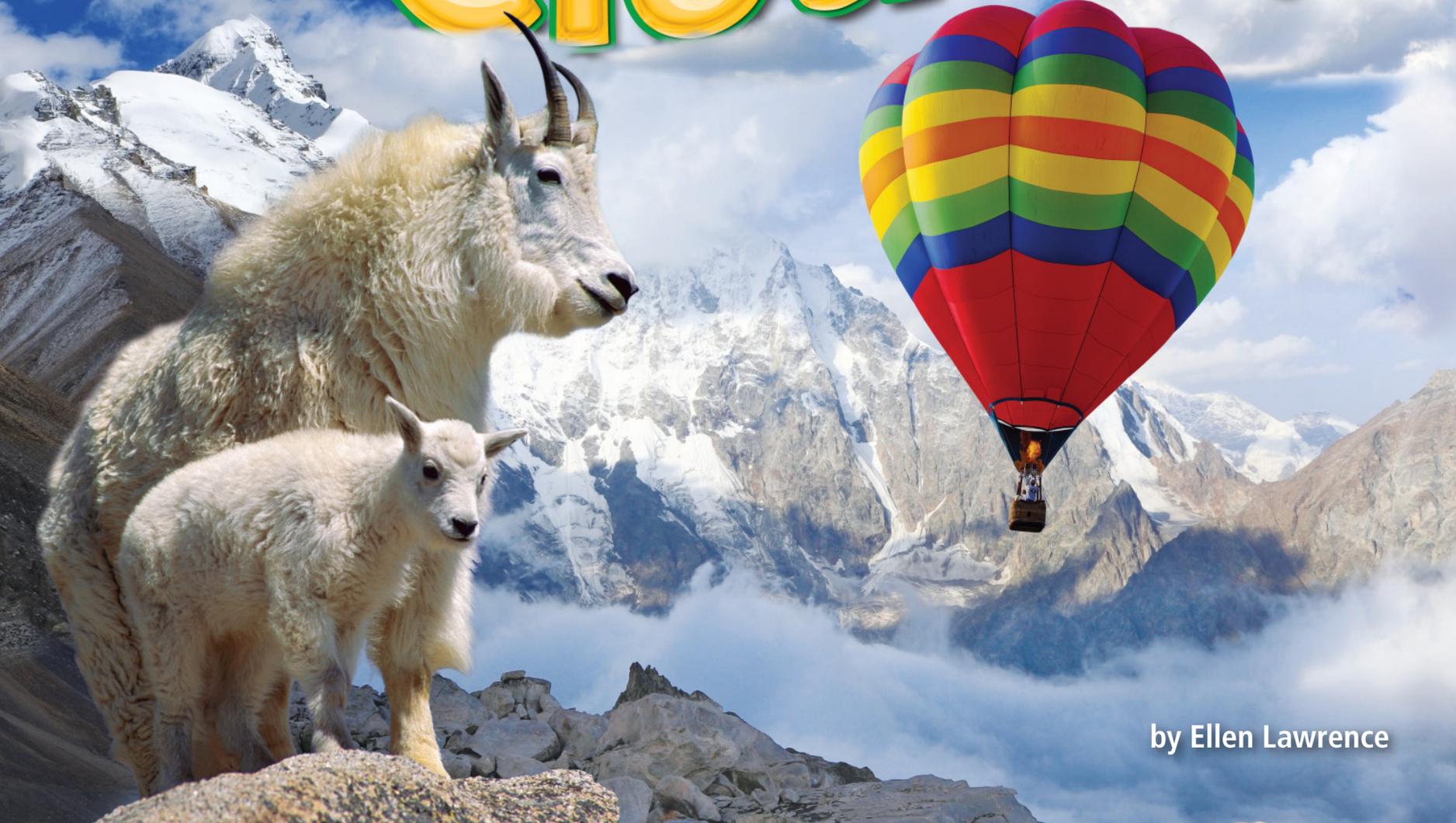




# What Are Clouds?



by Ellen Lawrence

**[Intentionally Left Blank]**



# What Are Clouds?

**by Ellen Lawrence**

**Consultants:**

**Suzy Gazlay, MA**

Recipient, Presidential Award for Excellence in Science Teaching

**Kimberly Brenneman, PhD**

National Institute for Early Education Research, Rutgers University  
New Brunswick, New Jersey

