

# MAX EINSTEIN

**THE GENIUS EXPERIMENT**

Classroom Guide

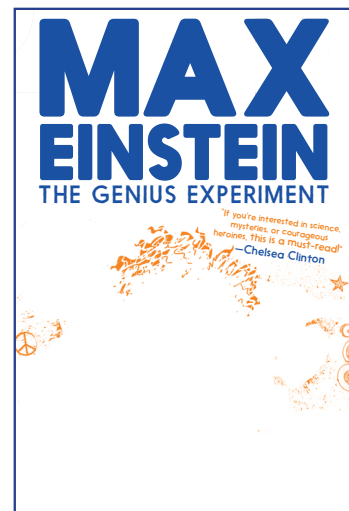




# MAX EINSTEIN: THE GENIUS EXPERIMENT

## Classroom Guide

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### Introduction to the Guide

Dear Educator,

It is time to take your students on a new kind of adventure! *Max Einstein: The Genius Experiment* is written by James Patterson, author of the Middle School Series, and National Book Foundation's 2015 Literarian Award winner for Outstanding Service to the American Literary Community. This is the book your students want to read.

Imagine one of your students has the opportunity to make the world a better place. That is exactly what Max does in this book. Max Einstein is a 12- year-old girl who is a genius. While Max uses her knowledge for good, this also causes some problems for her and others. There are two companies that are seeking her skills, the Change Makers Institute (CMI) and the Corp run by the evil Dr. Zimm. Max uses science, math, engineering, technology, and art to solve problems and frequently references her idol and imaginary pal, Albert Einstein. The possible themes in this book are endless and will get your students to deepen their own thinking about the world around them. Your students will want to learn more about how Einstein has influenced today's technological advances and take part in their own STEAM experiences.

The purpose of this guide is to interact with the fun and engaging *Max Einstein: The Genius Experiment* while enlightening your students' thinking through interdisciplinary activities that also connect to the Common Core Standards\*. Your students will learn all about Max and Albert Einstein and develop a special friendship with them. They will refer back to the book to remind themselves of all of Max's adventures in different countries. Creativity and a willingness to go deeper are a must when completing the activities. Students will take part in their own social science experiment learning about others and the effects of kindness. Discussion questions will allow students to see their world in connection with the story. This is the book for 21st century learners! Enjoy your adventure with Max Einstein!

\* Common Core Standards and activities may be adapted to fit your individual classroom needs, ages, abilities, and learning styles.

## INTERDISCIPLINARY ACTIVITIES

# Who is Max Einstein?

### ✓ English Language Arts

Max Einstein is the main character of the book. She has many positive characteristics that guide her journey, and these characteristics are revealed in significant events throughout the story. For example, Max shares her eagerness to create heat in the stables by using horse manure. Ewwww! But how creative and think-outside-the-box-ish of her! This is the first time we see Max as a scientist (**page 6**). Get students' artistic and left-brain juices flowing by having them create a timeline of significant events from the book that reveal Max's character. On the timeline, they can draw images that represent plot events and then name Max's characteristics that are revealed. Does Max have positive and negative characteristics like real people? Encourage students to discuss and explore!

Take Max Einstein outside of the classroom for a real-world experience and have students create a timeline about someone in their own family. How do their family member's characteristics compare and contrast with Max Einstein's?!

### **Common Core Standards**

CCSS.ELA-Literacy.CCRA.R.3

Analyze how and why individuals, events, or ideas develop and interact over the course of a text.

CCSS.ELA-Literacy.CCRA.W.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.



# The Curious Albert Einstein

✓ English Language Arts ✓ Art ✓ Social Studies

Albert Einstein is everywhere! The alarm that gets you out of bed each morning or the GPS that takes you on a new adventure. He is the scientist who has impacted the world we live in today. Max refers to Albert Einstein in everything she does and experiences throughout the book. She wants to know everything about him and uses his scientific discoveries and quotations to guide her thinking and actions. In this activity, the students bring Albert Einstein to life in their own classroom. They will become an expert on everything Albert Einstein (just like Max!). What did he like? What did he eat? What were his scientific discoveries? The students get to find out about the scientist who influenced the world we live in today. Challenge students to find out something that surprised or intrigued them about Albert Einstein.

