



# ADDITIONAL RESOURCE PACK

*Classroom*  
**VIDEO**  
Education with Vision

## Positive and Negative Impacts of UK Weather Systems

Produced by:  
*Classroom Video Limited*

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Commissioning Editor:  
*Dee Powell*

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Writer:  
*Sean Luckett*

Director:  
*Thomasina Gibson*

Executive Producer:  
*Simon Garner* B.Ed, Dip Management

### ***For Teachers***

#### **Brief Summary of Programme**

The changeable nature of the weather in the British Isles has an impact on our everyday lives from travel arrangements to sporting fixtures. This programme examines the how low and high pressure weather systems operate before identifying the impacts on human activity. Through this film you will compare the positive and negative impacts of the high and low pressure systems. Discover how the cold conditions of winter anticyclones can bring advantages to some farmers while the heavy rains of depressions can lead to a range of problems such as contaminated water supplies.

#### **DVD Timeline**

00:00 – 01:10	Introduction
01:10 – 04:24	Climate of the British Isles
04:24 – 07:45	Low Pressure (Depressions) – The Problems
07:45 – 14:00	Positive Impacts of Lows
14:00 – 18:07	The Impacts of Summer Anticyclones
18:07 – 21:08	The Dangers of Winter Anticyclones
21:08 – 22:00	Conclusion

#### **Other Background Information for Teachers**

Many GCSE and AS/A-Level specifications require students to demonstrate an awareness of high and low pressure systems and the challenges or opportunities they bring. The first chapter of this programme should reduce the confusion students often experience in understanding the difference between high and low pressure systems and their respective characteristics. The diagrams and images aim to help students become more confident in describing how each system moves across the UK.

This DVD should complement work in class using satellite imagery or synoptic charts so that students are aware of the dynamic nature of these weather systems and can easily identify them. The Suggested Activities after the Programme includes a worksheet with links to satellite imagery.

Weather in the British Isles is often referred to in a negative context but it is important to recognise that while the weather systems can present major hazards such as flooding they also bring many benefits to our society and economy. The DVD will broaden students' knowledge of the impacts of weather beyond the familiar example of flooding.

This programme can be used to introduce the topic of weather systems but is equally suited for use as a consolidation activity at the end of the relevant unit.

### Curriculum Links

GCE GEOGRAPHY (AQA)

Unit 3 – Weather and Climate and Associated Hazards

AS GCE GEOGRAPHY (CCEA)

Unit AS 1: Physical Geography - Element 3 (b) Mid-latitude weather systems

GCE GEOGRAPHY (WJEC)

Unit G3: Theme 3 – Climatic Hazards

AS GCE GEOGRAPHY (EDEXCEL)

Unit 2: Topic 1 Extreme Weather

GCSE GEOGRAPHY (CCEA)

Unit 1: Theme B - Weather Systems Affecting the British Isles

GCSE GEOGRAPHY A (AQA)

Unit 1: Physical Geography – Challenge of Weather and Climate

GCSE GEOGRAPHY B (WJEC)

Theme 2: People and the Natural World Interactions

### Related DVDs available from Classroom Video Ltd.

*Weather and Climate* (2009)

*Climates of the World* (2006)

*Floods* (2006)

*Wind* (2003)

*Weather Forecasting* (2000)

Please contact customer services on 0117 929 1924  
or visit [www.classroomvideo.co.uk](http://www.classroomvideo.co.uk) to see our full range of Geography related titles.

### Other Useful Links

<http://www.metoffice.gov.uk/education/>

The education section of the Met Office website with weather case studies for pupils and resources for teachers.

[www.bbc.co.uk/weather/weatherwise/factfiles/basics/weathersys\\_fronts.shtml](http://www.bbc.co.uk/weather/weatherwise/factfiles/basics/weathersys_fronts.shtml)

This is part of the Weatherwise section of the BBC Weather website explaining how fronts move across the UK.

[www.bbc.co.uk/weather/weatherwise/living/](http://www.bbc.co.uk/weather/weatherwise/living/)

Another section of the BBC Weather website covering how weather impacts human activity

<http://www.metlink.org/>

The educational portal of the Royal Meteorological Society which includes lesson plans and lots of weather and climate resources for teaching.

### **Suggested Activities for Before Viewing the Programme**

1. What is the weather?
2. Find out how the various elements of the weather are measured.
3. Describe three occasions when your plans have been affected by the weather.
4. Can you identify any patterns in the weather of the British Isles? For example when do you think temperatures are highest or lowest? When do we receive the most or least precipitation?
5. Use a map of Europe to identify and label the five main air masses which affect the UK. These could be colour coded to reflect their characteristics e.g. Tropical, Polar etc. It is these air masses which determine the weather patterns you examined in question 2.

