

## SUMMARY

Growing up in Hungary, Kati is fascinated by science—even giving up a special vacation with her family to go to a science competition. She learns that sometimes changing one thing in an experiment can make a big difference in the result. Kati spends 40 years trying to make mRNA help people with sickness, even when many people told her she should forget the idea. Then, amazingly, one day with a change and many experiments later, her mRNA experiments worked. Lucky, it was just in time to help save many lives during the Covid 19 pandemic.

*“An engaging look at scientific dedications and the timely development of effective vaccines.”*  
Kirkus Reviews

Content in this teaching guide aligns with Common Core State Standards for the RL.3.1 Third Grade:  
<https://www.corecommonstandards.com/core-curriculum/rl-3-1-third-grade-common-core-bundle/>

# DISCUSSION QUESTIONS

## Before reading:

1. Have you ever tried something and wanted to quit because it was hard? Name things that are hard to do. Name some things that you get better doing with practice.
2. Have you ever felt bad when someone said you were wrong? The girl in the story, *Never Give Up*, was told she was wrong about something she thought was very important. What do you think she should have done? What would you do?
3. Look at the cover. What do you think this person is doing? Make a list of possibilities. Read the story to see if you are right.

## After reading:

1. Many scientists told Dr. Kati Karikó that she should give up her study of mRNA. Do you think they should write a letter of apology to tell them she was right after all? Pretend you are one of those scientists and write Kati an apology letter OR write a thank you letter to Dr. Kati Karikó for her hard work. Your letter should include the date, a greeting (such as Dear Dr. Karikó, a closing (such as Your friend,) and your signature (your name or your pretend scientist name if you are writing an apology). You may send them to her in care of Lerner Publishing Group, Publicity Dept., 241 First Avenue North, Minneapolis, MN 55401.
2. The book, *Never Give Up*, has quotes from Kati and other famous people scattered throughout. Pick your favorite quote and make it into a poster to hang up in your classroom or at home.
3. Scientists keep laboratory notebooks. They write down everything they do in an experiment. They can look at their notes back to see each step of the experiment. Otherwise, they might forget something important! Try keeping your own lab notebook and write down everything you do for one hour. Are you surprised at how much you did? Was there something you may have forgotten if you hadn't written it down?

# Worksheet #1

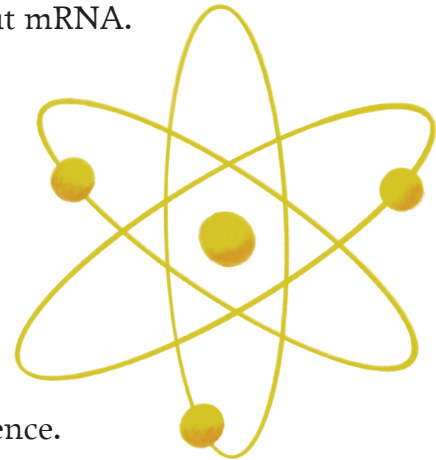
Name \_\_\_\_\_ Date \_\_\_\_\_

After reading the story, number these events from Dr. Kati Karikó's life in right order. You can look back through the story to check your work. The first one is done for you.

- \_\_\_\_\_ Kati went to a science competition instead of a water park.
- \_\_\_\_\_ Kati lost her job because her bosses didn't think her idea would work.
- \_\_\_1\_\_\_ Kati was born in Hungary.
- \_\_\_\_\_ Kati's mRNA experiment was a success!
- \_\_\_\_\_ Kati's research helped create the Covid-19 vaccine that saved lives.
- \_\_\_\_\_ Kati moved her family to the United States to learn more about mRNA.

Put a **T** for things that are true below, and an **F** if they are false.

- \_\_\_\_\_ Kati grew up very rich.
- \_\_\_\_\_ Every experiment that Kati tried worked.
- \_\_\_\_\_ Kati loved to run.
- \_\_\_\_\_ Changing one thing in an experiment can make a huge difference.
- \_\_\_\_\_ Kati got married and had a daughter named Susan.
- \_\_\_\_\_ DNA makes you have the same hair color as someone in your family.
- \_\_\_\_\_ Kati believes mRNA can cure or prevent many diseases.
- \_\_\_\_\_ A virus is the smallest unit that has all the basic properties of life.



## Worksheet #2

Name \_\_\_\_\_ Date \_\_\_\_\_

Kati wanted to study mRNA. What is something that you would like to study?

Go to the library or have an adult help you find out information on a computer. List three things that you find out.

- 1.
- 2.
- 3.

Scientists learn things, but along the way find MORE more things to learn about. Fill in the blanks below.

Things I have learned from <i>Never Give Up</i> .	Things I don't understand or want to learn.