Students research Albert Einstein using websites, videos, and books. Here are some topics to get them started, but remind them that their exploration of knowledge does not have to stop here. After all, just like Albert Einstein said, “The important thing is not to stop questioning. Curiosity has its own reason for existing.”

- Born/Died - timeline
- Family
- Schooling
- What was his most important achievement? Why do you think this?
- Most influential quote - why it speaks to you
- Fun “think outside the box” facts.  
Did you know Albert Einstein never wore socks?  
He hated that they would get holes in them.

Now's the time for the creativity to flow! Students create a model of Einstein using modeling clay, paper mache, aluminum foil, a plastic bottle or anything they can get their hands on. Somewhere on or in the model, they should include the information found out about Albert Einstein. They can use toothpicks, straws, or string with the information literally connected to it. Your classroom will be transformed into an information laboratory filled with Albert Einsteins!

## WEBSITES ABOUT ALBERT EINSTEIN:

- **Albert Einstein Biography**  
<https://www.youtube.com/watch?v=n4EjafCU5XY>
- **Albert Einstein Facts**  
<https://kids.nationalgeographic.com/explore/history/albert-einstein/>
- **Albert Einstein Facts**  
[https://kids.kiddle.co/Albert\\_Einstein](https://kids.kiddle.co/Albert_Einstein)

## Common Core Standards

CCSS.ELA-Literacy.CCRA.W.8

Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

CCSS.ELA-Literacy.CCRA.W.9

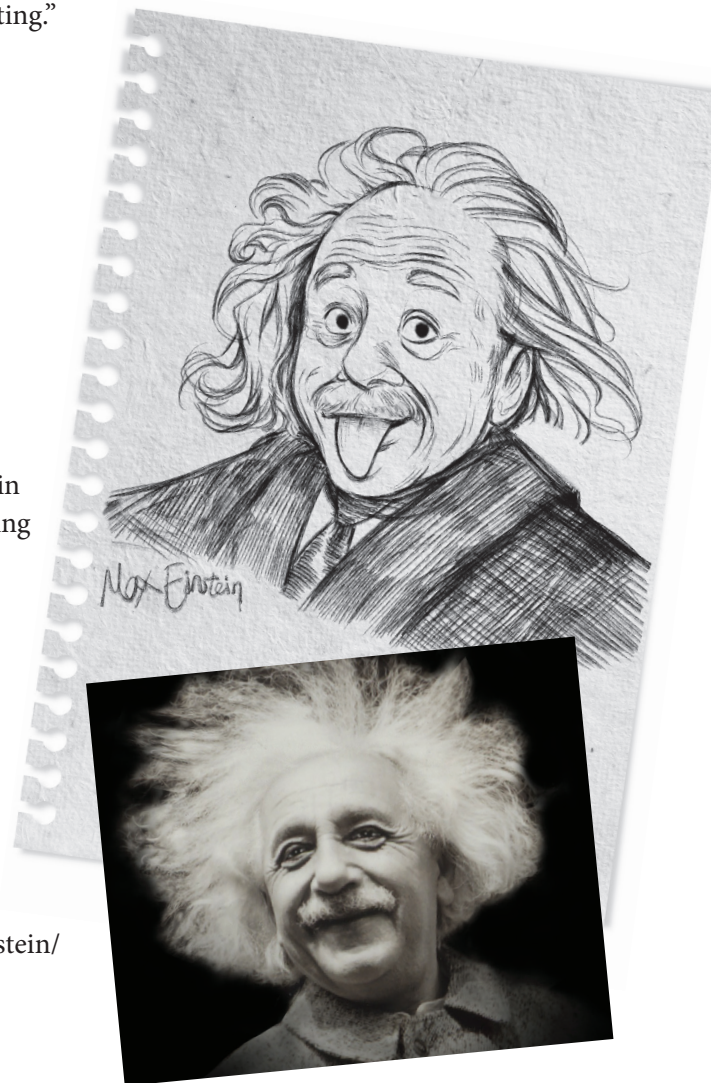
Draw evidence from literary or informational texts to support analysis, reflection, and research.

