

Learning Guide



Balloons

We hope you enjoyed learning all about the history, science, and applications of ballooning, as well as what happens when latex balloons get released into nature. Extend your learning with this print-ready Learning Guide!



What's in this Learning Guide?

Get Set to Listen:

Check your knowledge before and after listening to the episode by determining if statements are TRUE or FALSE.

Vocabulary

Discussion Questions

CCSS.ELA-Literacy.SL.3-8.1; CCSS.ELA-Literacy.SL.3-8.3

Writing Prompts and Extension Projects

CCSS.ELA-Literacy.W.3-8.1; CCSS.ELA-Literacy.W.3-8.2; CCSS.ELA-Literacy.W.3-8.3; CCSS.ELA-Literacy.W.3-8.4; CCSS.ELA-Literacy.W.3-8.7; CCSS.ELA-Literacy.W.3-8.8

Poetry Takes Flight

CCSS.ELA-Literacy.W.5-8.3.d

Additional Resources and Book List



The Children's Hour
kids public radio



Get Set to Listen

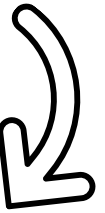
1. Before listening!

Read each statement and write TRUE or FALSE based on what you already know.



2. After listening!

Based on what the experts said in the episode, write TRUE or FALSE.



Before Listening	TRUE or FALSE?	After Listening
	1. The first hot air balloon was made of paper and linen and was heated with an open straw fire.	
	2. A hot air balloon rises because the air inside is hotter and more dense than the air outside.	
	3. The first hot air balloon passengers were a duck, a chicken, and a sheep.	
	4. Weather balloons start out measuring 20 ft. wide, but they shrink to 6 ft. or less as they rise.	
	5. Gas balloons were popular in the 1700s and 1800s, but today hot air balloons are more common.	
	6. Weather balloons are launched twice daily from nearly 90 sites worldwide.	
	7. About 20% of radiosondes from deflated weather balloons are returned to the National Weather Service by people who find them.	

What did you learn?



Get set to listen.

Answer key

1. TRUE
2. FALSE. A hot air balloon rises because the air inside is hotter and **less** dense than the air outside.
3. TRUE
4. FALSE. Weather balloons start out measuring 6 ft. wide, but they **expand** as they rise, reaching 20 feet in diameter.
5. TRUE
6. FALSE. Weather balloons are launched twice daily from nearly **900** sites worldwide.
7. TRUE



Vocabulary

gas balloon	a balloon filled with a light gas, like helium, that makes it float in the air. It doesn't need heat like a hot-air balloon to rise.
hot-air balloon	a type of balloon that rises and floats in the air when the air inside it is heated. The warm air is lighter than the cooler air outside, which makes the balloon lift off the ground.
envelope	the fabric part of the balloon that holds the hot air
burner	the system that heats the air inside the balloon to make the balloon rise
basket (a.k.a. gondola)	the carrier for passengers and equipment
weather balloon	a special balloon that carries instruments high into the sky to collect information about the weather, such as temperature, humidity, and air pressure.
radiosonde	an instrument attached to weather balloons to measure pressure, relative humidity, and temperature



Discussion Questions



1. Why does a hot air balloon float in the sky?
2. What happens to the air inside the balloon when it gets heated?
3. How do pilots control how high or low a balloon goes?
4. Do you think early balloon flights were dangerous? Why or why not?
5. If you could ride in a hot air balloon anywhere in the world, where would you go and why?
6. What would you bring on a long balloon trip?
7. How would you feel if you were in a balloon high above the ground?
8. Do you think ballooning could ever become a way to travel again? Why or why not?
9. Given the harm they cause to animals and the environment, do you think that releasing latex balloons should be illegal? Why or why not?
10. Why do you think weather balloons go so high up in the sky?

Group Discussion Strategies

Think Pair Share:

1. Individually, student writes down their answer to a question.
2. Students pair up and tell each other their answers.
3. Teacher calls for volunteers to share with the whole class their answer (and/or their partner's answer). Teacher notes key words/phrases on board.

Round Robin:

1. Teacher poses one question (written on top of a large page) to students, who are assembled into small groups of 3 or 4.
2. Students take turns brainstorming the answers. The recorder of the group writes down all answers.
3. The leader reads the group's ideas to the entire class. Teacher moderates.



Writing Prompts

Narrative Writing Prompts:

1. Imagine you are on your first hot air balloon ride. Describe what you see, hear, and feel as you rise into the sky.

Extension: Create a watercolor or digital illustration of your balloon adventure.

2. Write a story about two friends who get lost in a hot air balloon. How do they find their way back?

Extension: Make a comic strip showing key moments from your story.

3. If you could take a hot air balloon to any place or time in history, where would you go? Describe your adventure.

Extension: Build a small 3D diorama of the place you “visit” in your story.