Complete the chart below and the research other female scientists and their contributions. Pick one to write about. Use the back of this page to write her name, where she is from and a paragraph about what she has done.

Name some scientists from this book.	Lists some other female scientists from other books.

## Worksheet #3

Name \_\_\_\_\_ Date \_\_\_\_\_

# WHERE IN THE WORLD?

Kati Karikó grew up in a small town in Hungary, which is a country far from the United States. Later on she moved to Germany to study mRNA medications. Have you ever been to a country or state far away? Name some of the states or countries below. Name some of the states or countries you would like to visit.

Places I have been:

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

Places I would like to go:

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

When Kati moved to the United States she hid money in her two-year-old daughter's teddy bear. Create your own teddy bear picture on the back of this page. Will it look like Kati's daughter's teddy? Can you make a secret hiding place in your bear?

This page is intentionally left blank.

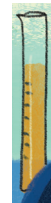
## Worksheet #4

Name \_\_\_\_\_ Date \_\_\_\_\_

# LAB WORDS

A scientist often works in a laboratory or lab. It is filled with special equipment with special names. Maybe you could have a scientist visit your class to show you some of the smaller things found in a lab or watch this video: <https://www.youtube.com/watch?v=chODOKSPJS4>. Take a look at the pictures below and draw a line between the word that matches the lab equipment.

Beaker



Flask



Graduated Cylinder



Goggles/mask



Microscope



Pipette



Test tubes



## Worksheet #5

Name \_\_\_\_\_ Date \_\_\_\_\_

# AUTHOR STUDY

Debbie Dadey is the author of *Never Give Up*, but she has written other books. Go to your library or [debbiedadey.com](http://debbiedadey.com) to find out other books that she has written. Compare and contrast one of her other books with *Never Give Up*. Find three ways they are the same and three ways they are different.

Name of the other book \_\_\_\_\_

HOW ARE THE BOOKS THE SAME?

HOW ARE THEY DIFFERENT?



This page is intentionally left blank.

## Worksheet #1 Answers

Name \_\_\_\_\_ Date \_\_\_\_\_

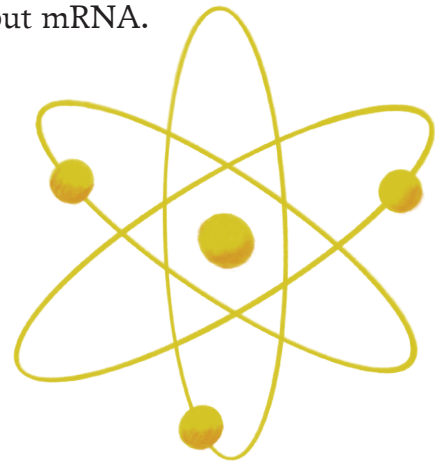
### ANSWERS

After reading the story, number these events from Dr. Kati Karikó's life in right order. You can look back through the story to check your work. The first one is done for you.

- \_\_\_\_\_ 2 \_\_\_\_\_ Kati went to a science competition instead of a water park.
- \_\_\_\_\_ 4 \_\_\_\_\_ Kati lost her job because her bosses didn't think her idea would work.
- \_\_\_\_\_ 1 \_\_\_\_\_ Kati was born in Hungary.
- \_\_\_\_\_ 5 \_\_\_\_\_ Kati's mRNA experiment was a success!
- \_\_\_\_\_ 6 \_\_\_\_\_ Kati's research helped create the Covid-19 vaccine that saved lives.
- \_\_\_\_\_ 3 \_\_\_\_\_ Kati moved her family to the United States to learn more about mRNA.

Put a T for things that are true below, and an F if they are false.

- \_\_\_\_\_ F \_\_\_\_\_ Kati grew up very rich.
- \_\_\_\_\_ F \_\_\_\_\_ Every experiment that Kati tried worked.
- \_\_\_\_\_ T \_\_\_\_\_ Kati loved to run.
- \_\_\_\_\_ T \_\_\_\_\_ Changing one thing in an experiment can make a huge difference.
- \_\_\_\_\_ T \_\_\_\_\_ Kati got married and had a daughter named Susan.
- \_\_\_\_\_ T \_\_\_\_\_ DNA makes you have the same hair color as someone in your family.
- \_\_\_\_\_ T \_\_\_\_\_ Kati believes mRNA can cure or prevent many diseases.
- \_\_\_\_\_ F \_\_\_\_\_ A virus is the smallest unit that has all the basic properties of life.



# Worksheet #4 Answers

Name \_\_\_\_\_ Date \_\_\_\_\_

## LAB WORDS

A scientist often works in a laboratory, often called a lab. It is filled with special equipment with special names. Maybe you could have a scientist visit to show you some of the smaller things found in a lab of watch this video with your class: <https://www.youtube.com/watch?v=chODOKSPJS4>. Take a look at the pictures below and guess which words match the lab equipment.

