

Activity 4: Weather web page challenge

Learners at Portland Young Offenders Institution helped to develop this activity. Their teacher commented that: “This is a great activity... It shows learners how they can apply their skills to realistic working environments and provides challenge and interest.” One of the learners commented: “I have learned something beyond my knowledge today – it is very interesting.”

Introduction

The **Tour of the Met Office – multimedia presentation** highlights the challenge of collecting weather data, processing it and turning it into a useful information product for the customer. This activity aims to give learners a flavour of that process while providing insight into data handling issues, such as working with coded data.

The activity involves becoming familiar with authentic, real-time coded weather data, as used by pilots. This can be daunting at first glance, but learners enjoy the challenge of decoding the data and turning it into a useful and accessible web page. There is a web design aspect to the task that can be given a central role or a supporting role, depending on your curriculum.

This activity is experiential; it is about learning by doing. Learning can be enhanced if learners tackle the task in small co-operative teams and use peer review – an integral part of the activity.

Learning objectives

Learners should be able to:

- improve their research skills
- develop data handling skills, especially using coded data
- develop skills in transforming data into useful information on a web page.

Learners will also be able to develop peer review and teamwork skills, and improve their communication skills, both oral and written.

Resources required

- The **Tour of the Met Office – multimedia presentation** – available on computers and via data projection, if possible.
- Computers with access to the internet or downloaded data from the Met Office website.
- A copy of the scenario you wish to use (customised for your learners), and/or a specification for the web page.

Obtaining and working with authentic coded weather data

You will need to familiarise yourself with the aviation briefing pages of the Met Office website before embarking on the activity with learners.

The easiest way to find the correct pages is to put 'aviation briefing' into the search facility on the home page. Make sure you look at the 'aviation briefing service', not the 'airline briefing service'. You will need to log in using your name and address. The service is free.

You will find that the aviation briefing pages offer two kinds of real-time weather data: TAFs (Terminal Aerodrome Forecasts) and METARs (Meteorological Airfield Reports). You will find data for locations throughout the British Isles plus guidance on how to decode TAFs and METARs. You may decide to use either the TAFs or the METARs and you may want to direct your learners towards looking at the data for a particular airfield. You will be able to download the relevant data if your learners do not have internet access.

You and your learners do not have to master all the complexities of using the coded aviation weather data; you need just enough knowledge to extract some key information for the weather web page.

Planning learning in multiple environments

This activity can be integrated into individual learning plans in a number of ways.

- As independent study, outside of formal learning sessions. Peer review can take place electronically.
- As an activity in the workplace, perhaps with another learner who is on placement at the same company.

The activity is a particularly good vehicle for embedding literacy, language and numeracy (LLN) and should fit easily into learning plans where learners are working towards key skills as well as IT qualifications.

Starting points

The **Tour of the Met Office – multimedia presentation** and the previous activities in this section of the resource provide a good foundation for this activity. **Activity 3: Coding the weather** will be an essential precursor for most learners, so that they understand the principles of coding weather information.

Learners could review the final section of the multimedia presentation – Information products.

If your learners are working in co-operative learning teams they will need to have agreed team ground rules. The Co-operative learning area of the IT resources provides detailed guidance on using a co-operative approach.

Suggested approaches

Stage 1: Introducing the task

Present a scenario, for example.

You are the IT specialist who is supporting a major three day 'Festival of Flight' event. Attractions will include flying displays and helicopter rides. Your job includes setting up a weather page on the event website so that the public can see what the flying weather is like each day.

Or

You have a friend who belongs to a model aircraft flying club. The club asks you to produce a weather web page for their website so that members can see what the flying weather is like.

You may like to briefly show an example of a TAF or METAR report for a local airfield and explain that they will be working with authentic data, as used by real pilots, and turning it into something user friendly. However, avoid too much explanation – the challenge is for learners to grapple with the coded data themselves.

Stage 2: Planning

Working in small groups or co-operative learning teams of three, ask learners to think about the users of the web page, such as people taking photographs, people wanting a helicopter ride, people flying model aircraft and so on. What information will the users want to see on the web page?

