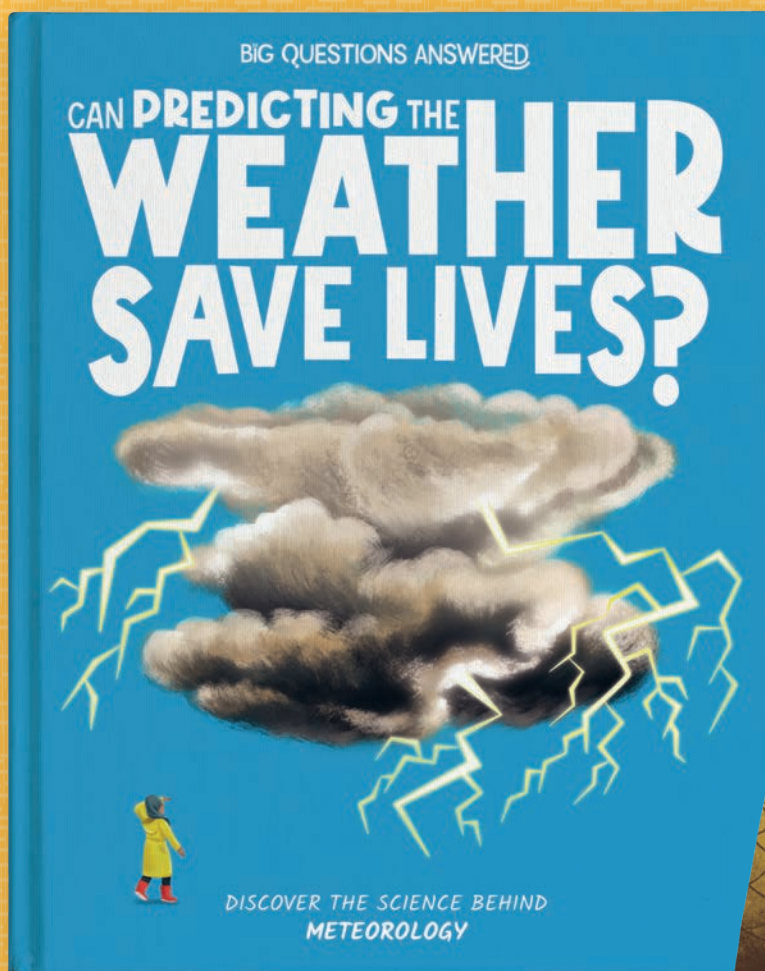


BIG QUESTIONS ANSWERED

TEACHERS' & PARENTS' RESOURCES



Full of thought-provoking questions and fascinating extra information to accompany this book!



CONTENTS:

Introduction	3
Pre-Reading Questions	4
The Importance of Forecasting: Scene 1	5
How Does the Weather Affect Us?: Scene 2	7
Using Tools: Scene 3	9
Extreme Weather: Scene 4	11
How Hurricanes Form: Scene 5	13
Hurricane Katrina: Scene 6	15
Emergency Response Team: Scene 7	17
Tracking the Hurricane: Scene 8	19
Letting Everybody Know: Scene 9	21
Working Together: Scene 10	23
Watching the Weather: Scene 11	25
Saving Lives in Small Ways: Scene 12	27
After the Storm: Scene 13	29
Post-Reading Questions	31

INTRODUCTION

NOTES FOR TEACHERS, HOME EDUCATORS AND PARENTS

Inspire children's natural curiosity, improve literacy, and have fun learning about different sciences with The Big Questions Answered. Each book in the series is accompanied by a selection of fantastic, **FREE** downloadable resources.

Our **Teachers' and Parents' Resources** booklets are full of ideas for discussions, extra facts, and links to hands-on activities – all great ways to help children explore each field of science and the key topics surrounding them.

Our **Young Scientists' Activity Packs** are a real bonus. They're full of soft-learning, fun activities, all subtly linked to the field of science, that will encourage independent learning. Visit the 'Kids' Zone' to find out more.

Don't forget, on the website you can also download our **'Meet the Scientist' pages** – there's one to accompany each book – and sign up to our newsletter to follow what's coming up next for The Big Questions Answered. Download all these and more at:
www.thebigquestionsanswered.com

Can Predicting the Weather Save Lives? book



Young Meteorologists' Activity Pack

KEY CURRICULUM TOPICS

The resources related to *Can Predicting the Weather Save Lives?* tie in with key curriculum topics including:

- Creative writing and literacy
- Working scientifically
- Animals, including humans
- Geography
- Seasonal changes
- Earth and space
- Human and physical geography
- Climate change

The most relevant topics are indicated throughout this guide.