**Student Worksheet 1**

**Viewing Questions**

1. How many seasons does the UK experience?

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2. Define the term climate.

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3. List three factors which can determine the climate of an area:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

4. Air moves from an area of low pressure to an area of high pressure. True or False?

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5. High pressure systems are also known as \_\_\_\_\_ and low pressure systems are also known as \_\_\_\_\_.

6. What type of weather is associated with a summer anticyclone?

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7. How many people are at risk from flooding in England and Wales?

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8. Describe two ways in which regular, reliable rainfall benefits farmers in the UK.

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

9. Why can the construction of wind farms be contentious?

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10. How much is the tourism industry worth to the UK economy?

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11. Describe three health risks associated with a summer anticyclone.

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

12. List two negative impacts of a big freeze like that experienced in the UK during the winter of 2009.

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

### Suggested Student Responses

1. How many seasons does the UK experience?

**Four.**

2. Define the term climate.

**The average weather for an area, taken over a period of time usually 30 years.**

3. List three factors which can determine the climate of an area:

- **Distance from the sea**
- **Height above sea level**
- **Distance from the Equator**

4. Air moves from an area of low pressure to an area of high pressure. True or False?

**FALSE. Air always moves from high to low pressure. A simple experiment with a balloon can demonstrate this.**

5. High pressure systems are also known as **ANTICYCLONES** and low pressure systems are also known as **DEPRESSIONS**.

6. What type of weather is associated with a summer anticyclone?

**Heatwave conditions – dry and warm.**

7. How many people are at risk from flooding in England and Wales?

**5 million.**

8. Describe two ways in which regular, reliable rainfall benefits farmers in the UK.

- Water necessary for growing of crops**
- Creates farmland which is perfect for grazing animals e.g. cattle.**

9. Why can the construction of wind farms be contentious?

**Wind farms can have an impact on the environment e.g.**

- Wind farms on elevated sites such as hills can have a detrimental impact on the landscape**
- Wind farms located off the coast can generate sounds which confuse sea creatures e.g. Dolphins which use acoustic signals for their own navigation.**

10. How much is the tourism industry worth to the UK economy?

**£150.4 Billion.**

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11. Describe three health risks associated with a summer anticyclone.

**Any three from:**

- (i) Heat stroke**
- (ii) Sun burn**
- (iii) Breathing difficulties associated with pollution in urban areas**
- (iv) Dehydration**

12. List two negative impacts of a big freeze like that experienced in the UK during the winter of 2009.

**Any two from:**

- (i) Transport chaos e.g. Eurostar train services cancelled**
- (ii) People unable to get to work**
- (iii) Surge in the number of insurance claims for damage to property e.g. burst pipes**
- (iv) Life threatening to some groups within the population e.g. elderly**
- (v) Farmers, frost can kill pests but prolonged or severe frosts can damage crops**

### Suggested Activities for After Viewing the Programme

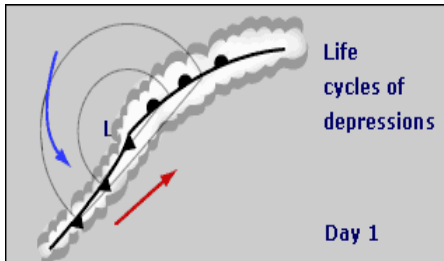
1. Use the internet to research the impacts of weather in your local area and write a short newspaper style report of 200 words on your findings. You may also wish to use primary sources e.g. is there anyone you know who remembers the event and could share their experiences?
2. Investigate the problems other countries experience due to their weather e.g.  
Pakistan – Monsoon Floods  
Ethiopia - Drought.
3. Use **Student Worksheet 2** to learn more about the sequence of weather associated with low pressure systems
4. In groups discuss how you would tackle the negative impacts of high and low pressure weather systems in the UK.

## Student Worksheet 2

### Understanding Depressions

Once you accessed the internet go to the web-site:

<http://www.bbc.co.uk/weather/weatherwise/factfiles/thebasics/weathersystems/fronts.shtml>



Scroll down to the moving image shown here. This shows the passage of a depression over a 5 day period. Watch the changing image and note down 4 facts about the depression.

Answer the following questions:

Which direction does a depression rotate?	
Which compass direction does it move?	
Which front moves faster?	
What signals the death of a depression?	