Beaker

Flask

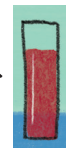
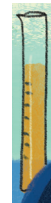
Graduated Cylinder

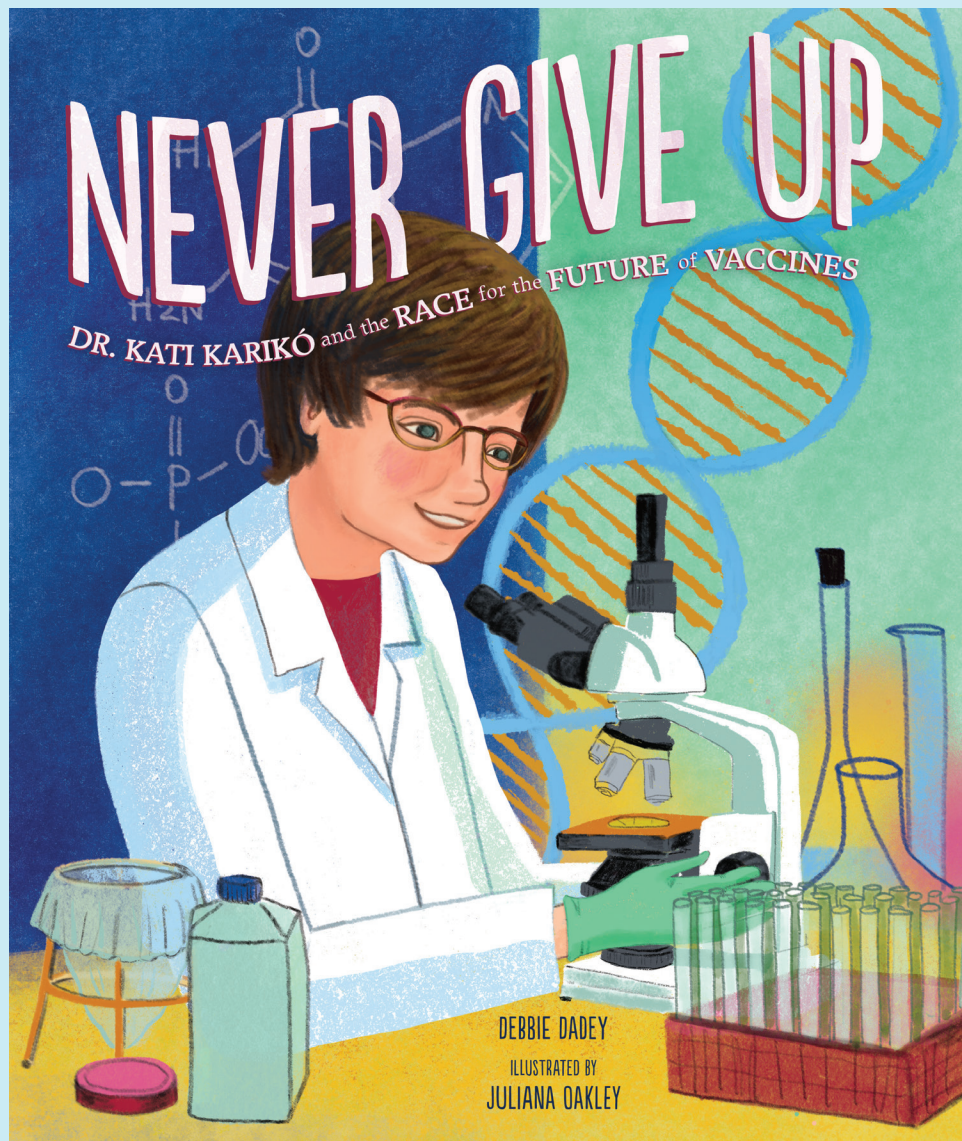
Goggles/mask

Microscope

Pipette

Test tubes





## Never Give Up: Dr. Kati Karikó and the Race for the Future of Vaccines

Ages 5-10 • LB: 978-1-7284-5633-1 \$21.99 (list) \$15.99 (S&L) • EB: 978-1-7284-8558-4 \$34.65 (list) \$25.99 (S&L)



**DEBBIE DADEY** didn't do very well in chemistry in high school, so she was pretty surprised when she married a chemist and her daughter became a scientist as well! When Debbie read an article about how Dr. Kati Karikó wouldn't give up on her mRNA research and how it led to a life-saving vaccine, Debbie said someone should write a book about Kati. "I'm an author," Debbie said. "Maybe I should write that book!" And so she did. Find out more about Debbie and her 182 traditionally-published books online at [debbiedadey.com](http://debbiedadey.com).