



THE
MIRACLE SEED
DISCUSSION GUIDE

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EDUCATIONAL MATERIALS BY ANN D. KOFFSKY



About THE MIRACLE SEED

Summary: The true story of an ancient plant, reborn in the modern era through the hard work of two female scientists. Captivating and hopeful, this graphic novel is an unforgettable look at survival in the face of impossible odds.



About the creator: Martin Lemelman has illustrated over thirty children’s books and is the author-illustrator of the graphic memoirs *Two Cents Plain* (Bloomsbury) and *Mendel’s Daughter: A Memoir* (Free Press). He hopes that *The Miracle Seed* inspires his granddaughters and other young women to ask hard questions about the world and persevere in the fields of science, technology, engineering, and math. Martin lives in Florida, where he is a certified Florida Master Gardener. Visit Martin’s website at lemelmanart.com and follow him on Twitter @MartinLemelman.

THEMATIC CONNECTIONS

- Life Science / Plant Development
- Ancient Civilizations / Revolution
- Visual Storytelling
- Cultural Heritage / Judaism
- Resilience / Persistence
- Geography / Israel



PRAISE FOR *THE MIRACLE SEED*

- JUNIOR LIBRARY GUILD SELECTION (2023)
- PJ LIBRARY SELECTION (2023)
- EVANSTON PUBLIC LIBRARY BEST BOOKS FOR KIDS (2023)
- *TABLET* BEST JEWISH CHILDREN’S BOOKS (2023)

“Students interested in science will be fascinated by this unique blend of ancient history and modern science, skillfully combined in an easy-to-understand, easily navigable graphic novel.”

—*Kirkus Reviews*
(starred review)



Vocabulary

Read the words below. Have you heard any of these words before? Now look out for them as you read the story. If you don't already know their meaning, see if you can figure them out: Look at the words around them—does that help you understand them? What about the pictures they are next to?

For example, the book describes the date palm as *extinct* with “not even one left in the world.”

How do those words help you understand the definition of *extinct*?

Try that strategy out for the other words on the list too.

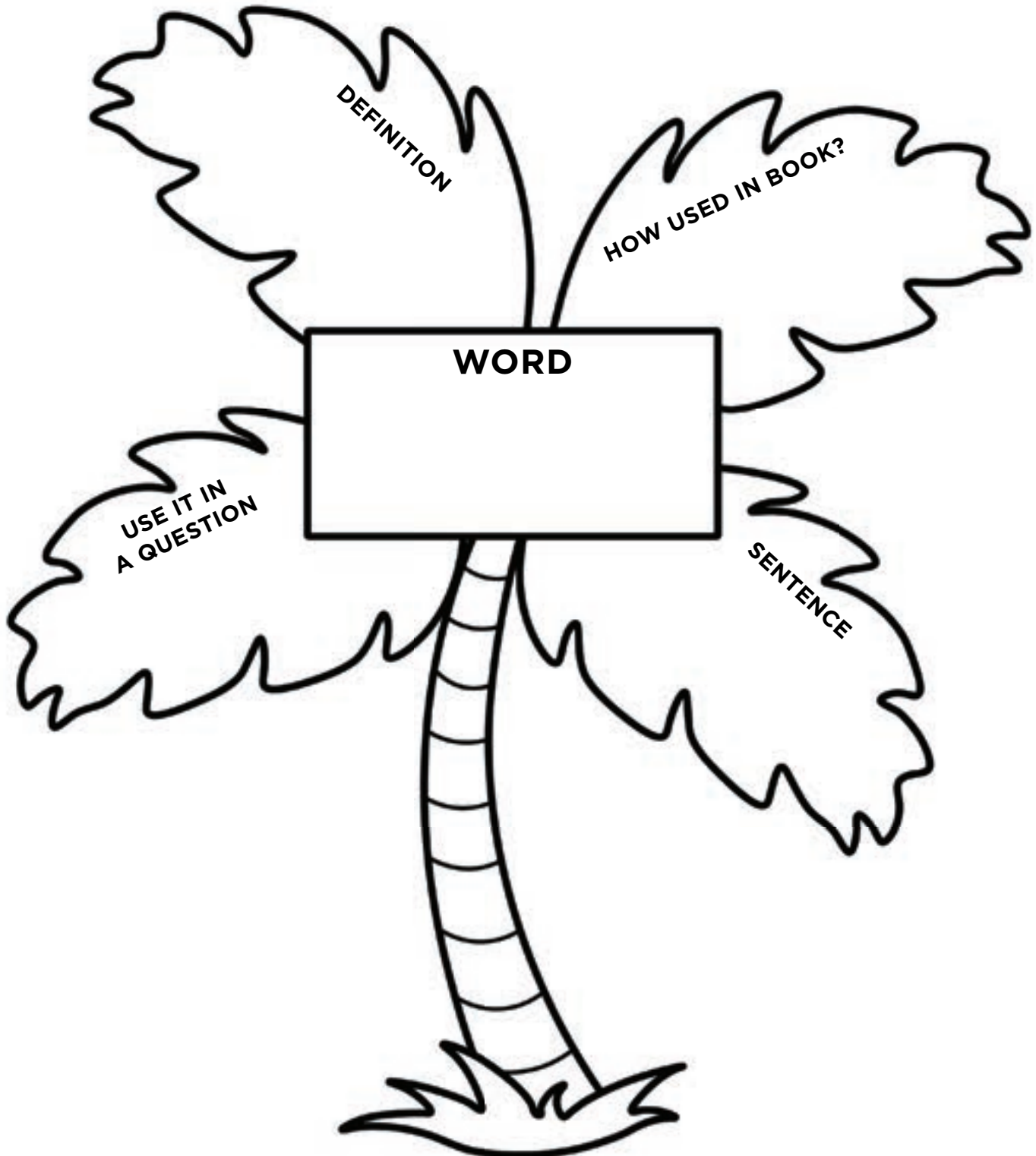
- Ancient
- Archaeology / Archaeologist
- Climate
- Extinct
- Generations
- Harvest
- Jewish
- Menorah
- Miracle
- Pollen/Pollination
- Rebellion
- Rebirth
- Research
- Sprouts
- Tyranny