Informative/Explanatory Writing Prompts:

4. Explain how a hot air balloon works and why it can float in the air.

Extension: Build a simple model hot air balloon using paper, a small bag, and a heat source like a hairdryer or safe heat lamp.

5. Research the first hot air balloon flight. Who made it happen and why was it important?

Extension: Create a timeline poster showing key events in early balloon history.

6. Compare hot air balloons to airplanes. How are they similar and how are they different?

Extension: Make a Venn diagram poster or digital infographic comparing the two.

Opinion/Persuasive Writing Prompts:

7. Hot air ballooning has a minimal environmental impact because it doesn't use fuel during the flight phase and the heat from the burners dissipates into the atmosphere without adding harmful substances. Do you think ballooning should be used more for transportation today? Give reasons to support your answer.

Extension: Design a futuristic hot air balloon for daily travel and explain how it works.

8. Should hot air balloons have safety rules like airplanes? Why do you think so?

Extension: Create a “Hot Air Balloon Safety Guide” poster or brochure.

9. Is the information we get from weather balloons worth the harm caused to animals and the environment by the release of weather balloons?

Extension: Hold a debate.



Poetry Takes Flight

From fiery burners to floating skies, hot air balloons spark imagination in poetry, music, and art—today, you'll explore their magic through sound, imagery, and your own creative writing.

Listen

- [Part 1: The History of Balloons and How They Work](#)
- [Part 2: “A Balloon’s Breath” by Composer Evan Daitz](#)

Discuss

How did he make the sound of the burner?

Experiment with different ways to make that sound.

Watch

[this video of a hot air balloon ride](#)

- *How do you imagine it would feel to ride in a balloon?*
- *What words come to mind when you see this video?*

Listen

- [Part 3: A Description of a Hot Air Balloon Ride](#)

A **cinquain** is a five-line poem. The didactic form uses a 1-2-3-4-1 word pattern.

A **haiku** is a three-line poem that follows a 5-7-5 syllable pattern to capture a moment in nature or emotion.

A **concrete poem** is a poem where the words form a shape that matches the topic of the poem.

Write

a poem about a hot air balloon ride. Use at least one simile or metaphor, one sound word, and describe what you see, hear, and feel.

Share

Invite volunteers to read their poems aloud. Encourage positive feedback focused on imagery and creativity.



Poetry Takes Flight - Examples

High Flight

By John Gillespie Magee Jr.

Oh! I have slipped the surly bonds of Earth
And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
of sun-split clouds,—and done a hundred things
You have not dreamed of—wheeled and soared and
swung

High in the sunlit silence. Hov'ring there,
I've chased the shouting wind along, and flung
My eager craft through footless halls of air

Up, up the long, delirious, burning blue
I've topped the wind-swept heights with easy grace
Where never lark, or even eagle flew—
And, while with silent lifting mind I've trod
The high untrespassed sanctity of space,
Put out my hand, and touched the face of God.

haiku

Gentle and Easy the Hot Air Balloon Did Float

by Rick Parise

gentle and easy
luminous clouds, I touch
flight.....
exquisite freedom

concrete poem

cinquain

Hot Air Balloon

by Jessica

Patterned
Loud
Glow in darkness
I feel so alive
Air fills a cloth

Hot Air Balloon

from down
below I wave hello
to a man standing in
a basket, a basket hang
ing from a balloon, a ball
oon filled with hot air
that keeps it pre
cariouly,
scario
u s
l y
a l
oft

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Additional Resources

[Albuquerque Balloon Fiesta Website](#)

Every October, the Albuquerque Balloon Fiesta fills the sky with over 500 balloons!

[How a Hot Air Balloon Works and Its Major Parts](#)

A one-page explanation and diagram for older students.

[Forces Acting on a Balloon](#)

A free body diagram and description for older students.

[Hot Air Balloon Diagram Pack](#)

This resource from Twinkl includes a diagram display poster, a diagram labeling activity, a writing activity, and a coloring sheet.

[Airigami](#)

Airigami is a team of artists who design large-scale creations, illustrations, and interactive experiences using only balloons.

Other Lesson Plans

[My NASA DATA Lesson: Using Radiosonde Data from a Weather Balloon Launch](#)

Students use radiosonde data from a weather balloon launch to distinguish the characteristics of the lower atmosphere. Grades 7-12

[Radiosonde: Definition, Examples, Quiz, FAQ, Trivia](#)

This article and other resources explore how scientists explore the upper atmosphere to predict weather. NGSS: MS-ESS2-5, CCSS: RST.6-8.7

[Hot Air for Hope: Teacher/Parent Lesson Plan Downloads](#)

An extensive collection of lesson plans and resources for K-12!

Videos

[How Does a Hot Air Balloon Fly?](#)

Hot air balloons seem magical, but science makes them work. How do pilots steer them, and why are wicker baskets still used?

