
Fungi Are...

More than Mushrooms

Written by Alisha Gabriel

Illustrated by Vivien Sárkány

Teacher's Guide



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About the Book

The covert lives of fungi are full of wonder, because there's more to fungi than the mushrooms we see. From single-celled, microscopic yeasts to massive mushrooms, fungi are essential to life on our planet.

With a lyrical first layer and descriptive second layer, readers will be transported into a whimsical world where spores disperse, fungi grow, animals find food, bees heal themselves, and trees talk to one another, all because of this fascinating Kingdom of organisms.

Written by Alisha Gabriel
Illustrated by Vivien Sarkany
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Mushrooms and Fungi



Sales from this book support reforestation and the Central Texas Mycological Society.

About the Author

Just as Fungi Are...More Than Mushrooms, Alisha Gabriel is more than just a children's book author. She's also an elementary music teacher! Alisha is an author, teacher, and speaker who loves giving author visits at schools and libraries. She's the author of several books, including the award-winning Funky Fungi: 30 Activities for Exploring Molds, Mushrooms, Lichens, and More, co-authored with Sue Heavenrich, which won the 2023 AAAS/Subaru SB&F Book Prize for Excellence in Science Books.

About the Illustrator

Vivien Sárkány is an artist based in Budapest, Hungary. She has illustrated several other books for children, including Lovey and Me: Do Everything Together and Paco the Octopus: A Tale of Perseverance.



Note from the Author

Did you know that there's more to fungi than mushrooms?

All mushrooms are fungi, but not all fungi produce mushrooms. About 20,000 species of mushrooms have been discovered and named, but scientists estimate that there are at least 1.5 million species of fungi, probably more. So, even though mushrooms are highly visible, they probably represent less than 1% of the fungi on our planet!

It's true that mushrooms seem to magically bloom in fascinating colors, shapes, and sizes, but what about the fungi we don't see?

Most fungi are microscopic and aren't visible without equipment to magnify them. But you may have seen some fungi without realizing it. If you found a moldy piece of food, or mildew in the corner of the bathroom, you'd be looking at a fungal colony.

In cases like these, the fungi grew, reproduced, and spread enough for you to take notice.

Since 99% of fungi are microscopic and don't produce mushrooms, scientists believe there could be millions of species of fungi below our feet that haven't yet been discovered. Researchers are finding new species every year, which means there's plenty left to discover.

Who knows? Maybe you'll find some, too!

Before Reading

For Younger (K-2):

Tell students they'll be reading a book about fungi and ask what they think fungi are. Either write their ideas on chart paper or allow them to make a drawing.

Show them the cover of the book. Now what do they think fungi are? They'll probably say mushrooms. Read the title aloud and allow them to predict what might be in the book.

Read the book aloud. At the end, ask them to tell you something important about fungi. Next, allow students to draw a picture of one type of fungi and use the sentence stem "Fungi are ____" to describe their art.

For Older (3-5):

Based on the title, ask students what they think the book is about. Write their ideas on chart paper.

In small groups, ask students to discuss:

- What part fungi play in the food web
- What makes a living organism a fungus instead of a plant
- Why fungi are important to our world

After Reading

Create a Trivia Game

Break students into small groups and pass out a different colored paper to each group. Each group should choose 3-4 interesting facts they've learned about fungi, then turn them into questions.

Cut the questions into separate strips of paper and put them into a box or bag. Each group then chooses a question and tries to answer it.

If they draw a question they created, they put it back and draw again. See which group can answer the most questions in the time you choose. Allow students to use the book to answer the questions.



Language Arts Activities

Shape Poems (i.e., Concrete Poems)

Show students a shape poem and read it aloud. Shape poems can be free verse, which means that they don't have to rhyme, and the meter does not need to be perfectly paced. It's more important to use vivid language to describe the topic and to use words to form a shape related to the topic. The shape can outline an object, leaving the center blank, or the words can fill the space within the shape.

Ask students to brainstorm the shape they will use. Since fungi are integral to our world, the shapes could be a loaf of bread, a home, a tree, a nest, and so much more. Encourage students to focus their words on the fungi that fits the shape they've chosen. When finished, post the poems and allow students to do a gallery walk to view the finished products.

Sentence Stem Writing Prompt

Now that students have read *Fungi are...More Than Mushrooms* and are familiar with the text structure, use the first layer structure as a writing prompt. Encourage students to choose a topic they know well and then focus on a narrow aspect of the topic. Ask them to come up with three descriptive words about their topic.

Ex. Fungi are travelers. They burst, fling, and grab.
Sentence stem: ___ are/is ___. They ___, ___, and ___.

Ex. Books are important. They inform, teach, and entertain.