CAN PREDICTING THE WEATHER SAVE LIVES?

This book explores the extraordinary world of meteorology by following the impressive steps meteorologists took to predict one of the most destructive hurricanes ever recorded; Hurricane Katrina. As well as covering key moments from this specific event, the book explores the special tools meteorologists use, how extreme weather affects our world, and the way weather forecasts help us all to stay safe, every day.

PRE-READING QUESTIONS

Engage in discussion about the general topic of meteorology with the suggested questions below.



- How many types of weather can you name?
- What's your favourite type of weather?
- How do you think we know what weather is on the way?

THE IMPORTANCE OF FORECASTING: SCENE 1

The material for this scene can be linked to curriculum topics, including: seasonal changes; geography; Earth and space.

Introduce children to the topic of weather by discussing what it is, where it comes from, and why it's so important that we can forecast it. This is a good time to introduce different types of weather, too.



DISCUSSION PROMPTS

- The weather looks very different on the left and right side of the scene. How do you think the different types of weather are making those people feel? Give examples of emotions such as feeling happy, scared, annoyed, and so on.
 - Where do you think the weather comes from?
Information overleaf
- Do you think the weather is the same all over the world?
Information overleaf

ACTIVITY

Corresponding activity on page 3 of the activity pack: 'All Sorts of Weather' is a creative drawing activity where children use a prompt to draw the type of weather described into an everyday scene.

THE IMPORTANCE OF FORECASTING: SCENE 1

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHERE DO YOU THINK THE WEATHER COMES FROM?

Weather is the state of the **atmosphere** at a particular place during a short period of time, such as a day.

So where does weather actually come from? Weather comes from the atmosphere around Earth. The atmosphere is mostly made up of water, air, and other small **particles**.

When the Sun warms up planet Earth, it causes the water and air in the atmosphere to move around.

This is how **weather patterns** are created, and why we experience different types of weather, too.

Scientists called **meteorologists** study the atmosphere as a result of this, so they can better understand what weather is on the way, even if it can't be seen in the sky yet!

DO YOU THINK WEATHER IS THE SAME ALL OVER THE WORLD?

Our planet is very big! As a result, the weather can change massively, depending on where you live. Different places have different weather because of where they are on Earth.

For example, if you live near the **equator** (the half way point between the North Pole and the South Pole), it is usually warmer. However, if you live near the Arctic or Antarctic **poles**, it is much colder!

Weather can change in the same place, too. Because the Earth is **tilted** as it **orbits** the Sun, it means that some places have **seasons**.

Seasons are different times of the year that each have their own special types of weather patterns. For example, spring is a type of season. During spring, the weather will often get warmer and flowers start to grow.

However, there are parts of the world that do not have seasons like this. The closer a place is to the equator, the less change they have in weather patterns.

HOW DOES THE WEATHER AFFECT US?: SCENE 2

The material for this scene can be linked to curriculum topics, including: seasonal changes; animals, including humans; human and physical geography.

Explore the ways in which climate change is causing weather around the world to change, and how it is affecting humans and animals. Discover why weather forecasts are so important for human survival.



DISCUSSION PROMPTS

- The weather looks very different on the left and right side of the scene.

Can you spot the differences between the two?

Give examples, such as icy cold vs warm sun, animals separated vs animals together, no plants or crops vs lots of plants and crops, and so on.

- Why do you think the ice is melting on the left side?

Information overleaf

- Can you name examples of food that grow from soil?

Encourage discussion and provide examples, such as potatoes, grains, such as corn and rice, fruit, vegetables, and so on. There is more information overleaf.

ACTIVITY

Corresponding activity on page 4 of the activity pack: 'Fill the Basket' is a creative drawing activity where children fill their shopping basket full of their favourite foods that come from being grown in soil.

HOW DOES THE WEATHER AFFECT US?: SCENE 2

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

CLIMATE CHANGE

Climate change is the way in which the **temperature** and **weather patterns** are changing **long-term**. Although these may be natural changes to our planet over time, human activity plays a large part in climate change.

Some examples include burning **fuels**, like coal and oil for cars, and cutting down trees. Both of these examples lead to the Earth becoming warmer – an effect of climate change.

Climate change is a very important thing to learn about.

The temperature of our planet is on the rise and **weather patterns** are constantly changing and becoming more dramatic. **Extreme weather** is becoming more frequent, too.