CCSS.ELA-LITERACY.RH.6-8.1

Cite specific textual evidence to support analysis of primary and secondary sources.

CCSS.SL.5.5

Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.





# Create a Commercial!

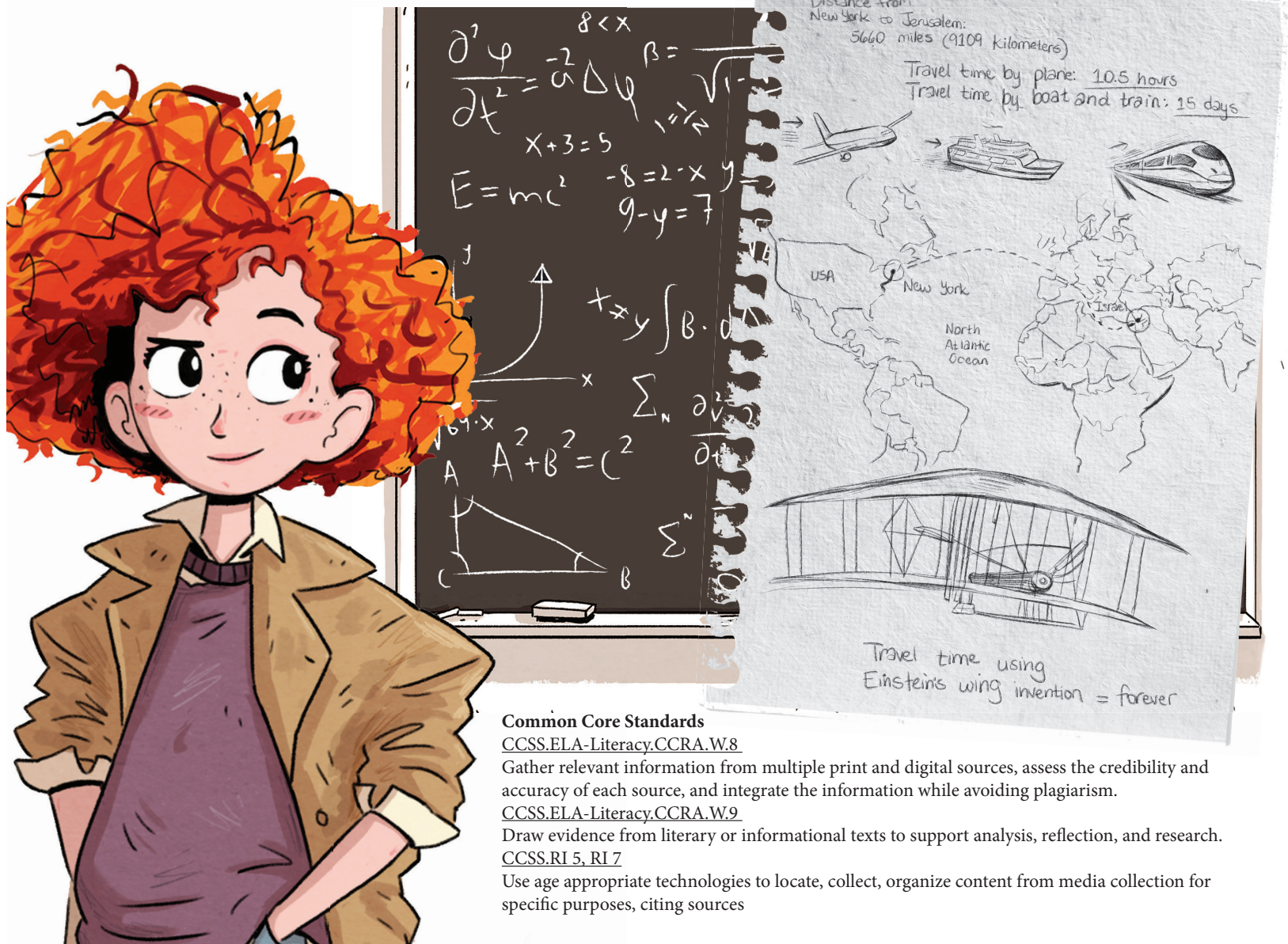
✓ English Language Arts    ✓ Technology

Max is flown to Israel and taken immediately to the Change Makers Institute (CMI) where she learns for the first time what they want with her. Here she gets to meet the other geniuses (Max's soon-to-be new friends) and together they visit and explore the Albert Einstein Museum (pages 129-131). Max is so excited to tour the museum of her hero and see the items that once belonged to her idol. Little does Max know, the evil Dr. Zimm has men waiting to collect her there! Luckily, Max is observant and she uses her knowledge of the museum to escape the people working for Dr. Zimm.

Just because Dr. Zimm's crew is trying to nab Max at the museum, it doesn't mean the museum is dangerous for all who visit. It's a treasure trove of Einsteins' archives and fascinating for all. Tell your students to get ready to debut their acting skills! They will persuade tourists and others to visit the museum all about Albert Einstein. Students will create a commercial for the Albert Einstein Museum that Annika and Max visit. The commercial should include the items the girls were looking at, which include 80,000 papers, artifacts, and treasures (page 129). Max and Annika also spend some time looking at letters, especially one written by a young child to Albert Einstein, suggesting he cut his hair. What a funny letter to include in a commercial! Encourage your students to get creative!

Here is the website to the Albert Einstein Museum in Israel. This can help students gather more knowledge about what will be in the museum.

<http://albert-einstein.org/>



## Common Core Standards

CCSS.ELA-Literacy.CCRA.W.8

Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

CCSS.ELA-Literacy.CCRA.W.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

CCSS.RI.5, RI.7

