



# Weather heroes



# Introduction

## Overview

This lesson introduces students to an exciting range of careers in weather and climate and the variety of skills that will prepare them for such careers. The activity centres around real-world challenges based on the careers involved in supporting communities. By problem solving in teams, students understand how both their knowledge of Science, Technology, Engineering and Maths (STEM), and a range of wider transferable skills, are key to these roles.



## Time required

70 minutes for all activities (or less if individual tasks are selected)



## Materials required

- Weather heroes film
- Weather heroes slides
- Challenge cards (available on page 6)
- Catalyst cards (available on page 7)
- Pens and paper

## Learning objectives

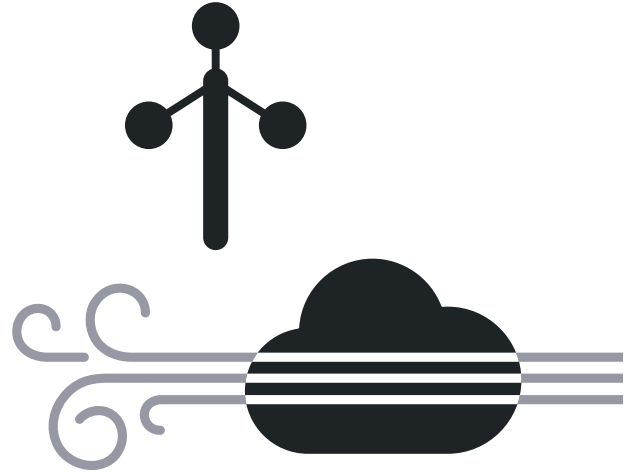
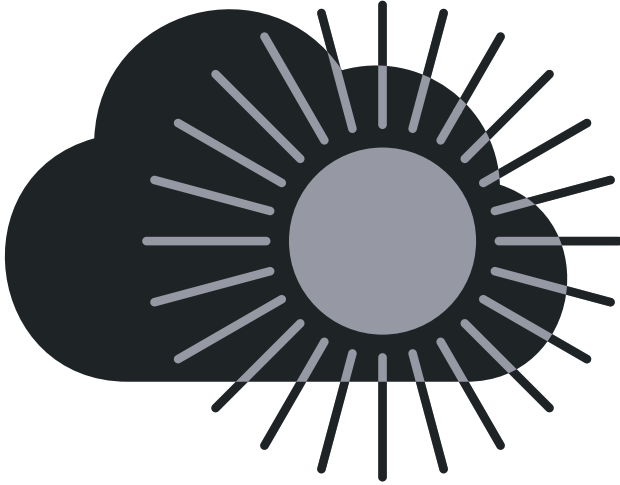
This lesson will enable students to:

- Identify a range of different careers that involve the weather and climate
- Develop understanding of the skills needed for careers in weather and climate
- Explore through teamwork, the complexity of working through challenges associated with severe weather events and develop problem solving skills
- Identify and develop the skills people with careers involving extreme weather conditions would use

## Curriculum links

- **English literacy and language** – written and verbal communication
- **Science/sciences and technology** – prediction and evidence
- **Geography/social studies/the world around us** – observation, data collection and communicating data
- **Art and design/expressive arts** – storytelling
- **PSHE and citizenship/PSE/health and wellbeing/PDMU** – evaluating personal strengths, interests, skills and links to employment

# Activity steps



## 01

Start by asking the class a few questions to test their existing knowledge:

- What career paths in weather and climate work are you aware of? (These could include: meteorologist; hydrometeorologist; climate scientist; environmental scientist; data scientist; data visualiser; engineer; communications expert; computer scientist; software engineer; oceanographer)
- What skills do you think are key to a career in weather and climate? (Draw out answers like problem solving, collaboration/teamwork)
- Who makes use of weather and climate information in their job?

Discuss students' answers briefly, writing them on the board or getting them to record them in their notebooks.

Next, play the short weather heroes film. Ask students to identify the careers referenced in the film (e.g. communications experts, archivists, technologists), ensuring they understand what each job title means and what it involves. Which skills are mentioned towards the end (e.g. Science, technology, engineering, mathematics, social sciences, arts)? Explore further transferable skills that could be needed for these roles (e.g. approaching problems calmly, thinking creatively, working well with others).



15 minutes



Individual task



Weather heroes film



Slide 2

# Activity steps

Conclude that there are a range of exciting roles at the Met Office and that these require lots of different types of personalities and skillsets. Divide your class into groups of 3-4.

## 02

Give each group a challenge card (found on page 6) that focuses on the role of someone who works in weather or climate and sets them a challenge based on a real-world scenario. A reminder of the main 'characters' and roles from each of the challenges can also be shown on the corresponding slide. To solve the problem posed, each group will need to work together to decide on the best course of action. The flow diagram on the supporting slide can help guide them on how to structure their plan. Their response should include the following:

- An overview statement of the problem they are solving
- The cause of the challenge that they are responding to
- Possible options to meeting the challenge
- The solution which has been selected to be implemented
- An evaluation of this solution as an outcome with pros and cons addressed for the discarded alternatives

## 03

Explain to the class that they need to include real examples of how they would approach the challenge and respond to the scenario effectively in the world of work.

If they can access the internet, tell the groups to research a similar real-world scenario and explore how people working in weather and climate need a variety of skills to navigate through complex problems.

To help understand the challenges they research, the groups can produce a mind map which contains key details such as: event, location, time, steps to take and skills required.