Afterwards, look up the words on the internet or in a dictionary. What strategies did you try to help you better understand what they meant? Which worked best?

Activity / Writing

Select one of the words from the list on the previous page and write it in the center box. Then on the palm leaves, write:

- Its definition
- A question using it
- A sentence using it
- A question using it
- A description of how it was used in the book





Discussion Questions

Storytelling

Martin Lemelman chose to tell the story of *The Miracle Seed* as a graphic novel. Graphic novels use a combination of pictures and words.

- How does a graphic novel compare to other kinds of books you've read before? How does its storytelling techniques compare to other types of formats like movies or short videos?
- Have you read other graphic novels? Which ones? Were those also nonfiction like this one, or fiction? What else was similar or different?

Two Stories: One Ancient, One Modern

The Miracle Seed tells two stories: the disappearance of the Judean date palm in ancient times, and its rebirth in modern times. Name the clues in the text or art that you used to help you reach your answer.

The Ancient Story

- Had you heard of ancient Rome or Israel before reading this book? What did you know about them?
- What new information do you now know about both ancient Rome and Israel?
- What was the reason for the battle of Masada? Why were the Romans fighting? Why were the Jews fighting?
- What emotions does the book show the ancient Jews feeling at the end of the battle?

The Modern Story

- Why do you think the team of archeologists wanted to dig at Masada?
- Why did they put the objects they found in Masada's dirt on display in a museum? Why would people want to see them?
- What made Dr. Sallon and Dr. Solowey want to work so hard to bring the seeds back to life, and grow a new date palm? Why was it important to them?
- How do you think Dr. Solowey and Dr. Sallon felt when they tasted the first fruit from their date palm tree?

What clues in the words or pictures did you use to help you answer the questions above?

Discussion Questions (cont.)

The Narrators

The book has two characters, a boy and a girl, who are used in both the modern and the ancient parts of the story.

- How does Lemelman use the boy and girl to tell the story? What is their “job” and relationship to the reader?
- Notice how they interact with each other and the other characters. Do they talk to each other? To the ancient Jews or modern scientists? Why do you think Lemelman made those choices?

Symbols

Lemelman uses Jewish symbols in *The Miracle Seed* several times to add layers of meaning to the text.



BEFORE THEM THE BRACK OF FIRE—
A BURNING CANDLESTICK OF THE REMEDIATION
OF THE SACRED TEMPLE IN JERUSALEM.

AFTER THEIR DEFEAT BY THE ROMANS, THE JEWISH PEOPLE WERE
SCATTERED THROUGHOUT THE WORLD. THEY LIVED IN EVERY COUNTRY—
A PEOPLE WITH NO LAND TO CALL THEIR OWN.