Use age appropriate technologies to locate, collect, organize content from media collection for specific purposes, citing sources

# Kindness Counts Experiment

✓ English Language Arts   ✓ Science   ✓ Math

Throughout the book, Max demonstrates her love of helping others. Students will have the chance to make a difference in the lives of others while participating in a social science experiment. They will get to change the world around them and see the power they have to make the world a better place.

➤ Brainstorm with students about the acts of kindness they have experienced/done/seen in school, at home, in public.

➤ Students can view one or both videos about kindness.

- Kid President - “How to Change the World with Kindness” by Naomi Mullane

<https://ed.ted.com/on/iT4P09VO>

- “Make Kindness a Habit” |

Sadie Zinn | TEDxYouth@AnnArbor

<https://www.youtube.com/watch?v=ir0B0pnfzY0>

➤ Students share the examples of kindness they heard from the videos, how they made them feel and how the videos connect to *Max Einstein: The Genius Experiment*.



Now is the time for students to see acts of kindness in action! Students will complete the Kindness Experiment worksheet with partners or in small groups to guide them through the experiment. Sentence prompts are provided to help spark their thinking. Begin by sharing with students the Focus Question “How do acts of kindness affect others?” and have them make a prediction that answers the question. Next, the students need a plan of action to complete the experiment. Students will carry out the plan and make observations of the acts of kindness they witness. Finally, students can look at their data and wrap up their experiment by making claims and evidence, concluding thoughts and reflecting. Encourage your students to see how this has changed the environment around them! When the experiment is complete, brainstorm with students small (or big!) ways to spread kindness in their worlds. The Focus Question below is provided to get your students started.

## Common Core Standards/Next Generation Science Standards

CCSS.Math.Practice.MP3

Construct viable arguments and critique the reasoning of others.