**BEARPORT**  
PUBLISHING

New York, New York

## Credits

Cover, © Kevin Schafer/Minden Pictures/FLPA, and © mamahoohooba/Shutterstock, and © Dim154/Shutterstock, and © XAOC/Shutterstock, and © Valentina R./Shutterstock; 3, © Andrey Armyagov/Shutterstock; 4, © Tyler Olson/Shutterstock; 5, © Andrey Yurlov/Shutterstock; 6, © mates/Shutterstock; 7, © Yuriy Kulyk/Shutterstock; 8–9, © holbox/Shutterstock; 8R, © djgis/Shutterstock; 9R, © cloki/Shutterstock; 10T, © James Steidl/Shutterstock; 10BR, © Margo/Shutterstock; 10BL, © pjorg/Shutterstock; 11, © irin-k/Shutterstock, and © Rafai Fabrykiewicz/Shutterstock; 12T, © Adisi/Shutterstock; 12C, © Ralph F. Kresge/NOAA Picture Library; 12B, © bokicbo/Shutterstock; 13L, © David P. Lewis/Shutterstock; 13C, © serg64/Shutterstock; 13R, © Christophe Testi/Shutterstock; 15TL, © leonid\_tit/Shutterstock; 15, © Ingo Schulz/Imagebroker/FLPA; 17, © ImageBroker/FLPA; 17TR, © Steve McCutcheon/FLPA; 19, © Yva Momatiuk & John Eastcott/FLPA; 19TR, © mmm/Shutterstock; 20, © Peter Van Rhijn/All Canada Photos/Superstock; 21, © Can Balcioglu/Shutterstock; 22TL, © Adisi/Shutterstock; 22TR, © Ingo Schulz/Imagebroker/FLPA; 22CL, © ImageBroker/FLPA; 22CR, © Steve McCutcheon/FLPA; 22BL, © bokicbo/Shutterstock; 22BR, © mmm/Shutterstock; 23TL, © serg64/Shutterstock; 23TC, © Yuriy Kulyk/Shutterstock; 23TR, © tr3gin/Shutterstock; 23BL, © irin-k/Shutterstock; 23BR, © leonid\_tit/Shutterstock.

Publisher: Kenn Goin

Editorial Director: Adam Siegel

Creative Director: Spencer Brinker

Design: Alix Wood

Editor: Mark J. Sachner

Photo Researcher: Ruby Tuesday Books Ltd

## *Library of Congress Cataloging-in-Publication Data*

Lawrence, Ellen, 1967–

What are clouds? / by Ellen Lawrence.

p. cm. — (Weather wise)

Includes bibliographical references and index.

ISBN 978-1-61772-404-6 (library binding) — ISBN 1-61772-404-1 (library binding)

I. Clouds—Juvenile literature. 2. Cloud forecasting—Juvenile literature. I. Title.

QC921.35.L39 2012

551.57'6--dc23

2011048443

Copyright © 2012 Bearport Publishing Company, Inc. All rights reserved. No part of this publication may be reproduced in whole or in part, stored in any retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission from the publisher.

For more information, write to Bearport Publishing Company, Inc., 45 West 21st Street, Suite 3B, New York, New York 10010. Printed in the United States of America in North Mankato, Minnesota.

10 9 8 7 6 5 4 3 2 1

# Contents

What Are Clouds Made Of?.....	4
Water's Amazing Journey .....	6
Creating Clouds .....	8
It's Raining, It's Pouring! .....	10
Meet the Cloud Families .....	12
Fluffy Cumulus Clouds.....	14
Gloomy Stratus Clouds .....	16
Icy Cirrus Clouds.....	18
Walking Through a Cloud.....	20
Science Lab.....	22
Science Words .....	23
Index .....	24
Read More .....	24
Learn More Online.....	24
About the Author .....	24

# What Are Clouds Made Of?

A jumbo jet speeds through the air.

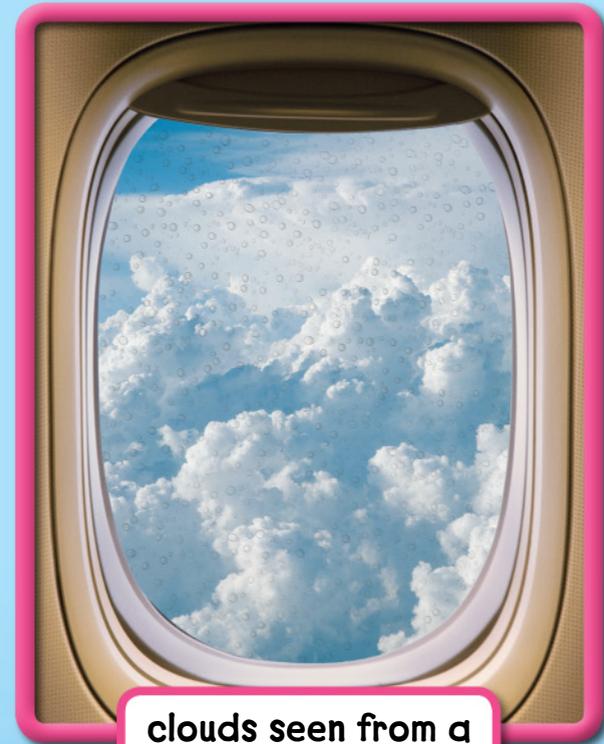
As passengers look out their windows, everything suddenly turns white!