Scientists called **meteorologists** study climate change, and how it might affect the future of our planet.

HOW DO WEATHER FORECASTS HELP FOOD GROW?

Weather **forecasts** are extremely important for people who grow food from the ground, such as farmers who grow **crops**.

Farmers use weather forecasts to decide when is best to plant their crops, as well as when to **harvest** them. If there is a big rainstorm on the way, a farmer will not plant or harvest their crops.

Farmers also use weather forecasts to protect their **livestock**, such as cows and pigs. If farmers know extreme weather is on its way, they can prepare and provide extra shelter and food for their animals.

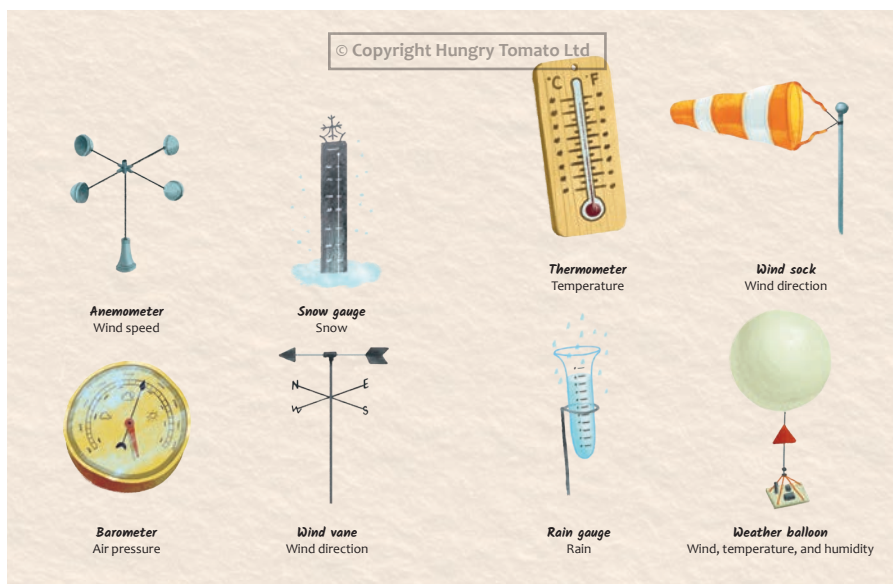
Farmers also use weather forecasts to tell how much rain is going to fall. If it is due to rain after a long period of sunshine, farmers will know not to water their fields.

Without weather forecasts, producing food for us to eat would be much more difficult for farmers to do.

USING TOOLS: SCENE 3

The material for this scene can be linked to curriculum topics, including:
working scientifically.

Introduce children to meteorologists and what they do, and explore the different ways they gather information about the weather. Engage with the various weather tools, and discuss where and why they might be used.



DISCUSSION PROMPTS

- What do you think meteorologists do?

Information overleaf

- Have you seen any of the tools shown in this scene before?

Encourage children to discuss if they have seen any of these tools in their homes and gardens, or out and about.

- How and where do you think these different tools are used?

Encourage children to discuss how and where they think these different tools might be used, such as in the ground, in the sky, in the water, and so on. There is more information overleaf.

ACTIVITY

Corresponding activity on page 5 of the activity pack: 'Weather Tools' is an engaging activity where children match the different tools with a description of how meteorologists use them to predict different types of weather.

USING TOOLS: SCENE 3

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHAT DO METEOROLOGISTS DO?

Meteorologists study **weather patterns** and the **atmosphere** to understand and predict upcoming weather. They spend much of their time studying **data** from **satellites**, **radar**, and **weather stations** using special tools and **techniques**. This helps them provide accurate **forecasts**, issue warnings for upcoming **severe weather**, and help with climate research.

WEATHER TOOLS

Although meteorologists now use special new **technology** to help them predict the weather, they still rely on small weather tools, too!

Anemometer - this tool measures how fast the wind is blowing, and the direction it's blowing, too. It is typically made up of four cups attached to a pole.

Snow gauge - this tool measures how deep snow is. It can be found in the ground of places that are **prone** to large quantities of **snowfall**.

Thermometer - this tool measures how hot or cold something is. Although they are used in lots of different ways, such as by doctors when you're unwell, they are also used to track the **temperature** outdoors.

Wind sock - this tool measures which direction the wind is blowing. It looks like a big sock! They are often orange and white, and are usually placed somewhere high up.

Barometer - this tool measures **air pressure**. It looks like a compass, and is often used by meteorologists to show **short-term** weather changes.