CCSS.3-5-ETS1-2 Engineering Design

Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

CCSS.RI.5.9

Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (3-5-ETS1-2)

CCSS.W.5.8

Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (3-5-ETS1-1),(3-5-ETS1-3)

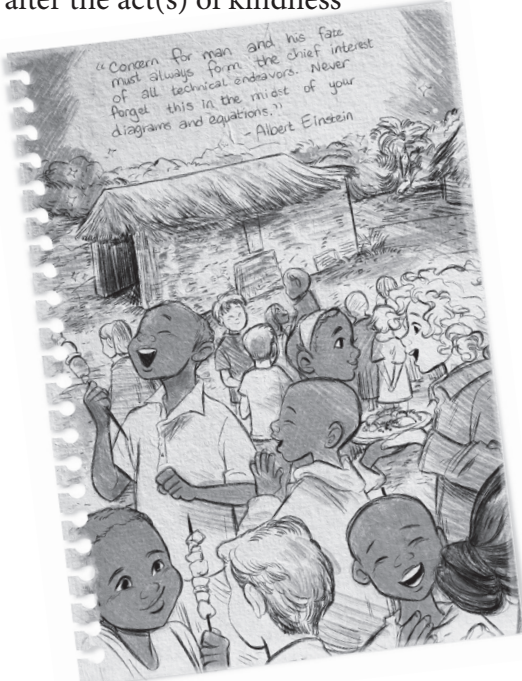


# Kindness Experiment

*Scientific Process*

Name \_\_\_\_\_

Date \_\_\_\_\_

<b>Focus Question</b> (What is it you are trying to find out...)	How do acts of kindness affect others?
<b>Prediction</b> (When people are kind to other people, I think _____ will happen, because _____.)	
<b>Plan</b> (Write out the step-by-step instructions for how you will find the answer to the Focus Question)	1.  2.  3.
<b>Observations</b> (pictures, tallies, data tables, diagrams, etc.)  Students carry a notebook for a week writing down what they observed before, during, and after the act(s) of kindness 	Before...  During...  After... _____  Before...  During...  After... _____  Before...  During...  After...

### Claims and Evidence

(I know \_\_\_\_\_ because \_\_\_\_\_.)

### Conclusion

(Today I learned \_\_\_\_\_.)

My prediction was correct, because \_\_\_\_\_

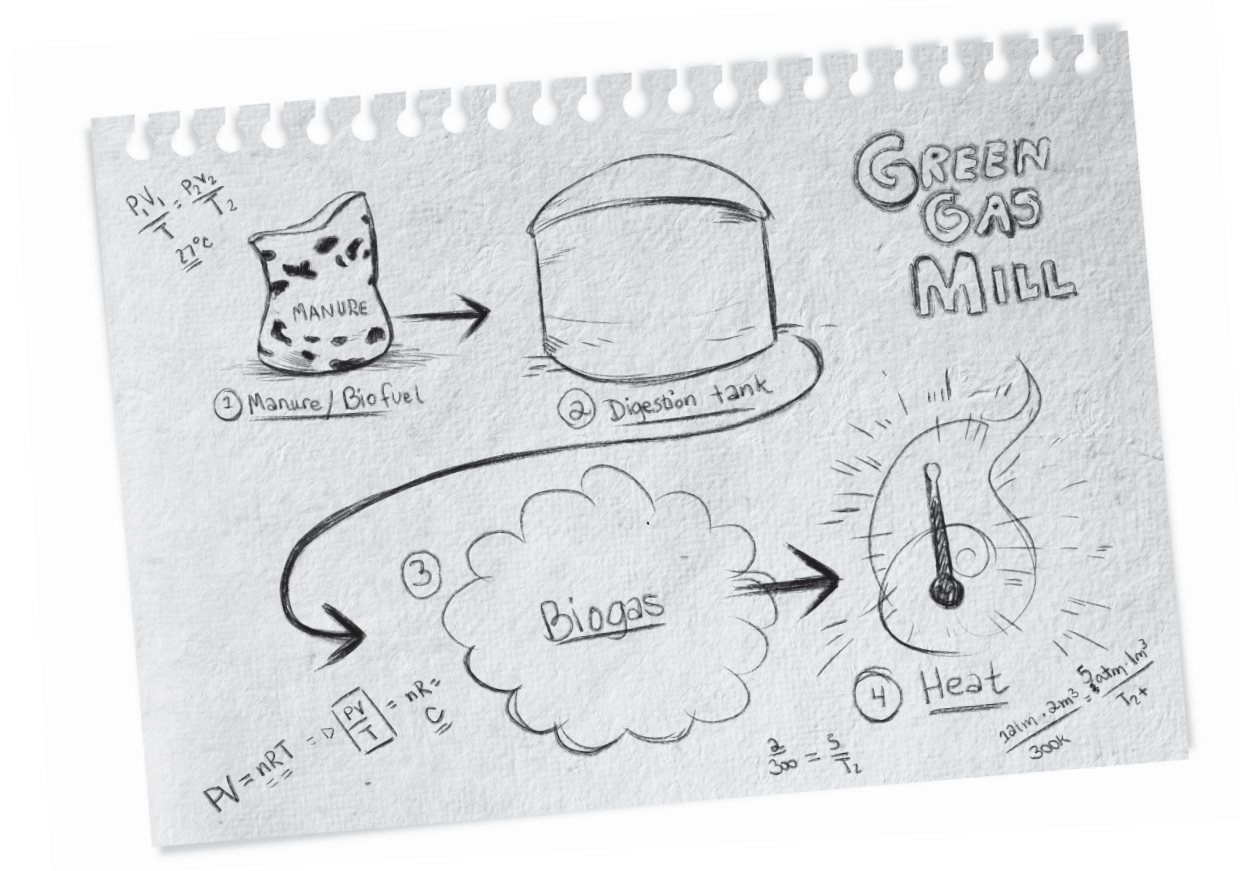
I need to revise my prediction, because \_\_\_\_\_.)