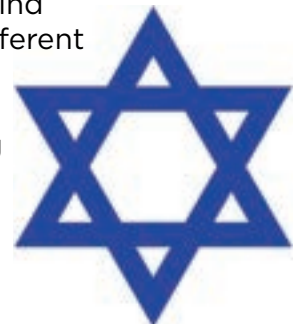


THEY ENDURED TERRIBLE TRIALS, YET THROUGH IT ALL, THEY SURVIVED...

For example, the *menorah* is an ancient Jewish symbol. It appeared on ancient Jewish coins and is the modern state of Israel’s national symbol. (See links to more information about the menorah in “Want to Learn More?” at the end of this guide.)

Lemelman uses it twice on the page to the left. What ideas do you think Lemelman has added to the meaning of the story by using this symbol in these two ways?

The Jewish star is another famous symbol. It is part of the flag of modern Israel, and many synagogues across the world include it in their buildings. Lemelman included the Jewish star several times in the book. Find them and compare their different uses. What meaning do you think Lemelman has added to the story by using that same symbol in such different ways?

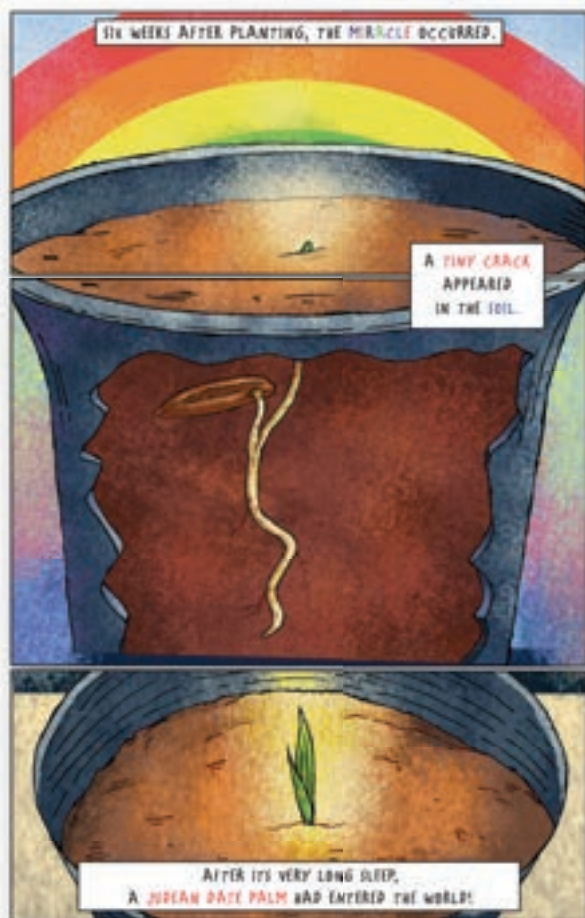


Discussion Questions (cont.)

Color

Like symbols, color can also be used to add layers of meaning to images.

What ideas do you think Lemelman has added to the meaning of the story through his use of color in the pictures below?



Look through the book and find other places where Lemelman used color in non-literal ways. In what ways did his color choices add meaning to the story?

Visual Tools

In many places Lemelman uses different kinds of containers to frame text in this book: sometimes a rectangle, sometimes a speech bubble. Below are some of them.