Wind vane - this tool points towards the direction the wind is coming from. This is a very **traditional** weather tool, and can often be found on the top of houses.

Rain gauge - this tool works in the same way as a snow gauge, but measures the amount of **rainfall** instead!

Weather balloon - this tool resembles a hot-air balloon. It is sent up into the sky to collect all sorts of information about weather that's on the way.

EXTREME WEATHER: SCENE 4

The material for this scene can be linked to curriculum topics, including: seasonal changes; human and physical geography.

Delve into a real-life example of how extreme weather can affect our day-to-day lives, and find out why warnings and forecasts are so important for keeping people safe in areas of extreme weather.



DISCUSSION PROMPTS

- This scene shows an example of extreme weather called a monsoon. How do you think people manage to live in areas with this extreme weather condition? Encourage discussion and give examples, such as how people might get to work, drive a car, do their food shopping, and so on.
 - What is a monsoon?
Information overleaf
 - What is a cyclone?
Information overleaf
 - What is a typhoon season?
Information overleaf

ACTIVITY

Corresponding activity on page 6 of the activity pack: 'Extreme Weather Words' is a word search activity where children are encouraged to search for the weather-related words in the jumble of letters.

EXTREME WEATHER: SCENE 4

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHAT IS A MONSOON?

A monsoon is a type of **extreme weather** that occurs when there's a dramatic change in wind direction, and this is followed by either a very long period of rainfall, or no rainfall at all.

Some areas in the world experience monsoons every year – these are called **monsoon seasons**. They often cause lots of **flooding** to these areas.

WHAT IS A CYCLONE?

A **cyclone** is another example of extreme weather. It is a type of **tropical storm** that often forms over warm water, and involves winds blowing in a large **spiral**.

Hurricanes and **typhoons** are other examples of extreme weather that are made up of tropical storms.

The only difference between a cyclone, hurricane, and typhoon is where they occur in the world!

Cyclones form over the Indian and **South Pacific Ocean**, hurricanes form over the **Northeast Pacific** and the **North Atlantic Ocean**, and typhoons form over the **Northwest Pacific Ocean**.

WHAT IS A TYPHOON SEASON?

Typhoon season is a period of time, usually between July and October, when many powerful tropical storms form and grow. Most typhoons occur during this time.

HOW HURRICANES FORM: SCENE 5

The material for this scene can be linked to curriculum topics, including:
seasonal changes; geography.

Explore different types of extreme weather and how some types of weather turn into natural disasters, such as hurricanes. Look at how hurricanes form and why this extreme type of weather is so dangerous.



DISCUSSION PROMPTS

- What is a natural disaster?
Information overleaf

- What do you think happens to the weather during a hurricane?

Engage children in discussion about what they expect would happen during a hurricane, such as dark sky, strong winds, rain, and so on. There is more information overleaf.

- Can you name any other types of extreme weather similar to hurricanes?

Engage children in discussion about other types of weather that are similar to hurricanes, such as typhoons and cyclones. There is more information overleaf.

ACTIVITY

Corresponding activity on page 7 of the activity pack: 'How Hurricanes Work' is an activity where children decide if the weather-related statements are true or false, using what they've learnt from the main book and the information in this guide.

HOW HURRICANES FORM: SCENE 5

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHAT IS A NATURAL DISASTER?

A **natural disaster** is a big event, such as a hurricane, earthquake, or tornado, that can cause a lot of damage to buildings, roads, and natural habitats.

They can sometimes hurt people, too.

When a natural disaster occurs, it's important for the correct **precautions** to be taken to ensure everybody stays safe.

WHAT DOES A HURRICANE ACTUALLY LOOK LIKE?

A **hurricane** is a type of natural disaster.

During a hurricane, the weather can start to look very stormy. This might include very strong winds, heavy rain, lightning, and can sometimes cause big waves in the ocean.

When a hurricane reaches land, it often floods and can even knock down trees, buildings, and houses.

The stronger the wind, the stronger the hurricane will be.

Some hurricanes can reach speeds of 155 miles per hour (250 km/h)!

EXTREME WEATHER

Hurricanes aren't the only types of extreme weather that can occur.

Other examples of extreme weather include **tornados**, **cyclones**, **heatwaves**, and **drought**.

HURRICANE KATRINA: SCENE 6

The material for this scene can be linked to curriculum topics, including: seasonal changes; human and physical geography.

Introduce children to the real-life hurricane of 2005, Hurricane Katrina, which hit the south coast of the USA. Discuss why it is important for meteorologists to predict when a hurricane is on the way.