### Reflection

(I wonder if \_\_\_\_\_.)

Questions I now have \_\_\_\_\_

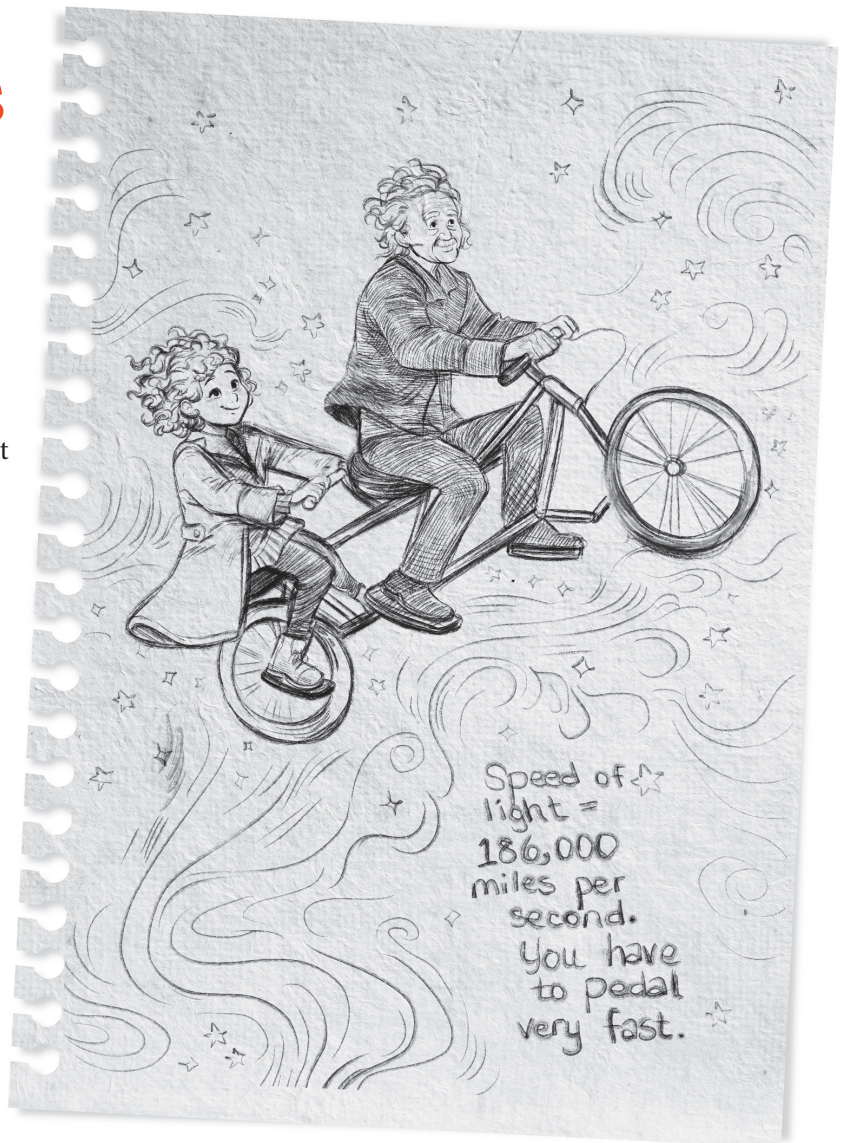
I used to think \_\_\_\_\_, but now I think \_\_\_\_\_.)