Science Activities

Observing How Yeast Makes Bread Rise

Materials Needed (See *Note about doubling ingredients for a compare/contrast element):

- 2 ½ cups all purpose flour
- 1 packet instant yeast (7 g)
- 1 tsp sugar
- ½ tsp salt
- 2 Tbsp cooking oil
- 1 cup warm water (not boiling)
- Mixing bowl, measuring cup, measuring spoons, and spatula
- Bread pan and towel to cover (or clear plastic wrap to allow observation)

Directions:

1. Pour yeast into warm water and stir.
2. Mix together the dry ingredients.
3. Pour yeast mixture and oil into the dry ingredients and mix well.
4. Knead the dough for 4-5 minutes until smooth.
5. Put the dough in the bread pan and cover with a tea towel for about 30 minutes. The dough should double in size.
6. When it reaches the rim of the pan, bake for 40 minutes at 400 degrees.

During this experiment, allow students to measure and combine the ingredients. They should notice that the yeast in warm water begins to look frothy. Once all of the ingredients are combined, ask students every ten minutes what they notice as the dough rises.

*Note: If you have enough ingredients to make two loaves of bread, you can add a compare and contrast element to this activity by making one with yeast and one without.

Engineering and Math

Build a Slingshot (take photos)

The hat-thrower fungus disperses its spores by building up pressure and shooting them out like they're shot from a slingshot. This activity recreates the motion.

Before beginning, set some class rules to keep everyone safe. Set an empty space as the target zone. Place a starting line on the floor.

No one should point the slingshot at one another, or shoot into the target area while others are there.

Students should only use objects the teacher chooses because other objects could hurt someone or something.

Materials:

- Empty plastic bottle
- Scissors
- Balloon
- Rubber Band
- Cotton balls, mini pompoms,
- pumpkin seeds or sunflower seeds, and other small lightweight objects **(be careful!)**.



Directions:

1. Remove the bottle cap.
2. Cut the top off the bottle at about the shoulders. The top piece should be no more than the length of an index finger. Set aside the bottom of the bottle.
3. Stretch the balloon, then put the blowing end over the drinking end of the plastic bottle.
4. Secure the balloon to the bottle with a rubber band.
5. Place one of the small objects in the cup of the plastic bottle.
6. Pull back on the balloon, then release it to shoot the object into the target area.
7. After sending a few items into the target area, measure the distance from the starting line to each of them. Use yardsticks, rulers, or anything else you have on hand.
8. As a class discuss which went the farthest? Why do you think that is?

Does the angle of the slingshot make a difference? What about the weight and/or size of the object? If you repeat the experiment, can you measure the height, too? Would turning on a fan make a difference?



Nature Walk and Mini-Journal

Print out a copy of **My Nature Walk Journal** (see following page for template/printout) for each student.

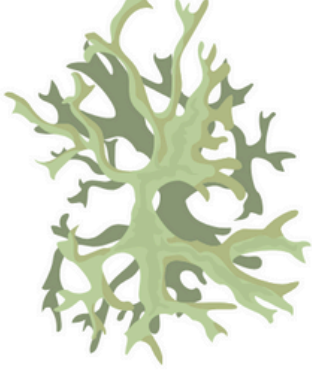
Have students fold it in half longways, then fold in half again to make a small booklet. When folded correctly, “My Nature Walk Journal” will be on the front and “Here are some places you may find fungi” on the back.

Scout out some locations within walking distance to find trees or boulders with lichens. Read through the booklet with students before going, and be sure they take a pencil (optional: colored pencils). Allow students to explore and take time to sketch their discoveries.





Looking for Lichens: A lichen is a fungus that lives symbiotically with algae or cyanobacteria that often looks crust-like or scaly. Look for lichens on stones, tree bark, or on branches that have fallen to the ground. Make note of any lichens you find and make a drawing to the right.



Here are some places you may find fungi:

- Boulders
- On trees and branches
- Under trees near the trunk
- Stumps
- Grassy meadows
- Nature trails
- Fallen logs
- Gardens and Mulch
- Moldy fruit
- Moist showers



I observed a lichen and here is what I saw:

Music Activity

Sing this Mushroom Song to the tune of Down by the Station.

Mushroom Song

Lyrics by Sue Heavenrich
Folk Song Tune: Down by the Station



Out in the front yard, just a-bove the gar - den,



See the litt - le mush-rooms stan - ding in a row.



Down comes the rain and up sprout the fun - gi.



Each by it-self but co-nnec - ted down be-low.

Related Reading

- Gabriel, Alisha and Sue Heavenrich. *Funky Fungi: 30 Activities for Exploring Molds, Mushrooms, Lichens, and More*. Chicago Review Press, 2022.
- Gianferrari, Maria and Diana Sudyka. *Fungi Grow*. Beach Lane Books, 2023.
- Gravel, Elise. *The Mushroom Fan Club*. Drawn and Quarterly, 2018.
- Zimmerman, Laura K. and Jamie Green. *Mushroom Rain*. Sleeping Bear Press, 2022.

Ordering Information

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For additional sales inquiries and questions, contact:
sales@tielmourpress.com