You may wish to convene a short plenary to agree a specification for the web page that the whole group may use. See the example below.

The weather page should include:

- a short news item on today's flying weather, complete with a suitable headline, for the general reader
- a table showing the aviation weather in more detail: wind speed, visibility, cloud cover and height, temperature
- a graphic showing the wind direction as an arrow
- a photograph that captures the general weather situation.

Alternatively, you may wish to introduce a greater challenge by allowing learners to develop their own specification for the weather page. Co-operative learning teams can hold an initial team meeting at this stage to specify the web page and allocate roles.

Team roles for a team of three might be structured as:

- team facilitator and discussion leader
- graphic designer and picture editor
- text editor and jargon buster.

Stage 3: Finding and decoding relevant data

Give learners a clear instruction to search for the 'aviation briefing service' not the 'airline briefing service'. The easiest way to do this is to put 'aviation briefing' into the search facility on the home page of the Met Office website.

Guide your learners through the process of logging onto the aviation briefing service on the Met Office website. They will need to give their name, but can use the address of their learning provider. When asked about their purpose, they can insert 'study' in the box marked 'other'.

Learners investigate the aviation briefing pages and identify the coded data that they will use. They can do this individually, or in pairs. Teams can then come together to discuss and decode the relevant data.

Assessment for learning

Carefully observe how learners approach both their individual work and their work with others. Invite learners to join you in learning conversations about how their work is progressing. Instead of asking 'Are you okay?' try asking 'What are you finding difficult?' or 'What would you like to know more about?'

Stage 4: Implementing the web page

Learners collect or create digital assets to implement their design. They might need to do some or all of the following, depending on their specification for the weather page.

- Take a digital photograph of the current weather or download a suitable copyright-free image from the internet.
- Write the text for a news item about today's weather.
- Create a wind direction graphic.
- Create a table based on the data that they have decoded.

Stage 5: Peer review

Learners review each other's web pages and provide feedback. This can be done in a number of ways. Pair and share or a peer panel are two possible approaches. Guidance on using these approaches can be found in the Peer review area of the IT resources. Learners can then improve their web pages in response to the feedback.

Stage 6: Consolidating and reflecting

Team themes is a technique from the Peer review area of the IT resources. It involves learners reviewing how well they worked together as a team and giving each other feedback on their team citizenship. You might consider awarding bonus marks to individuals who are nominated by their teams for making an exceptional contribution.

Alternatively, you might consider a technique called 'Role review', in which the people from each team who hold the same role come together to reflect on their experience of performing that role and think about how they might do it differently in the future. Further guidance can be found in the Peer review area of the IT resources.

This kind of reflection is essential if you are seeking to embed co-operative learning and peer review principles.

You might also encourage your learners to discuss how they coped when faced with something daunting, such as the TAF or METAR data.

- What did they find most difficult? Why?
- What strategies did they use?
- How might these be applied to learning other difficult topics?

This kind of reflection will help learners to become more expert in their own learning.

Differentiation

Learners can work with the TAF or METAR coded data at their own level. Some will find it sufficiently challenging just to decode the wind speed, temperature and visibility. Others will set themselves the challenge of decoding the whole bulletin.

Organising learners into small co-operative learning teams opens up many opportunities for learners to be supported by peers or give support to others, while team roles allow individuals to practise skills that they need to develop.

Alternative approaches

If learners find it too difficult to use the TAF or METAR coded data, they might try using the AIRMET regional forecasts from the Met Office aviation pages. These are still quite technical, but provide some narrative, making them easier to use.

More confident learners may like to combine weather data from several sources. They may even be able to use satellite and radar images to help them comment on current cloud cover and rainfall in the relevant location.

What learners might do next

Learners studying web design might undertake an appraisal of the Met Office website and produce a report suggesting improvements.

Learners with an interest in hardware and telecoms might investigate how an automated weather station works. Some colleges have their own weather stations, often for manual observations. Learners might propose how the weather station could be updated so that observations are automatically fed into the college intranet.