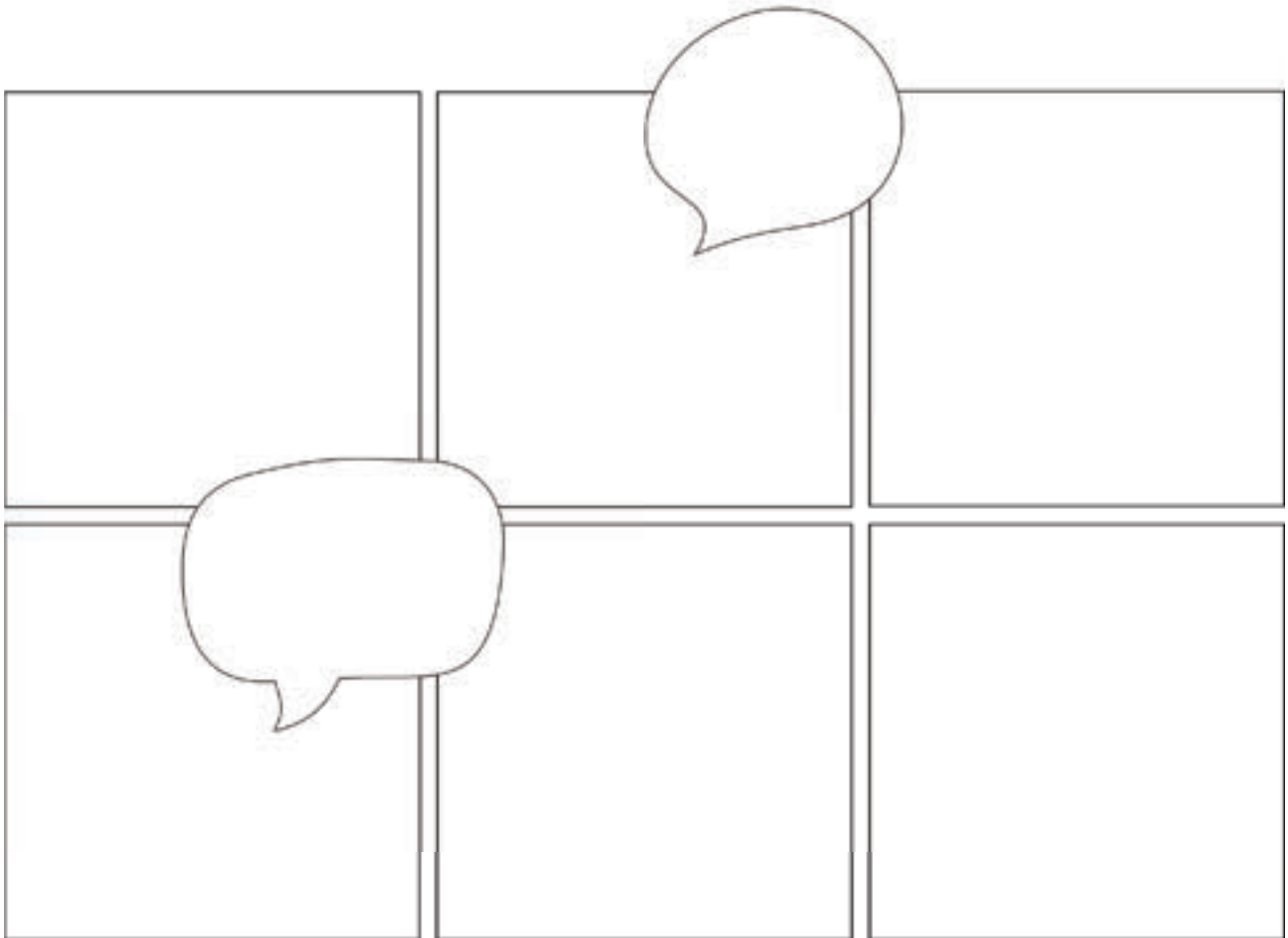
With a partner, look at each container and the text inside it. Find other examples of the same kinds of containers in the book. What patterns do you notice? When are certain types of containers used? How does Lemelman use them to help the reader understand the story?



Activity / Worksheet

Comic Strip: Imagine you are writing the sequel to this graphic novel. Use words and pictures to create its first page.

- Which visual tools (such as rectangles or speech bubbles) do you want to use?
- What happened next in this story? To the seeds? To the trees? To the scientists?



Cultural Connections



In this story Dr. Solowey and Dr. Sallon both incorporated ideas from their cultural heritage—Judaism—into their work. For example, they chose to give the trees names from the Hebrew Bible, like Hannah and Methuselah, instead of modern names like Robert or Susan.

How else did the scientists bring ideas from their Jewish heritage into their work?

Why do you think the scientists wanted to connect their heritage to their scientific work?

Activity / Art

Create a Tu B'Shvat poster: In the story, Dr. Solowey chooses to plant the three seeds on the Jewish holiday of Tu B'Shvat, the Jewish New Year of Trees. Research and find out more about the Tu B'Shvat holiday,

and then make a poster that describes it. Think about: what pictures or symbols should your poster include? What words? What colors?

Social Studies Connections

Activity: Explore the Globe

Find (modern day) Israel on a map or globe. Research and learn more about Israel and two locations inside Israel: Jerusalem and Masada.

Look at a map of the ancient world that shows the Roman Empire and ancient Israel. Compare the two. What do you notice about each of them?