To add an extra dimension to the challenge, circulate amongst the groups and hand each a catalyst card (found on page 7) that relates to their scenario. You can also show these on the screen using the corresponding slide. These introduce a last-minute issue or problem they must solve.



15 minutes



Groupwork



Slides 3 – 4



Challenge cards



25 minutes



Slide 5



Groupwork



Catalyst cards

# Activity steps

Invite each group to present their ideas to the classroom, and reflect on the skills they had to use and the ideas they came up with, using prompt questions such as:

- What skills and qualities would someone working in this career need to solve the challenge you faced?
- Are these skills you could use for other careers? Which ones?
- What career path do you want to pursue and why? Which skills are required?

## 04

Bring the lesson to a close by asking the class to explain what they have learned, linking this back to the lesson's main objectives. Test students on their learnings from the session with a few 'pop quiz' style questions displayed in the slides:

- Who can name the five steps they followed to solve their problem? (Use Step 2 as a hint)
- Who can name three different career paths in weather or climate?
- Who can identify three possible situations when someone who works in weather or climate has to problem solve?

Ask the students to reflect on their own skills and where their strengths might help them do a similar job to the case studies in the future. If time allows, invite the class to write down one or two 'career goals' which could include a skill they want to develop or even something they would like to achieve by a certain age. How would they build out an action plan for getting the skills needed for these jobs?

Recap that there is an exciting range of careers in weather and climate, and that a crucial part of most of these roles is being a good problem solver. As well as this, it's important to build a range of other transferable skills which can be relevant to a number of different roles and industries.



15 minutes



Individual task



Slides 6 – 7

# Weather heroes challenge cards

**Katie:** I'm a partnerships manager for the Met Office. Part of my job is to look after the 'Weather Ready' campaign. I want to make sure the campaign reaches older people as they are a key target group, but older people are less active online and on social media. Can you help me make a plan to reach this audience?

**Find out more:**

[www.metoffice.gov.uk/about-us/careers/working-here/our-stories/katies-journey](http://www.metoffice.gov.uk/about-us/careers/working-here/our-stories/katies-journey)

[www.metoffice.gov.uk/weather/warnings-and-advice/seasonal-advice/about-weatherready](http://www.metoffice.gov.uk/weather/warnings-and-advice/seasonal-advice/about-weatherready)

**Alex:** I'm an operational meteorologist for the Met Office. Part of my job is to prepare graphics and brief the weather presenters. A storm has been predicted. The presenter will only have 1 minute and 40 seconds to deliver the report. Can you help me prepare a concise but accurate briefing for them?

**Find out more:**

[www.metoffice.gov.uk/about-us/careers/working-here/our-stories/alexs-journey](http://www.metoffice.gov.uk/about-us/careers/working-here/our-stories/alexs-journey)

[www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2019/2019\\_005\\_storm\\_hannah.pdf](http://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2019/2019_005_storm_hannah.pdf)

**Kemi:** I'm a software tester for the Met Office. I work as part of a team to build software for our services to aviation. It's really important that the software works correctly. I need to make sure the new software is unbreakable, by trying to break it! Can you help me make a plan for how to break it?

**Find out more:**

[www.metoffice.gov.uk/about-us/careers/working-here/our-stories/kemis-journey](http://www.metoffice.gov.uk/about-us/careers/working-here/our-stories/kemis-journey)

[www.metoffice.gov.uk/research/applied/aviation](http://www.metoffice.gov.uk/research/applied/aviation)

**Chris:** I'm an IT analyst for the Met Office. Part of my role is to make sure staff are aware of cyber security practices and give guidance to staff and projects. Can you help me make a plan of action for writing and distributing a guidebook on cyber security for staff, even those that are not very confident with technology?

**Find out more:**

[www.computing.co.uk/ctg/news/2458460/met-office-establishes-dedicated-security-operations-centre-as-it-changes-approach-to-it-security](http://www.computing.co.uk/ctg/news/2458460/met-office-establishes-dedicated-security-operations-centre-as-it-changes-approach-to-it-security)

# Weather heroes catalyst cards

## **Katie**

Find out about another real-world campaign that successfully managed to reach people who don't normally use digital. How did they do it?

[www.econsultancy.com/how-brands-are-using-digital-marketing-to-reach-the-older-generations/](http://www.econsultancy.com/how-brands-are-using-digital-marketing-to-reach-the-older-generations/)

## **Alex**

Find some examples of weather reports for hazardous weather. Can you find one that is done really well and one that is done badly? What was good or bad about them? How could they have been improved?

[www.youtube.com/results?search\\_query=storm+weather+forecast](http://www.youtube.com/results?search_query=storm+weather+forecast)

## **Kemi**

Can you find some examples of test cases written by quality assurance testers? Try to find a good example and a bad example and explain what makes them good or bad.

[www.tryqa.com/what-is-test-design-or-how-to-specify-test-cases/](http://www.tryqa.com/what-is-test-design-or-how-to-specify-test-cases/)  
[blog.testlodge.com/characteristics-good-software-tester/](http://blog.testlodge.com/characteristics-good-software-tester/)

## **Chris**

Can you find some real life guides to cyber security online? Pick out the best one and the worst one you can find. Would someone who isn't tech savvy be able to understand it?

[www.opendatasecurity.io/wp-content/uploads/2017/11/Cybersecurity\\_Guide\\_For\\_Dummies\\_Compressed.pdf](http://www.opendatasecurity.io/wp-content/uploads/2017/11/Cybersecurity_Guide_For_Dummies_Compressed.pdf)