DISCUSSION PROMPTS

- This scene shows a very big hurricane heading towards land. How do you think people were feeling when they saw Hurricane Katrina?

Give examples of emotions such as feeling scared, worried, in awe, and so on.

- How do you think a hurricane would affect communities?

Engage in conversation about the different ways people would be affected by a hurricane, such as damaged buildings, uprooted trees, injured people, and so on. There is more information overleaf.

- Why do you think it's important for meteorologists to predict hurricanes?

Encourage children to discuss why it might be important for meteorologists to predict an upcoming hurricane, such as giving people enough time to prepare, protecting buildings, keeping wild animals safe, and so on. There is more information overleaf.

ACTIVITY

Corresponding activity on page 8 of the activity pack: 'Create Your Own Super Storm' is a creative drawing activity where children use a selection of prompts to design their own super storm.

HURRICANE KATRINA: SCENE 6

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

HOW DO HURRICANES AFFECT COMMUNITIES?

When a hurricane hits a community, it can cause a lot of **damage** and **stress**.

Houses and buildings can be destroyed by strong winds or flooded by the heavy rain.

Roads and bridges might get damaged too, which makes it difficult for people to travel or to reach help.

Trees can fall down, and the power might go out, leaving people without electricity.

Sometimes, people need to leave their homes to stay safe - this is called **evacuating**.

Hurricanes can also hurt businesses, schools, and hospitals, making it difficult for people to carry on with their normal lives, such as going to work or going to school.

After a hurricane, it often takes a lot of time and effort to clean up and **rebuild** the community. But, with teamwork, it can be done!

THE IMPORTANCE OF PREDICTING HURRICANES

Predicting hurricanes is very important because it helps keep people safe, and saves lives.

When meteorologists predict where a hurricane might hit, communities have time to **prepare** and **protect** themselves from danger.

Predicting hurricanes also helps communities plan and organise emergency services, like shelters and rescue teams.

It allows businesses and schools to close temporarily to keep everyone safe, and allows farmers and fishermen to be able to protect their crops and boats as much as they can.

Knowing in advance where and when a hurricane will strike next helps reduce any injuries, lower the negative impact on communities, and save lives!

EMERGENCY RESPONSE TEAM: SCENE 7

The material for this scene can be linked to curriculum topics, including: working scientifically; human and physical geography.

Introduce children to the different types of key workers who helped during Hurricane Katrina. Look into the different ways these key workers help people stay safe in all types of extreme weather conditions.



DISCUSSION PROMPTS

- Do you know any of these key workers' jobs?

Encourage children to pick out the key workers they know, such as doctor, coast guard, police, fire services, and so on.

- Do you know what each of these key workers do to help in extreme weather?

Information overleaf

- Why do you think it's important for key workers to get involved when natural disasters, like Hurricane Katrina, occur?

Encourage discussion around how these key workers could each use their individual skills to help people in the face of natural disasters.

ACTIVITY

Corresponding activity on page 9 of the activity pack: 'Key Worker Jumble' is a fun and engaging activity that allows children to match up each key worker with the correct description of what they do to help people.

EMERGENCY RESPONSE TEAM: SCENE 7

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

KEY WORKERS

Emergency response teams can all be classed as **key workers**. Below is a description of each role, and how their jobs keep people safe every day.

Paramedics and doctors

Paramedics and doctors help the sick and injured. They are the workers who make sure people have all the medical care they need to get better.

Fire services

The fire services are the brave workers who put out fires and help rescue people in dangerous situations.

Volunteers

Volunteers are people who help others and their community without getting paid. They get involved in all sorts of job roles to make sure everybody gets the help they need.

Coast guard

The coast guard are workers who save people in trouble out at sea. Part of their job is to also protect the coastlines they work on.

Police

Police officers keep everybody safe by enforcing the law and catching criminals.