Drops of water stream across the outside of the plane's windows.

What's happening?

The airplane is flying through a huge white **cloud**.

The plane's windows are wet because the cloud is made up of billions of water droplets!



clouds seen from a plane window

How do you think the water that makes up clouds gets into the sky?



A cloud may look fluffy and light, but the water that makes up one cloud can weigh more than a jumbo jet!

# Water's Amazing Journey

The water that makes up a cloud may have come from the ocean, a pond, a puddle—or all three.

How does water get from a pond or a puddle into the sky?

When the sun's heat warms up water, the water changes into a **gas** called **water vapor**.

This invisible vapor floats up into the air and begins to rise into the sky.

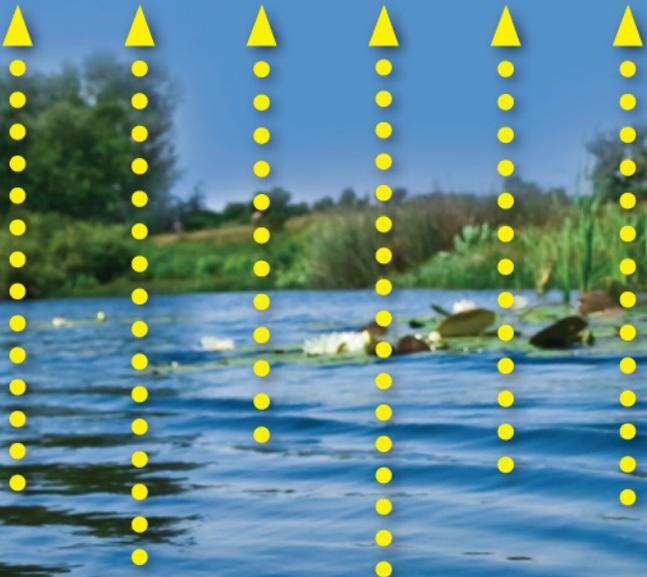
Fill a small clear plastic cup with water. On the outside of the cup, use a pen to mark the water level. Place the cup in a window that gets lots of sun. Check the cup every day. What is happening to the water?



sun

Invisible water vapor rises from the pond into the air.

Some of the water from oceans, lakes, rivers, and ponds is always changing into vapor. The air is filled with water vapor, but it's not possible to see it!



# Index

- air 4, 6–7, 8, 10–11, 20  
altostratus clouds 16–17, 18, 22  
cirrostratus clouds 18–19, 22  
cirrus clouds 12, 18–19, 22  
cumulus clouds 12, 14–15, 16, 18, 22  
drizzle 16, 22  
dust 8  
fog 20–21  
gases 6  
ice crystals 10, 18  
rain 10–11, 14–15, 16, 18, 22  
shapes of clouds 12–13  
snow 10–11, 16, 18, 22  
stratus clouds 12, 16–17, 18, 22  
sun 6–7, 11  
water droplets 4, 8–9, 10–11, 16, 20  
water vapor 6–7, 8, 11, 20  
wind 12

## Read More

**Herriges, Ann.** *Clouds (Weather)*. Minneapolis, MN: Bellwether Media (2007).

**Rockwell, Anne.** *Clouds (Let's-Read-and-Find-Out Science)*. New York: HarperCollins (2008).

**Saunders-Smith, Gail.** *Clouds (Weather)*. Mankato, MN: Capstone (2006).

## Learn More Online

To learn more about clouds, visit  
[www.bearportpublishing.com/WeatherWise](http://www.bearportpublishing.com/WeatherWise)

## Answers

The cloud families on page 13 are:  
cloud family A – cirrus clouds  
cloud family B – cumulus clouds  
cloud family C – stratus clouds

## About the Author

Ellen Lawrence lives in the United Kingdom. Her favorite books to write are those about animals and nature. In fact, the first book Ellen bought for herself, when she was six years old, was the story of a gorilla named Patty Cake that was born in New York's Central Park Zoo.

**[Intentionally Left Blank]**



# What Are Clouds?

What's that white stuff floating high in the sky? Cotton candy? No! It's tons of tiny water droplets that have formed clouds. In this cool book, you'll get to look at a cloud up close—just as you would if you flew through one in an airplane. You'll also learn how clouds form, and the weather that different kinds of clouds bring. Forecast for this book: cloudy but fun!

**How Are Rain, Snow,  
and Hail Alike?**

**What Are Clouds?**

**What Is Climate?**

**What Is the  
Water Cycle?**

**What Is Weather?**



**BEARPORT**  
PUBLISHING

[www.bearportpublishing.com](http://www.bearportpublishing.com)

ISBN-13: 978-1-61772-404-6



9 781617 724046