# Essential Questions

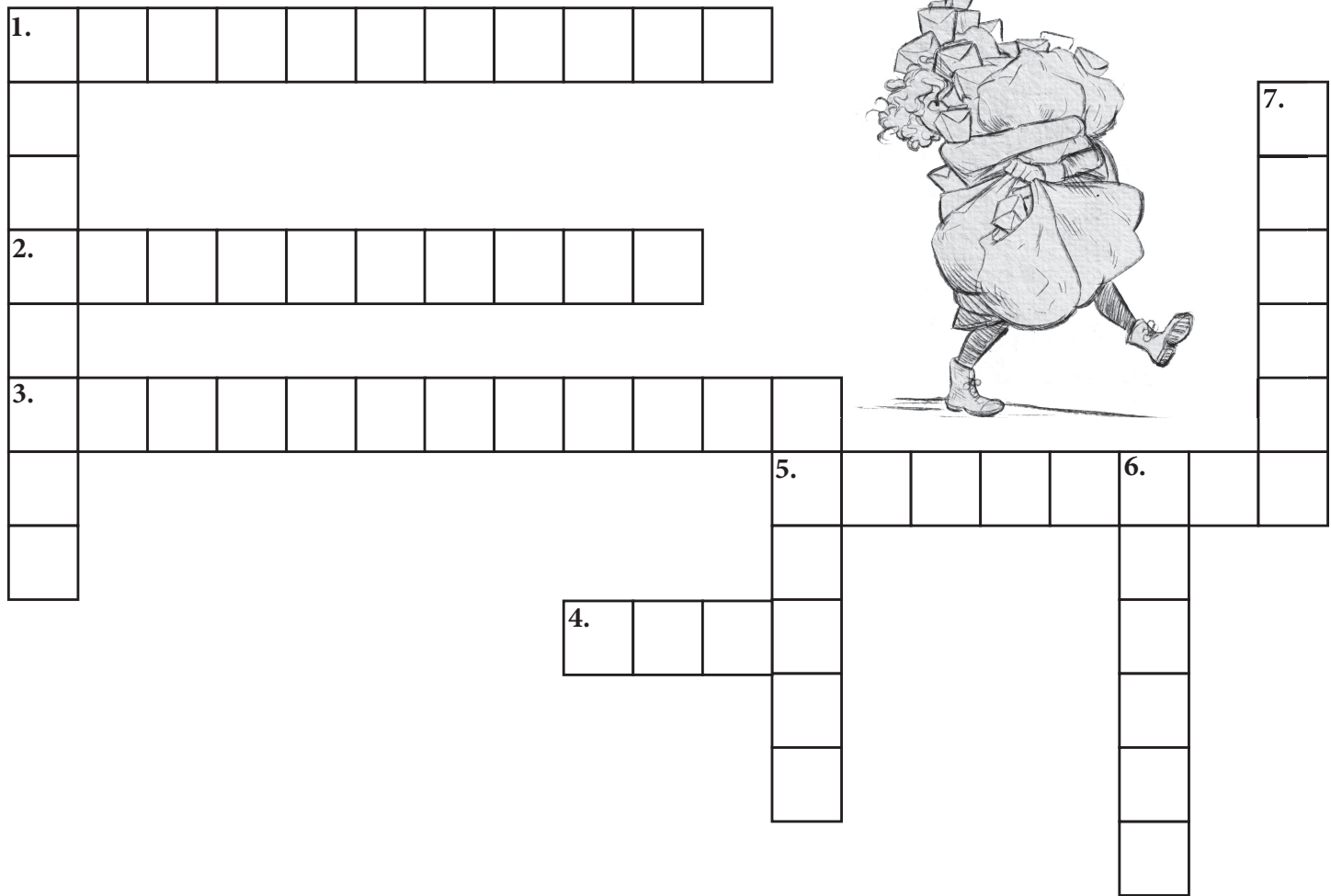
1. How does Max's homelessness affect how she treats others who are in the same situation?
2. Which Albert Einstein quotation from the book resonates with you the most? Why?
3. What is a crisis you know about in the world that you would like to fix? Why is this important to you?
4. How might you interpret this quotation: "Only a life lived for others is a life worthwhile"?
5. What do you think Dr. Zimm knows about Max's past? What clues make you think this?
6. Why do you think the author chooses to have the identity of Max's parents unknown to her? How does this affect the choices Max makes throughout the book?
7. Max helps Kabila and in return he helps her. How can you apply that to your life? When have you helped someone, and they helped you in return? How did this experience affect you or what did it teach you?
8. How does science affect your life for the better? When do you use science? How might science and creativity be connected? Has science ever had a negative effect on society or on people? Explain.
9. How could you create the best problem-solving team? What characteristics do you need from your teammates? What characteristics would you bring to the team?
10. What characteristics are necessary to be a leader? Which characteristics does Max possess? Are there any qualities about Max that you would change to help her become an even better leader? Why or why not?