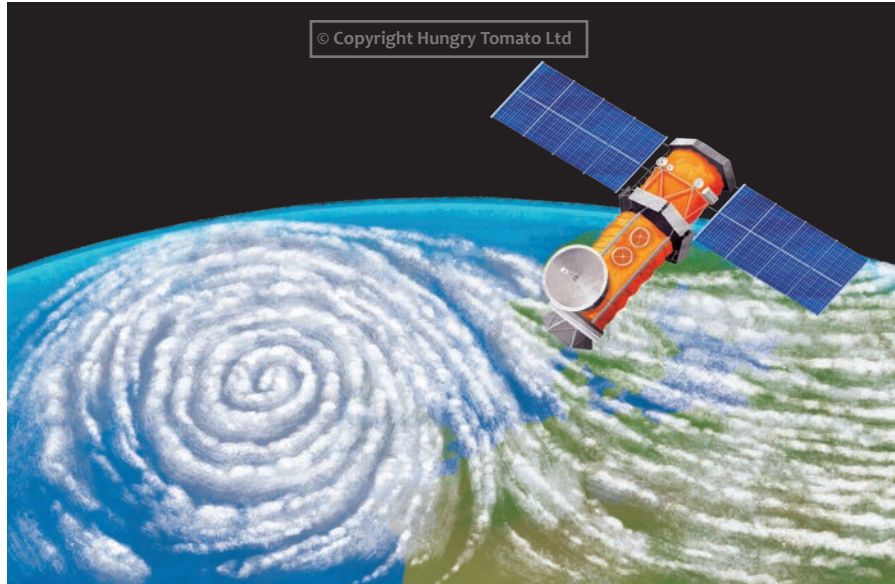
Meteorologists

Meteorologists study the weather and the atmosphere, and keep people safe by predicting and **forecasting extreme weather**.

TRACKING THE HURRICANE: SCENE 8

The material for this scene can be linked to curriculum topics, including: Earth and space; human and physical geography; creative writing and literacy.

Introduce children to the different ways that meteorologists follow extreme weather patterns, such as using satellites. Explore what meteorologists were able to learn about Hurricane Katrina all the way from space.



DISCUSSION PROMPTS

- What is a satellite?

Information overleaf

- How do meteorologists use satellites to track the weather?

Information overleaf

- What do you think you would be able to see from a satellite from space?

How would you feel to be in space, looking down on Earth?

Engage in discussion about what you might be able to see from space, such as different countries, seas, clouds, other planets, and so on. Discuss how it might feel to be in space; give examples of emotions such as feeling happy, scared, excited, and so on.

ACTIVITY

Corresponding activity on page 10 of the activity pack: 'Diary Entry' is a creative writing activity that asks children to write a diary entry as if they were spending a day in space, looking down on our planet Earth.

TRACKING THE HURRICANE: SCENE 8

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHAT IS A SATELLITE?

A **satellite** is a machine that travels around the Earth in space, and never lands.

There are two types of satellite: natural ones (like the Moon), and ones made by humans that we send up to space.

Human-made satellites are able to take pictures, help us talk to each other on Earth, and even help us with directions on Earth.

These satellites move in a path around the Earth called an **orbit**. They are also powered by **solar panels**, which store energy from the Sun.

Satellites help us to learn more about our planet, and the universe beyond!

HOW DO SATELLITES HELP TO TRACK THE WEATHER?

Satellites are very important in helping us understand and predict the weather by taking pictures of our planet from space.

Satellites can see big **weather patterns** on the way, like clouds, storms, and hurricanes.

By looking at the pictures they take, meteorologists can see where bad weather is forming, as well as where it might go next.

Satellites also measure **temperature**, wind speeds, and how much **water vapour** is in the air - all from outer space!

All this information is then sent back to Earth, where meteorologists use special computers to turn it into weather **forecasts**.

Because of satellites, we can be better prepared for all the different kinds of weather on the way!

LETTING EVERYBODY KNOW: SCENE 9

The material for this scene can be linked to curriculum topics, including: seasonal changes; human and physical geography.

Engage children in a discussion about what an evacuation is, and how meteorologists play an important part in helping people stay safe at every step of the evacuation process.



DISCUSSION PROMPTS

- What is an evacuation?

Why do you think it is important for people to evacuate?

Information overleaf

- How do you think evacuating makes people feel?

Give examples of emotions such as feeling scared, annoyed, worried, and so on.

- What are impact zones?

Information overleaf

ACTIVITY

Corresponding activity on page 11 of the activity pack: 'Weather Report' is a creative activity where children describe the type of weather they can see outside and turn it into a forecast fit for a meteorologist!

LETTING EVERYBODY KNOW: SCENE 9

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

IMPACT ZONES

An **impact zone** is an area that is directly affected by a specific event that has happened.

This phrase has many meanings, but for meteorologists, the impact zone is the phrase for an area that experiences the most serious effects of a **natural disaster**.

Examples of these effects include heavy rainfall, shaking ground, strong winds, and flooding.

It's really important that **emergency responders** are close-by to an impact zone to check, provide help, and put in safety measures.

