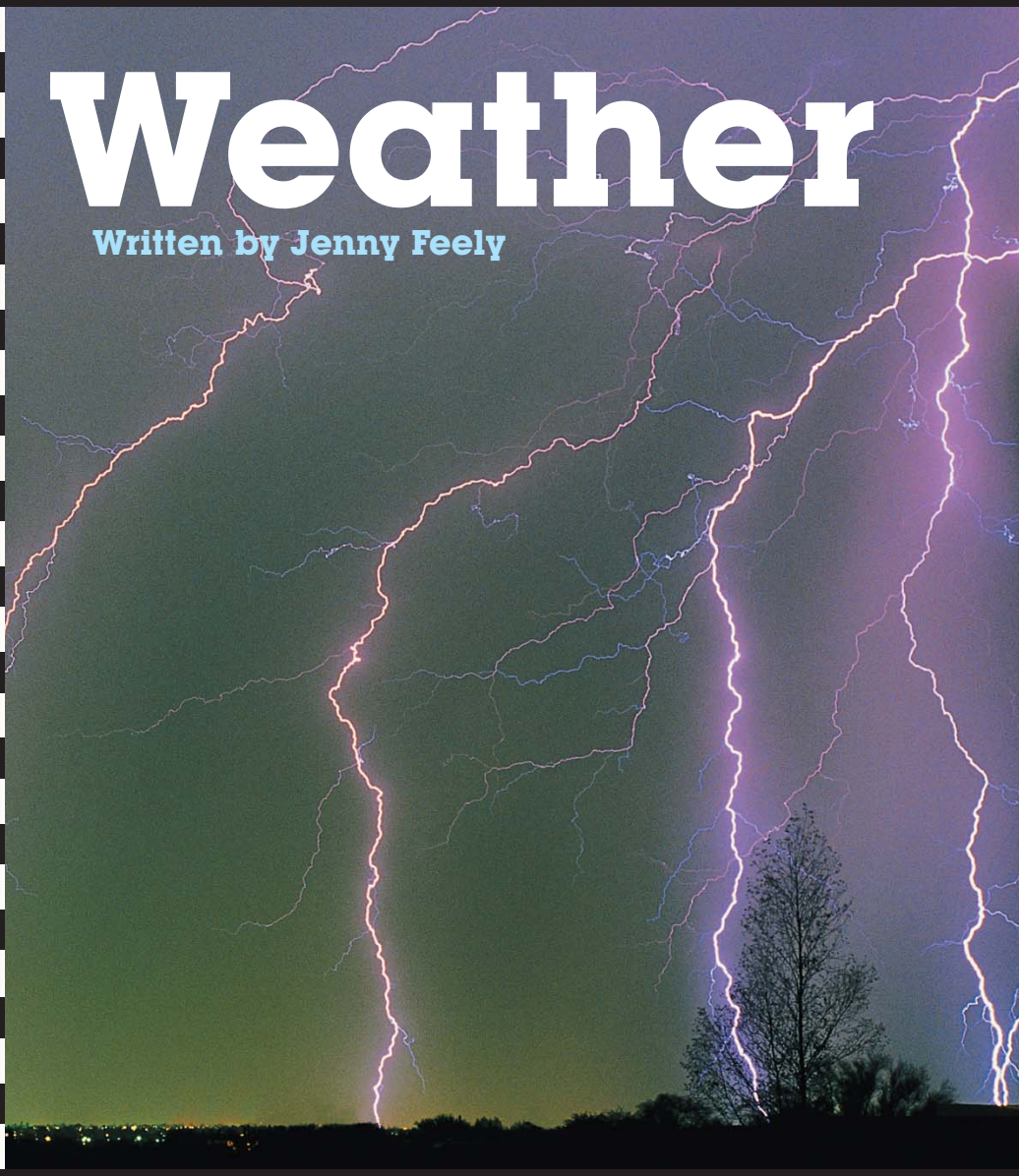
Teacher Edition

AlphaWorld

Weather

Written by Jenny Feely



Horwitz Education
A Division of Horwitz
Publications Pty Ltd
55 Chandos Street
St Leonards NSW 2065
Australia

Horwitz Gardner Limited
168e High Street
Egham, Surrey
TW20 9HP
United Kingdom

First published 2005

Developed by
Eleanor Curtain Publishing
Text: Nicole di Marco
Consultant: Susan Hill
Designed by
Alexander Stitt
Production by
Publishing Solutions

Printed in China

ISBN 0 7253 3079 1

1 2 3 4 5 6 7 8 9
05 06 07

How to use this book

The AlphaWorld teacher editions support teachers as they guide children's reading and thinking during one or more guided reading sessions. Teachers can observe children as they read and choose from the given suggestions to suit individual needs.

