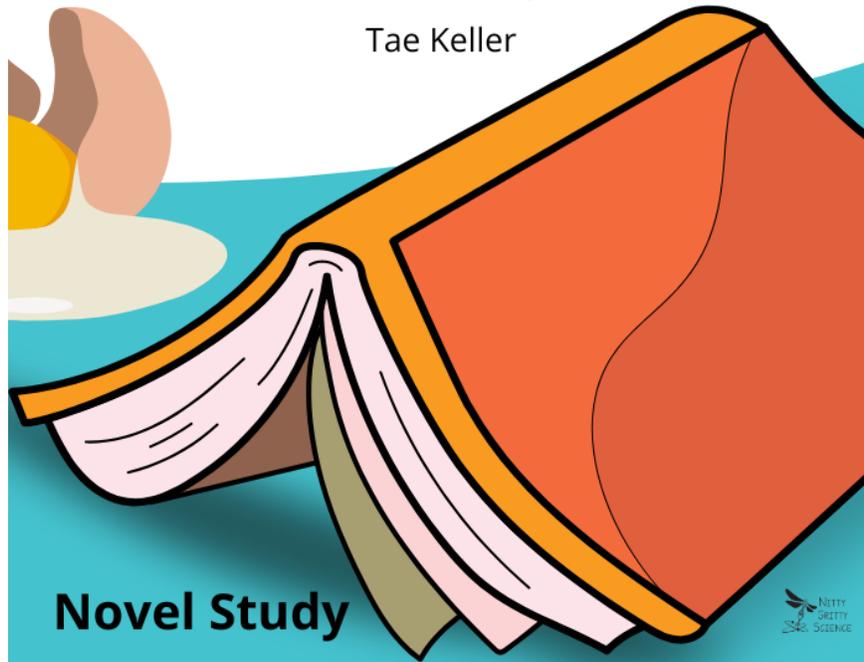
There is very little research out there about the usefulness of using novels in classrooms other than ELA. Others have used novels and other types of formats to get students excited about science and science concepts (Batchelor, 2017; Coiro, 2012; Freudenrich, 2000; Ivey & Fisher, 2005; Jarman & McClune, 2001), but very few have used novels to teach science concepts and also try to increase literacy skills among students in the secondary classroom, so Nitty Gritty Science is here to help with that!

Happy reading,  
Erica



# THE SCIENCE OF BREAKABLE THINGS

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*Eggs are breakable. Hope is not.*

When Natalie's science teacher suggests that she enter an egg drop competition, Natalie thinks that this might be the perfect solution to all of her problems. There's prize money, and if she and her friends win, then she can fly her botanist mother to see the miraculous Cobalt Blue Orchids--flowers that survive against impossible odds. Natalie's mother has been suffering from depression, and Natalie is sure that the flowers' magic will inspire her mom to love life again. Which means it's time for Natalie's friends to step up and show her that talking about a problem is like taking a plant out of a dark cupboard and giving it light. With their help, Natalie begins an uplifting journey to discover the science of hope, love, and miracles.

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

**Teacher Guide included!**

**Find out what students already know.**

**BEFORE YOU READ**

Directions: The Scientific Method is an organized set of investigative procedures scientists use to answer questions about the natural world around them. Fill in the blank.

Step 1: Observe      Step 2: Question


Step 5: Procedure      Step 6: Evaluate

Initials: \_\_\_\_\_

**WORD STUDY: Pages 3-27**

1. Science

List as many topics related to science as you can.

2. Footnote

Initials: \_\_\_\_\_

**WORD STUDY: Pages 3-27**

6. Chemical reaction

What happens when a chemical reaction occurs?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. Inflate

Identify two synonyms for the word *inflate*.

\_\_\_\_\_

\_\_\_\_\_

Initials: \_\_\_\_\_

**WORD STUDY: Pages 28-72**

1. Homeostasis

Homeostasis refers to living organisms maintaining a stable internal environment.

True

False

2. Internal vs. external

3. Naïve

Identify two synonyms for the word naïve.

\_\_\_\_\_

\_\_\_\_\_

5. Magnifying glass

Draw a picture of magnifying glass.

Initials: \_\_\_\_\_

**WORD STUDY: Pages 28-72**

7. Astronaut

Describe the job of an astronaut.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. Boiling

What is the boiling point of water?

\_\_\_\_\_ Fahrenheit

\_\_\_\_\_ Celsius

11. Classification system

Arrange the eight levels of taxa from the most general to the most specific.

density

9. Dissection

Definition:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Initials: \_\_\_\_\_

**WORD STUDY: Pages 28-72**

12. Cobalt / Aluminum

Cobalt and Aluminum are elements found on the periodic table. For each element write down its atomic number, atomic mass, and element abbreviation.

\_\_\_\_\_

Cobalt

\_\_\_\_\_

Aluminum

13. Pigments

Your skin gets its color from a pigment that is called \_\_\_\_\_.

14. Ion

Definition:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

15. Hybrid

Choose two animals and create a hybrid. Draw your new animal below.

16. Moss

Moss is an example of a \_\_\_\_\_ plant.

vascular

nonvascular

**Vocabulary**





Thank you for sharing Nitty Gritty Science with your students!

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