[Remote Sensing: The Importance of Weather Balloons & Radiosondes](#)

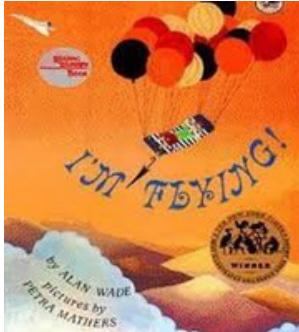
This video explains how radiosondes collect upper air data for weather forecasting and how the National Weather Service uses it.

[How Do Balloon Releases Impact the Environment?](#)

This news story describes the reasons why people release balloons as well as the problems it causes.



Book List



I'm Flying

by Alan Wade, illustrated by Petra Mathers

A young boy drifts across mountains and cities in a balloon, only to land on a deserted island full of secrets. Will he find his way home or begin a new adventure?

ages 5-9



The Noon Balloon

by Margaret Wise Brown

A boy, a girl, and their dog take a magical balloon ride over cities, oceans, and mountains, landing in a hidden village. Beautiful text and illustrations bring their adventure to life.

ages 3-6



Can One Balloon Make an Elephant Fly?

by Dan Richards, illustrated by Jeff Newman

Evan wonders if a balloon can lift an elephant. At the zoo, he and his mother explore imagination, where fantasy and reality meet.

ages 4-8

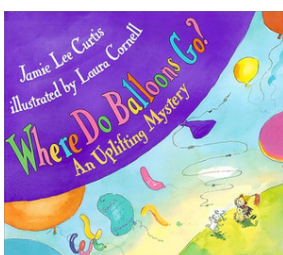


The 21 Balloons

by William Pene du Bois

In this classic middle-grade novel, Professor Sherman's Pacific flight lands him on Krakatoa, a strange island full of riches, quirky residents, and amazing balloon inventions. Can he uncover its secrets and find his way home?

ages 9-12



Where Do Balloons Go? An Uplifting Mystery

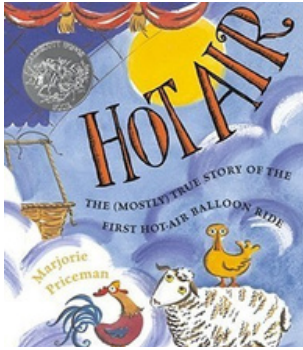
by Jaime Lee Curtis, illustrated by Laura Cornell

A gentle and humorous exploration of the joys and perils of a balloon's life.

ages 2-6 years



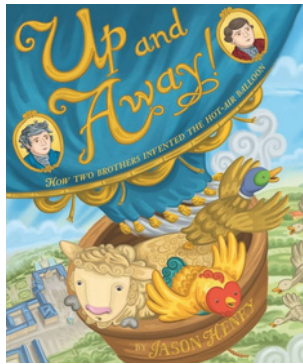
Book List



Hot Air

by Marjorie Priceman

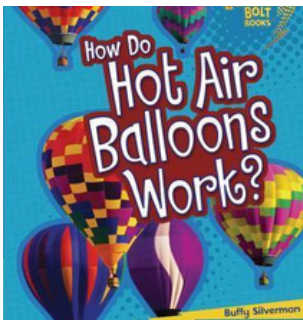
The first manned hot-air balloon is about to lift off—but what are those noises from the basket? A (possibly true) 1783 adventure.
ages 4-8



Up and Away! How Two Brothers Invented the Hot-Air Balloon

by Jason Henry

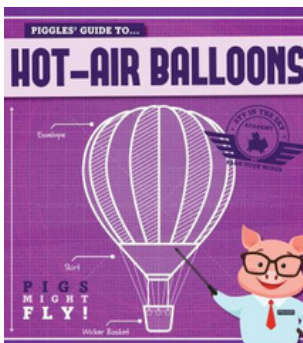
Over a century before the Wright Brothers, Joseph and Étienne Montgolfier launched a hot-air balloon carrying three animals—taking their first magical flight into the sky!
ages 5+



How Do Hot Air Balloons Work?

by Buffy Silverman

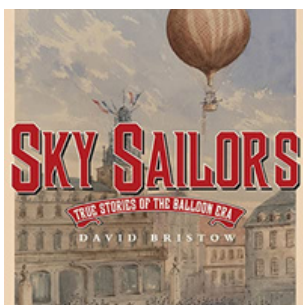
Hot air balloons are huge and colorful. They're lots of fun to watch. But how do they fly? And how do people control where the hot air balloon goes?
ages 6-8



Piggles' Guide to Hot Air Balloons

by Kristy Holmes

In this engaging book, Piggles the pig guides young readers through the world of balloons, with vibrant illustrations and clear diagrams enhancing the easy-to-follow text.
ages 4-8



Sky Sailors: True Stories of the Balloon Era

by David Bristow

For over a century before airplanes, people explored the skies in balloons—facing storms, oceans, and high altitudes. This book tells the daring stories of pioneers like Sophie Blanchard and Salomon Andree, illustrated with dramatic period artwork.
ages 9+