Before reading

Setting the context, front cover and title page:

The suggestions help teachers to set the scene and prepare children for reading the book. Prompts help to determine children's prior knowledge. Where necessary, background information is provided. Teachers are encouraged to check that children understand the vocabulary listed and to discuss the meanings and/or the structures of these words. Previous experiences with similar text types may also be discussed.

During reading

Predict, Read, Reflect:

Questions encourage children to engage with the text by making predictions. The children then read a section of the text and reflect on what they have read. The focus is on the content, language and text features of the book.

Observe and support:

Prompts help teachers to focus on the strategies children use as they read. Teachers can then select from and adapt the suggestions according to the needs of the individual child. The suggestions aim to develop a child's reading abilities. Interruptions to the child's reading should be minimal.

After reading

A selection of reading and writing activities:

The last pages of the teacher edition provide follow-up activities and include the assessment focus.

Selected text features

- Clear diagrams explain some scientific concepts
- Technical language is used throughout
- Index

Vocabulary

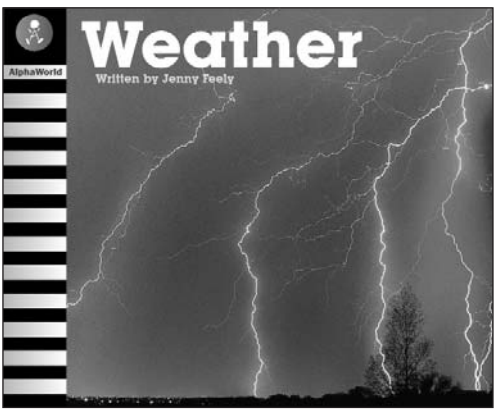
air, atmosphere, breeze, clouds, dew, dust storms, electricity, fog, frost, gale, hail, hurricanes, ice crystals, lightning, sandstorms, snow, snowflakes, storms, thunder, thunderstorm, tornadoes, water cycle, water vapour, weather

Setting the context

Talk to the children about different weather conditions.
What sort of weather do you like the best? Why?

Background information

When the sun heats the air and water, it causes it to move around the earth. This movement causes weather changes. These movements can bring warm calm weather as well as storms. Weather is always changing.



Front cover

Show the front cover.
Brainstorm the type of information that might be found in the book. Record the children's ideas on a chart for future reference.
What kind of information do you think will be found in this book called Weather*?*

Title page

Turn to the title page.
What information is given on a title page? Why is this information here?

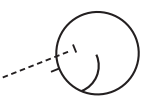
Predict

This is the table of contents. What do you think this book is about? Let's read through the table of contents together to see what type of information we will find in this book.
Are there any words you are unfamiliar with? Let's talk about them.
Turn to page 4.
The introduction tells us what type of information we will find in the book. This introduction tells us that weather changes every day and that all types of weather are caused by changes in the air.
What can weather be like?

Read to the end of page 4.

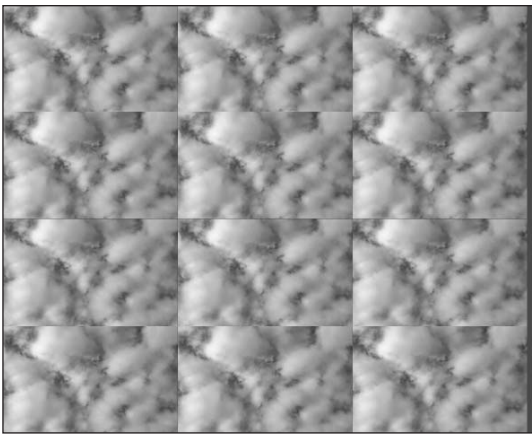
Reflect

What section are you looking forward to reading the most? Why?
Point out that the contents page helps you choose where to start reading.
What causes weather to change?

