

Lesson 3: Climate in Japan

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Learning Objectives:

- Describe the climate of Japan.
- Investigate climatic variations across the country and throughout the year.
- Analyse, evaluate and present weather data from Japan using Excel.
- Evaluate when would be the best time to visit Japan.

Curriculum Links:

National Curriculum in England for **Geography** KS1 and KS2:

- Identify... the location of hot and cold areas of the world in relation to the Equator and the North and South Poles; use basic geographical vocabulary to refer to... season and weather.
- Describe and understand key aspects of physical geography including climate zones.

National Curriculum in England for **Science** KS1:

- Observe changes across the four seasons, observe and describe weather associated with the seasons and how day length varies.

National Curriculum in England for **Computing** KS2:

- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

See the National Curriculum for further details:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425601/PRIMARY_national_curriculum.pdf

Keywords:

Weather, climate, temperature, precipitation, temperate, variations, data.

Resources:

Presentation: Climate

Worksheets: Task 1 (Weather Forecast), Task 2 (Weather Data), Alternative Task 2

Excel File: Monthly Weather Data

Websites:

BBC Teach: <https://www.bbc.co.uk/teach/class-clips-video/geography-ks1--ks2-climate/zjdthbk>

Japan Meteorological Agency:

<https://www.jma.go.jp/bosai/map.html#5/34.5/135/&contents=forecast&lang=en>

Starter

- **Slide 1:** Ask pupils to look at the images and ask, 'What is the weather like in Japan?'. Encourage pupils to use information from the pictures or their own prior knowledge and learning from this topic. TTYP: What does 'weather' mean? Make a class list of language we use to describe weather.

Estimated Time: 5 minutes

Introduce Learning

- **Slide 2:** Introduce the Learning Objectives, explaining any key words as necessary. Ask pupils why they think it is important to collect and analyse weather data.
- **Slide 3:** In the first slide, students were asked about the weather in Japan. But how are the terms 'weather' and 'climate' different? Show the BBC Teach video to explain the distinction. Check understanding by asking pupils to TTYP to explain the difference between weather and climate.
- If necessary, reiterate that weather describes atmospheric conditions at any time or short period of time. These conditions can change suddenly. Today may be cold and windy and tomorrow may be hot and sunny. Weather conditions include sunshine, rain, snow, fog, sleet, hail, mist, sunshine, wind, temperature and thunderstorms.
- Climate describes conditions over a longer time period or large geographical area. The climate of an area depends on the average weather conditions collected over a year or more. Climate changes slowly, usually over decades or centuries. Different parts of the world have different climate regions.
- Explain that in today's lesson we will start by looking at what today's weather is in Japan. Then we will explore the climate in Japan and look at the weather over the course of 12 months.
- **Slide 4:** Click on the map to visit the daily forecasts page on the Japan Meteorological Agency website. Ask the pupils what they notice. How does the weather forecast in Japan compare with the weather today where we live? Is the temperature in Hokkaido (very north of Japan) the same or different to that in Okinawa (the very south)? Why is that?
- Click on the weather forecast for Tokyo to look at the detailed forecast. Highlight the different information presented and discuss what it means. For example, explain that 'probability of

precipitation (%)’ means how likely it is that rain (or other precipitation: sleet, snow, hail, drizzle etc.) will fall from the sky at the time shown. Ask questions to check understanding.

Estimated Time: 10 minutes

Task 1

- **Slide 5:** Divide pupils into five groups and assign each group a different Japanese city shown on the JMA weather forecast map. Each groups should research their city’s weather forecast on the JMA website using a tablet or computer and uses the information to write a weather report, either independently or using the writing frame provided on the Task 1 worksheet. (If it is not possible to access the JMA website, the Task 1 worksheet provides weather data for cities across Japan that pupils can use instead).
- Once pupils have finished their city weather reports, mix them into five new groups and give them time to share their weather forecasts with each other in the style of TV weather reporters. Alternatively, ask one pupil from each group to share their report at the front of the class.

Estimated Time: 15 minutes

Extend Learning

- **Slide 6:** Explain that so far we looked at what the weather is like in Japan today. But, as we learned from the video, climate is different to weather. TTYP: Can you remember how they are different?
- Ask pupils to identify the UK on the climate zone map shown onscreen. Which climate zone is it in? Remind pupils that the UK has a temperate climate which means we have four distinct seasons with cool winters and warm summers. Ask pupils to identify Japan on the map. Which climate zone is it in? It is also in the temperate zone, meaning it has 4 seasons too.
- **Slide 7:** Explain that in both the UK and Japan the north is usually cooler than the south. In the UK the south of the country, e.g., Cornwall and Kent, tend to be warmer than it is at the other end, e.g., the north of Scotland. Why is this? How is this different for countries in the southern hemisphere?
- **Slide 8:** Illustrate how climate varies across Japan on the following slides. Explain that winter temperatures in Hokkaido, which is Japan’s northern island, can go below freezing. People might

visit to go skiing and people from all over Japan and many foreign visitors attend the snow festival (yuki matsuri) every year. At the festival you can see huge snow and ice sculptures.

- **Slide 9:** In contrast, winter in Okinawa, the very south of Japan, is usually between 15 – 20 degrees Celsius, similar to May-June in the UK. There are lots of beaches and people visit to go diving.

Estimated Time: 10 minutes

Task 2

- **Slide 10:** Show pupils the Weather Data Excel and look at each tab in turn, discussing what data is provided. Explain that the data is for 2022 and comes from the Japan Meteorological Agency website.
- Explain that the task is to present the data in an easy-to-read format by creating a chart with a title and axis labels. Model doing this for the first data tab by highlighting the relevant columns of data, then navigating to the INSERT tab and going to Recommended Charts. Show how pupils can scroll through the list of charts that Excel recommends for the data. Click on various options to show the different types of chart that can be made.
- As you look at the different charts, explain that some types are better for tracking changes over time, some are useful for comparing parts of a whole, whereas others can be used for determining relationships between two different things.
- For the precipitation and temperature tab, the pupils also need to calculate each city's annual average. Instructions to do this are on the Task 2 worksheet, but model how to do this if necessary.
- **Slide 11:** Once pupils have created their various charts, encourage them to interpret the information by asking which of the cities has the best weather for a tourist visiting Japan. Ask pupils to explain their answers with reference to the data. How would their answer change for a visitor who wanted to have a beach holiday compared to a snowboarder?
- **Alternative Task 2:** Give pupils a copy of table showing monthly mean air temperature and Alternative Task 2 Worksheet. In small groups, ask pupils to create a line chart showing the annual air temperature for one of the cities. Make a class display showing each city's line chart. Discuss what the charts show us about the climate in Japan. Looking at the data shown in the charts, ask pupils to explain which city they think has the best weather for a tourist visiting Japan. How would

their answer change for a visitor who wanted to have a beach holiday compared to a snowboarder?

Estimated Time: 20 minutes

Extension Activity

- Ask pupils to research the equivalent data for their hometown, city or area and to input the data into the Excel file in order to recreate the charts. How does the climate where they live compare to Japan? Which Japanese city is their home closest to in terms of climate?