## Positive and Negative Impacts of UK Weather Systems

Now go to the Met Office home page (<http://www.metoffice.gov.uk/>) and click on the UK forecast.

### Looking at Today's Weather

You will see a summary weather map like the one you would see on a television weather forecast (see below). Before you look at the other maps available, **look outside the window** and note down the weather conditions (presence of cloud, rain, wind etc.)

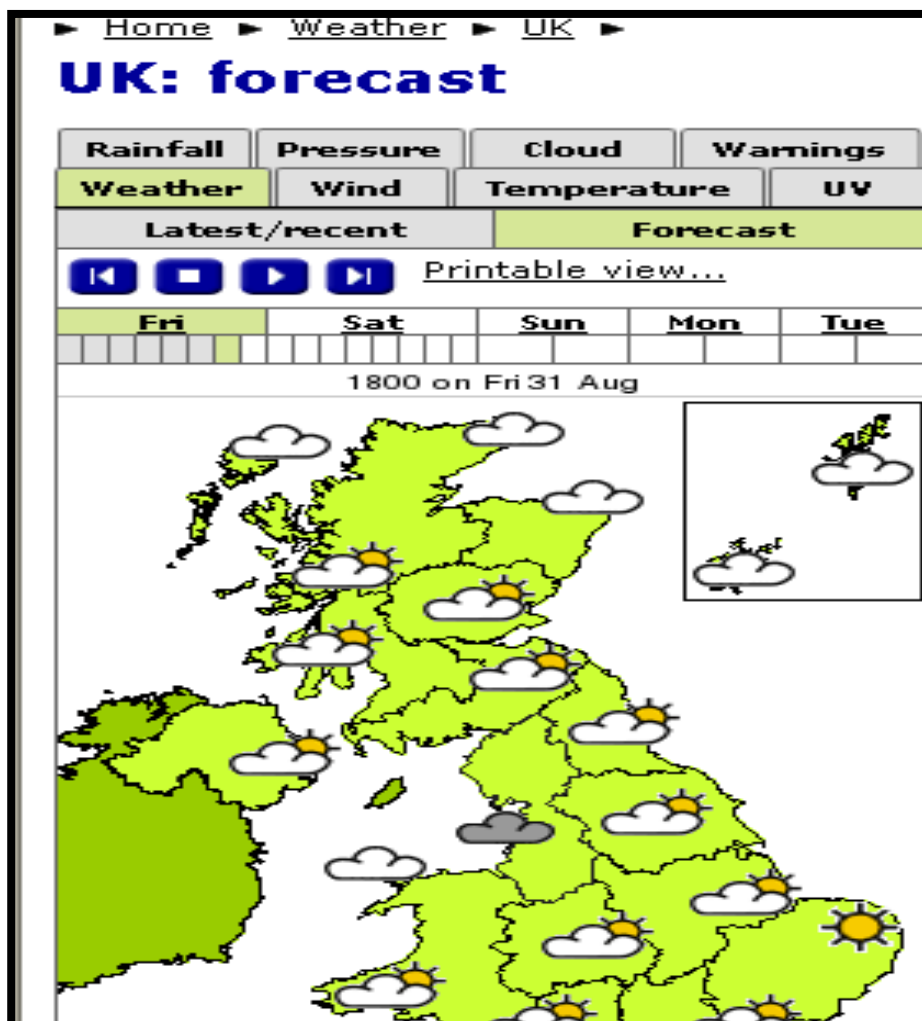
#### PRESENT WEATHER

DATE:        /        /

TIME:

DESCRIPTION OF WEATHER:

I THINK MY AREA IS CURRENTLY UNDER A HIGH / LOW PRESSURE SYSTEM (underline your choice)



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Select the **area of the map where you live** from the drop down menu and fill in the table with the information provided about the weather.

<b>Temperature (°C)</b>	
<b>Pressure (mb)</b>	Was your estimation correct? <b>YES / NO</b>
<b>Wind direction</b>	
<b>Rainfall pattern</b>	

**\*\*\*Refer to names of places from the maps\*\*\***

Finally, go to [www.metoffice.gov.uk/weather/uk/latest.html](http://www.metoffice.gov.uk/weather/uk/latest.html) and click on **SATELLITE** IMAGERY to watch the changes on the map. Press the play icon to see the changes over the next 24 hours.

Describe what is happening on the map in the box below.

<b>DESCRIPTION OF CHANGES:</b>
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If you are finished early – click on **Weatherwise** from the BBC Weather website (<http://www.bbc.co.uk/weather/weatherwise/>) and go to the **games section** and try the **weather quiz**.