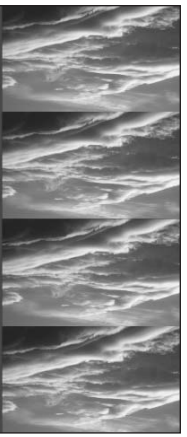


Observe and support

Can the child explain the purpose of a table of contents?
Why is there a contents page in this book? Can you show me how to use the contents page? Can you tell me where I would find the section on dew and frost?



Contents



Introduction

Weather changes every day. It can be warm and pleasant, or very hot or cold.

At its most severe, it can bring storms and heat waves.

All types of weather are caused by changes in the air around us.

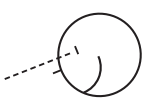
Predict

This section explains how wind is formed. The sun warms up the atmosphere causing the air to expand and rise. This moving air is called wind. What can wind do?

Read to the end of page 7.

Reflect

What is the difference between a breeze and a gale?
Do you like being outside when it is windy? Why? Why not?



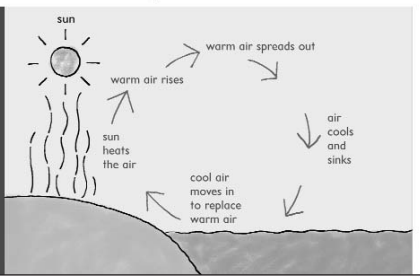
Observe and support

Can the child explain the diagram on this page?
What is the diagram about? What are these arrows for?
What do the labels tell us?
Can you tell me in your own words how wind is formed?

Wind

The earth is surrounded by a layer of air called the atmosphere. When the sun warms the atmosphere, the air expands and rises. As warm air rises, it pushes cooler air aside, creating wind.

How wind is formed



Wind moves over the land, making trees sway and clouds move across the sky.

A gentle, slow wind is called a breeze and a strong, fast wind is called a gale.

Gale force winds can rip trees out of the ground and blow buildings over.

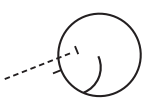
Predict

When the sun warms up the water in lakes, rivers and oceans some of the water turns into a gas called water vapour. When this vapour rises into the air it is called evaporation. Can you say 'evaporation' with me?
I like watching the rain evaporate on a warm day. Have you seen this happen? What does it look like?
What do you think clouds are made from?

Read to the end of page 9.

Reflect

What are clouds made from?
Why does it rain?
What is this diagram about? Why is it called 'the water cycle'?
What does cycle mean?



Observe and support

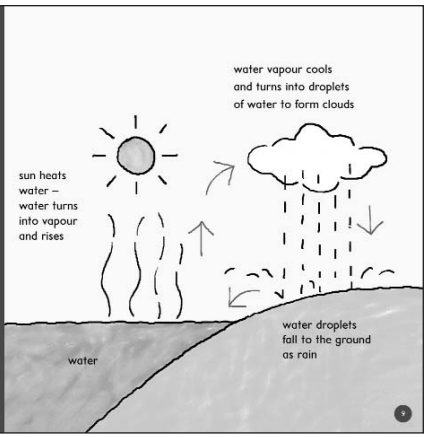
Using the diagram, can the child explain how the water cycle works?
Can you tell me in your own words how the water cycle works? Use the diagram to help you.

Clouds and rain

Clouds are formed as the sun warms the water in rivers, lakes and oceans. Some of the water turns from a liquid into a gas that rises into the air. This is called evaporation.

When evaporated water cools, it turns back into tiny droplets that form clouds. In the clouds the droplets join with other droplets and fall to the ground as rain, hail or snow.

The water cycle



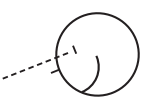
Predict

Snow and hail both form in very cold air. Cold air causes the water droplets in clouds to freeze. Sometimes they freeze into tiny crystals of ice that join together to make snowflakes.
Have you ever been in a hailstorm? What happened?
Have you ever seen snow? What was it like?
Turn to page 12.
Fog is a thick cloud that forms close to the ground. It usually disappears when the sun comes up. Why do you think it disappears?
Dew is made up of tiny drops of water. Frost is frozen dew. When do you see dew and frost?