The Western Wall, Jerusalem



Science Connections

There are many other plants that have gone extinct over the centuries. (You can read about them in the *New York Times* article in “Want to Learn More?” on the last page of this guide.) Think of reasons why plants disappearing from the world is problematic. What is lost when they are no longer around?

Why did Dr. Solowey reach out to Dr. Sallon for help, and not just plant the seeds herself?

After Dr. Solowey and Dr. Sallon harvested their first dates, the book says “that wasn’t the end of the tale of the Miracle Seed—only the beginning.” Why was it just the beginning? What was there still left to do?



Activity / Writing Prompts

Interview a family member or other trusted adult who likes to garden. Maybe your grandmother loves to nurture indoor flowers; maybe your neighbor grows huge tomatoes each summer. How did they choose what to plant? What kind of care do they give their plants? How does their plant care compare to Dr. Solowey’s? Write up a summary of what you discover from your conversation, and share it with your class.

If you had a chance to grow something, what kind of plant would you choose? Why? How would you care for it? What would it need in order to thrive? How can you find out information to help you answer these questions?

Activity / Writing

Step by Step: The book describes how it took the scientists 15 years, and many steps, to go from seed to fruit. It was a major achievement.

What would you like to accomplish in your own life?

Is there something challenging that you'd like to do? Think about the steps along the way that will help you achieve your goal.

Write your goal on the top rung.

Then starting on the bottom rung, write the step-by-step tasks you need to do to reach your goal.





Want to Learn More?

For more about Tu B'Shvat:

<https://www.myjewishlearning.com/article/tu-bishvat-ideas-beliefs/>

https://www.jnf.org/blog/environment/everything-to-know-about-tu-bishvat-the-original-earth-day?utm_source=googlegrant&utm_medium=cpc&utm_campaign=Blog&s_src=Google_Grant_Blog&gclid=Cj0KCQjwslejBhDOARIsANYqkD19_OOiYRRDL0U7Vsm9wBSQLgbFgnWfY0Ven2A6ALyEx1vSxHLCJeQaAtRIEALw_wcB

For more about Masada:

<https://en.parks.org.il/video/video-nap-masada-israel/>

For more about the menorah, and the Roman Arch of Titus:

<https://www.yu.edu/cis/activities/arch-of-titus>

<https://jewishaction.com/jewish-world/israel/on-and-off-the-beaten-track-the-menorah-official-symbol-of-the-state-of-israel/>

https://en.wikipedia.org/wiki/Emblem_of_Israel

For more about other plants that are extinct:


<https://www.nytimes.com/2020/10/16/science/plants-extinction-north-america.html>

For more about this story:

<https://www.smithsonianmag.com/history/sweet-sticky-history-the-date-180980983/>

To help you identify plants in your neighborhood, try this app:

<https://apps.apple.com/us/app/plantnet/id600547573>



If you liked this graphic novel, you might also like these:

Durkin, Frances. *Histronauts: A Roman Adventure*. Mendota Heights, MN: Jolly Fish Press, 2019. Explores Roman history through a time travel adventure.

Kerbel, Deborah. *Fred & Marjorie: A Doctor, a Dog, and the Discovery of Insulin*. Illus. Angela Poon. Montreal: Owlkids, 2021. Follows doctor Frederick Banting as he researches and develops a lifesaving treatment for diabetes.

Kimmel, Eric. *Shield of the Macabees: A Hanukkah Graphic Novel*. Illus. Dov Smiley. Millburn, NJ: Apples & Honey Press, 2021. Tells the fictional story of a friendship between two boys, one Jewish and one Greek. It is set in ancient Israel in the year 165 CE—about one hundred years before the events of this book take place.

Ottaviani, Jim. *Hawking*. Illus. Leland Myrick. NYC: First Second, 2019. Tells the story of physicist Stephen Hawking and his scientific work.

Varnai, Sara-Ester. *At Masada*. Israel: KDI, 2015. Travels back to the fortress of Masada alongside two kids from modern times.



About the creator of this guide



Ann D. Koffsky has written and illustrated over forty children's books, including *What's in Tuli's Box?* (Apples & Honey), *Sheep Says Shalom* (Green Bean), and the *Kaya and Kugel* series (Apples & Honey). Several of her books have been PJ Library selections, and *Noah's Swimathon* (Apples & Honey) was named a Sydney Taylor Notable Book. Ann lives in West Hempstead, NY, with her family. Follow her on Twitter and Instagram @JewishArtbyAnn.