# Max Einstein: The Genius Experiment

## Crossword Puzzle

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

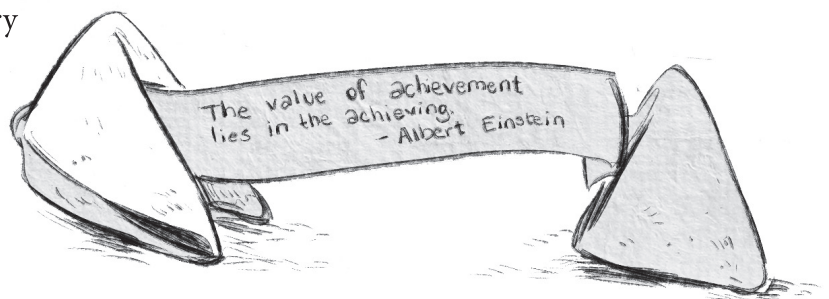


### Across

1. A thought experiment developed in a bunch of letters between Albert Einstein and \_\_\_\_\_ (pg 34)
2. Albert Einstein's Theory of \_\_\_\_\_ (pg 26)
3. We have cell phones and GPS thanks to the Theory of Relativity and \_\_\_\_\_ (2 words) (pg 26)
4. Laws of Motion state a body at \_\_\_\_\_ tends to stay at \_\_\_\_\_ (pg 22)
5. Max's hero: Albert \_\_\_\_\_

### Down

6. The "E" in  $E = MC^2$  stands for \_\_\_\_\_ (pg 47)
7. Rates of acceleration would depend on the mass of the objects attempting to move is Newton's 2nd Law of \_\_\_\_\_ (pg 38)





# Crossword Puzzle Answer Key:

## Across

1. Schrodinger
2. relativity
3. time dilation
4. rest
5. Einstein

## Down

6. energy
7. motion



## Sources

Albert Einstein Quotes. (n.d.). Retrieved from [https://www.brainyquote.com/quotes/albert\\_einstein\\_145949](https://www.brainyquote.com/quotes/albert_einstein_145949)

Biography. (n.d.). Retrieved from <http://www.jamespatterson.com/biography#.W25JQ5NKiCQ>

Klentschy, M. P. (2008). Using science notebooks in elementary classrooms. Arlington, VA: NSTA Press.

This guide was written by Room 228 Educational Consulting, with public school teacher Michelle Assaad as lead teacher. We, like Max, are big daydreamers!