Read to the end of page 13.

Reflect

How are snow and hail different? How are they the same?
Have you ever driven or walked through fog? What was it like?
What is frost? What is it like outside when there is frost?



Observe and support

Ask one child to read aloud to you while the others are reading silently.
Can the child read the text fluently?
I liked the way that sounded when you read it. It made it easy for me to understand.

Snow

When the air is very cold, the water droplets in clouds freeze. Sometimes they freeze into tiny crystals and fall to the ground as snow. Snowflakes have many different shapes.

Hail

Hail is also formed in very cold air.

Hail forms when wind makes droplets of water move up and down in a cloud. This makes them melt and refreeze over and over again until they become balls of ice that fall to the ground.

Fog

Fog is a thick cloud that forms close to the ground or is blown in by the wind.

Fog disappears when the sun warms the air and evaporates the water in the cloud or the wind blows it away.

Dew and frost

Dew is made up of tiny drops of water. It is found first thing in the morning when everything outside is wet even though it hasn't rained.

Frost is frozen dew. It forms when the air is very cold.

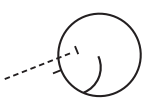
Predict

Storms happen when weather becomes very wild. There can be strong winds and lots of rain, hail or snow. What is it like when it storms? How do storms make you feel?
Turn to page 16.
What sort of storm is this? A thunderstorm happens when warm air and cool air collide. This collision causes electricity to form in the air. How do you think this electricity causes lightning and thunder?

Read to the end of page 17.

Reflect

What can storms do?
What is special about a thunderstorm?
What do you do when there is lightning and thunder?



Observe and support

Can the child understand the inferences in the text?
Are thunderstorms dangerous? Why do you think so? Why don't you think so?

Storms

During storms the weather becomes very wild, with strong winds and lots of rain, hail or snow.

There can also be thunder and lightning.

Sometimes storms blow up huge clouds of sand or dust, forming sandstorms or dust storms.

Storms can cause a lot of damage.

Thunderstorms

A thunderstorm happens when warm air and cool air collide. This causes electricity to form in the air.

Lightning happens when the electricity builds up and then suddenly moves down to the ground, giving off a bright flash of light.

As lightning passes rapidly through the air, it makes a rumbling noise. This is thunder.

When lightning hits the ground, it can cause fires or explosions. People can be hurt or even killed if lightning hits them.

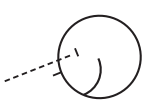
Predict

Sandstorms form in deserts when strong winds blow lots of sand through the air. What do you think it would be like to be caught in a sandstorm?
In a dust storm strong winds blow over dry land. Small pieces of dirt and dust are blown into the air, making dust clouds. What would a dust storm be like?
Turn to page 20.
Hurricanes are formed because of the movement of warm and cool air in the atmosphere. During a hurricane the air spins very quickly in a huge circle. What do you think would happen during a hurricane?
What does the tornado in the photo on page 21 look like? What do you think tornadoes can do?

Read to the end of page 21.

Reflect

Tell me in your own words how a sandstorm or a dust storm is formed?
Tell me something about hurricanes or tornadoes that you learned from reading this book.



Observe and support

Can the child use information in the photographs and text to understand new vocabulary?
What is a dust devil? What helped you to work that out?

Sandstorms

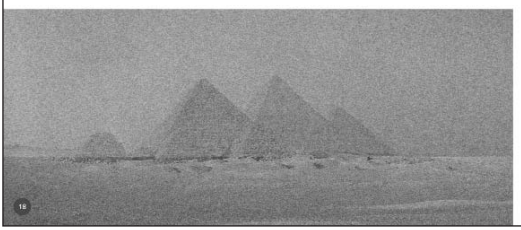
Sandstorms form in deserts when strong winds pick up lots of sand and blow it across the land.

Sandstorms are very dangerous. They can bury whole buildings. People caught in sandstorms must cover their faces and seek shelter.