EVACUATION

An **evacuation** is the movement of a large group of people, organised by emergency responders, from a place of danger to a safer area.

An evacuation begins by notifying the correct people about the upcoming dangers, usually by mobile alerts or TV and radio reports.

Next, **evacuation routes** are organised so that people know exactly where and how to leave the area safely.

The next step of an evacuation is for people to move to **designated** safe areas, and for appropriate **resources** to be made available for people in need.

When the natural disaster has passed, some people may be able to move back to their homes, whereas others may have to wait some time while any damage is fixed.

WORKING TOGETHER: SCENE 10

The material for this scene can be linked to curriculum topics, including:
human and physical geography.

Engage children in discussion about how rescue missions are sometimes required to help people in the face of natural disasters, and why it is so important for emergency services to work together to ensure everybody's safety.



DISCUSSION PROMPTS

- Why do you think it is important for people to work together when a natural disaster occurs?

Information overleaf

- What emergency services do you think might be needed in this scene?

Engage children in conversation about what emergency services would help the people in this scene most, such as coastguard, police, doctors, and so on.

ACTIVITY

Corresponding activity on page 12 of the activity pack: 'Rescue Mission' is a line maze activity where children must help the helicopter reach the people in need.

WORKING TOGETHER: SCENE 10

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WORKING TOGETHER IN EXTREME WEATHER

It is very important for **meteorologists** to work together with **emergency services** during extreme weather events, like Hurricane Katrina. Here are a few reasons why:

- By forecasting how strong a type of weather will be, meteorologists can help emergency services understand how much of an **impact** there is going to be.
- By working with emergency services, meteorologists can help share important safety messages and instructions in a clear and understandable way, helping people take appropriate action to protect themselves and their homes.
- By providing real-time updates on changing weather conditions, meteorologists can inform emergency services of the actions they need to take, such as adjusting **evacuation routes**, setting up shelters, or deciding where to send equipment.
- By learning from previous **extreme weather** events, meteorologists and emergency services can learn useful lessons that improve **response plans** for future **natural disasters**.

Teamwork between meteorologists and emergency services is vital for keeping people safe, keeping damages low, and making sure the response to extreme weather conditions is the best it can be.

WATCHING THE WEATHER: SCENE 11

The material for this scene can be linked to curriculum topics, including: seasonal changes; human and physical geography.

Introduce children to the importance of watching the weather, and how meteorologists keep a close eye on sudden changes in the atmosphere to predict upcoming weather. Focus the discussion on how volcanoes can affect the weather.



DISCUSSION PROMPTS

- Why do you think it is important for meteorologists to watch the weather with their own eyes?

Information overleaf

- What is a volcano?

Information overleaf

- How do you think a volcano might affect the weather?

Engage children in conversation about how volcanoes might affect the weather and the places around them, such as smoke, lava, loud noise, and so on. Information overleaf.

ACTIVITY

Corresponding activity on page 13 of the activity pack: 'Word Eruption' is a fun word scramble that encourages children to unjumble the weather-related words so they make sense again!

WATCHING THE WEATHER: SCENE II

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHY IS IT IMPORTANT FOR METEOROLOGISTS TO WATCH THE WEATHER WITH THEIR OWN EYES?

As important as weather tools and new technology are in predicting the weather, it is also useful for meteorologists to look up at the weather, too!

Sometimes, there are things that are easier to observe in person, rather than using a weather tool. This might include the way the sea looks and moves, the colour of the sky, or how warm or cold it feels outdoors.

By watching the weather closely, meteorologists are able to spot changes as and when they happen, even if they're only small.

VOLCANOES

A volcano is an opening on the surface of our planet; it looks like a mountain and can **erupt** with very hot, melted rock called **magma**. Magma comes from deep under the Earth's surface.

When a volcano erupts, the magma comes out of the top part, which is called the **vent**. Once aboveground, the magma is called **lava**.

This lava can flow down the side of the volcano and continue to spread for a long time, and over long distances. However, some types of lava move much quicker than others!

Volcanic ash and gas often leave the volcano too, which can make the air surrounding the volcano **toxic**, and can even block out the sunlight. This can make the world get colder.

Volcanoes can be all shapes and sizes, and some can even be found underwater!

Volcanoes are amazing natural features, but they can be very dangerous when they erupt. Scientists called **volcanologists** watch them very closely.

Meteorologists also study them to understand the effect that **volcanic ash** has on the weather.

SAVING LIVES IN SMALL WAYS: SCENE 12

The material for this scene can be linked to curriculum topics, including: seasonal changes; human and physical geography.