Dust storms

Dust storms happen when strong winds blow over dry land. The winds pick up small pieces of dirt and dust and blow them across the land in clouds. Dust storms can darken the daytime and make it impossible to see what is nearby.

When dust clouds twirl round and round, they are called dust devils.



18

19

Hurricanes

Hurricanes are formed by the movement of warm and cool air in the atmosphere.

During a hurricane, the air spins very quickly in a huge circle, bringing fierce winds and rain. The spinning air in the hurricane can also cause the sea to flood the land.

Hurricanes are very dangerous. They can destroy whole towns and kill people.

Tornadoes

Tornadoes are funnels of very strong wind that sometimes form in thunderstorms.

Tornadoes move very quickly across the ground, sucking up everything in their path. They can destroy buildings and rip up trees.

20

21

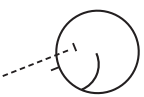
Predict

This is the conclusion. It sums up the information about weather that is in this book.
What do you think has been the most important information about weather?
How do you think the author will end this book?
Turn to the index on page 24. Discuss the features of the index. You may like to demonstrate how to use an index to find information.

Read to the end of page 24.

Reflect

Were your predictions about the conclusion correct?
Why is the weather always changing?

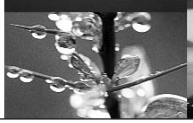


Observe and support

Can the child demonstrate how to use an index?
What is this page called? What is it for? How are the words organised?
Can you show me where to find information about thunder?

Conclusion

Weather is always changing. Changes in the weather are caused by the sun heating the water and air and causing the air to move around the earth.



22

23

24

Index

After reading

Being a meaning maker

Encourage the children to support their answers with evidence from the book as they discuss these questions.

What causes changes in the weather?
What would it be like to be in a dust storm?
Are storms dangerous? Why?
How does water that falls to the ground as rain eventually turn into clouds?

Being a code breaker

Explore the following language features:

- Adjectives: gentle, slow, strong, fast, tiny, thick
- Compound words: sandstorms, snowflake, thunderstorm

Being a text user

Refer to the chart made prior to reading the book. Compare the ideas on it with the information included in the book. Tick off the information found in the text.

Being a text critic

What did the author need to know to write this book?
How might she have found out about weather?
How important are the photographs and diagrams in this book? Would the book have been as interesting without them?

Responding to text

The children could make models of some of the types of weather included in the book. For example, use a paper funnel to represent a tornado. The models could include labels providing information about that form of weather.

The children could complete a 'What's the question?' activity. Provide the children with a series of statements from the book and ask them to write an appropriate question.
It is a gentle, slow wind.
They are made by ice crystals joining together.
They can cause a lot of damage.

Encourage children to think about how knowing how to spell a word can help them to spell other words. For example, if they can spell storm this would help them to spell thunderstorm, dust storm, sandstorm, stormy and storms.

Writing links

Revisit the diagrams in the book and discuss their features and purpose. Select a weather type from the book, for example, hail on page 11, and model the construction of a diagram using the information found in the text.

The children could write a poem about their favourite type of weather.

Possible assessment focus

Can the children:
- use a diagram to help them explain a concept?
- use an index?
- use vocabulary related to weather correctly?

whole text activity sentence activity word activity

Weather

Topic: Weather/Environment/Natural Disasters
Curriculum link: Earth Science
Text type: Explanation
Reading level: 22
Word count: 679
Vocabulary: air, atmosphere, breeze, clouds, dew, dust storms, electricity, fog, frost, gale, hail, hurricanes, ice crystals, lightning, sandstorms, snow, snowflakes, storms, thunder, thunderstorm, tornadoes, water cycle, water vapour, weather

Possible literacy focus:

- Understanding how to read diagrams.
- Using an index.
- Understanding the vocabulary used to describe different weather conditions.

ESL possibilities:

- Looking for smaller words inside compound words: thunderstorms, sandstorms, snowflakes.
- Locating cause and effect words used in explanations of weather: when…/it turns, as…/it makes.

Summary

This book explains the changes in weather that occur as a result of changes in the air around us. It describes how and why snow, hail, hurricanes and other types of extreme weather occur.

AlphaWorld

ISBN 0-7253-3079-1