Encourage discussion about the small ways that meteorologists save lives each day, as well as the big ways with events such as Hurricane Katrina. Explore why saving lives in small ways is just as important.



DISCUSSION PROMPTS

- What sort of sports might you not be able to do because of the weather?
Give examples of sports, such as rugby, tennis, surfing, skiing, and so on.
- Why do you think weather forecasts are so important every day, not just for predicting extreme weather?
Information overleaf
 - How does the sunshine make you feel, compared to the rain?
Encourage children to discuss how different sorts of weather make them feel.

ACTIVITY

Corresponding activity on page 14 of the activity pack: 'Dangerous Skiing' is a fun and engaging spot the difference activity.

SAVING LIVES IN SMALL WAYS: SCENE 12

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

IMPORTANCE OF EVERYDAY WEATHER FORECASTS

Weather forecasts are important every day for many reasons, not just during extreme weather. Here are some key reasons why daily **weather forecasts**, made by meteorologists, matter so much:

- **Sports and leisure activities:** everyday forecasts allow us to plan outdoor activities and sporting events. They allows organisers to cancel if the weather makes it too dangerous!
- **Health:** for some people, the weather dramatically affects their health. Weather forecasts are very important for people's health. Daily forecasts can alert people that they need to take **precautions**.
- **Travel:** airlines and train companies use daily weather forecasts to decide whether they need to cancel or postpone their services.
- **Work:** as well as farmers, lots of other jobs rely on weather forecasts to decide if they can go ahead with their day-to-day work. Fishermen will always pay attention to forecasts - if it's too stormy, it isn't safe to fish out at sea. Construction workers often need to know what the weather will bring if they are completing jobs that will be affected by weather.

There are many other ways that weather forecasts help us every day. These are just a few that show how important the work meteorologists do really is.

AFTER THE STORM: SCENE 13

The material for this scene can be linked to curriculum topics, including: working scientifically; human and physical geography.

Conclude by discussing how meteorologists felt after Hurricane Katrina, and how they used what they learnt from this event to improve for future extreme weather events.



DISCUSSION PROMPTS

- **How do you think meteorologists felt after Hurricane Katrina?**
Give examples of emotions, such as happy, relieved, motivated, and so on.

- **What do you think meteorologists learnt from Hurricane Katrina?**
Information overleaf

- **Would you like to be a meteorologist one day?**
Engage children in conversation about the job of a meteorologist, and if they think they would enjoy any parts of the job.

ACTIVITY

Corresponding activity on page 15 of the activity pack: 'Predicting the Weather' is a fun decoding activity where children have to use the code to decipher the hidden meteorologist message.

AFTER THE STORM: SCENE 13

RELEVANT INFORMATION

Keywords that you may want to pull out and explain have been put into bold.

WHAT DO YOU THINK METEOROLOGISTS LEARNT FROM HURRICANE KATRINA?

After Hurricane Katrina was over, **meteorologists** looked back on this extreme weather event to see how useful their hard work had been, and how they could improve for the next big storm.

Here are a few things that meteorologists discovered after Hurricane Katrina:

- Thanks to meteorologists, the overall **evacuation rate** for Hurricane Katrina was 80%. This was an impressive achievement! Thanks to the meteorologists' predictions, the **emergency response team** and all key workers were able to act in the correct areas, and in the correct way. By all of these teams working together, they were able to save lives.
- Meteorologists discovered that, thanks to their prediction on the Gulf Coast, they were able to give people 56 hours' notice of the storm that was on the way, and therefore plenty of time to **evacuate**. Compared to previous forecasts of hurricanes, this was very impressive indeed!
- Despite their successes, meteorologists found ways they could improve, thanks to all they had learned from Hurricane Katrina.

When big natural events like Hurricane Katrina happen, meteorologists are able to take all they have learnt and apply it to how they deal with the next extreme weather that comes their way.

The more meteorologists learn, the safer we can all be.

POST-READING QUESTIONS

Engage in discussion about the journey taken throughout the book and the facts that were uncovered, with the suggested questions below.

- Were you surprised to learn that weather forecasts created by meteorologists can save lives?
 - Did anything else in the book surprise you?
 - What's the coolest thing you've learnt from this book?
 - Do you have a favourite type of weather?
-

ACTIVITY

Corresponding activity on page 16 of the activity pack: 'Write Your Own Meteorology Story' is a creative writing activity where children are encouraged to write their own story about meteorology, using the three words provided as inspiration.

THE BIG QUESTIONS ANSWERED

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