Location and characteristics of the Sharqiya Sands

Aim and introduction

The Sharqiya Sands (also known as the Wahiba Sands) is a sand sea ecosystem in the Eastern region of Oman within the Arabian Peninsula. It is approximately 1500 km^2 and is identified as an isolated sand sea. It is flanked by the Wadi Batha and Al Hajah Mountains to the North, the Arabian Sea to the Southwest and Wadis Andam and Matam to the West. This lesson is designed for pupils to locate and identify the unique characteristics of this sand sea in Oman.

Curriculum links

AQA
3.1.2.3.a Hot desert ecosystems have a range of distinctive characteristics.

Edexcel A (first teaching 2024, first assessment 2026)
3.1 Large-scale ecosystems are found in different parts of the world and are important.

Edexcel B
7.1 The Earth is home to a number of very large ecosystems (biomes) the distribution of which is affected by climate and other factors.

Eduqas A (WJEC)
5.3.1 Where are large scale ecosystems found?

Eduqas B
3.2: Ecosystems under threat

OCR A
2.1.2. Ecosystems have distinct distributions and characteristics.

OCR B
4.1. Why are natural ecosystems important?

Learning goals

- Describe the location of the Sharqiya Sands.
- Identify the characteristics of the Sharqiya Sands.
- Understand how the Sharqiya Sands fits within the desert ecosystem model.

Learning outcomes

Greater depth: pupils will be able to clearly locate the Sharqiya Sands using accurate and relevant geographical terminology. They will be able to accurately create a climate graph as well as analysing it using relevant terminology. Pupils will be able to show understanding of several aspects within a desert system which work interdependently to keep the balance of the system. They will be able to use evidence from the characteristics of the desert system as well as their own understanding to support their ideas.

Expected level: pupils will be able to locate the Sharqiya Sands using mostly accurate and relevant geographical terminology. They will be able to create a climate graph and/or analyse it using mostly relevant terminology. Pupils will be able to show there are several aspects within a desert system which work interdependently to keep the balance of the system. They will be able to use some evidence from the characteristics of the desert system to support their ideas.

Working towards: pupils will be able to locate the Sharqiya Sands using some relevant geographical terminology. They will be able to create a climate graph but may need support in analysing the data presented – this will mostly be descriptive. Pupils will be able to identify some aspects within a desert system. They will be able to identify characteristics of the desert system and may make connections of their interconnectivity.

Support: with support, pupils will be able to locate the Sharqiya Sands using some relevant geographical terminology. They will be able to create a climate graph with guidance and will be able to describe the patterns presented. Pupils will be able to identify some aspects within a desert system. They will be able to identify some key characteristics of the desert system and may make some connections of their interconnectivity.

Key terms

- Wadi
- Aeolianite
- Precipitation
- Temperature
- Sand sea
- Location

Learning resources

- Teacher Presentation_Location and Characteristics of the Sands
- Pupil case study activity sheet
- KS4 (14-16) Jewel of Arabia StoryMap showing a satellite image of the Sharqiya Sands

What you will need

- Red and blue coloured pencils (for climate graphs)
- A4 poster paper
- Rulers
- Pencils

Challenge and support

Support students by adding terms to help with descriptions in both the analysis and maps from memory tasks add key terms on the board to help with the desert ecosystem model. Challenge pupils to develop their descriptions and analysis beyond what is presented on the board. They could also be challenged further by looking at factors which could affect the ecosystem model.

Starter

Ask pupils to write on a min whiteboard/post it notes all the words they associate with the word 'desert'. Question pupils to develop their response to gauge understanding of the desert biome.

Main 1 – Location of the Sharqiya Sands

Working in groups of 3-4, pupils undertake a 'maps from memory' activity to locate the Sharqiya Sands and its features. Use the StoryMap as the image to help with this or use a map site such as Google Maps if you want to use a different projection.

Pupils then use the map they have created to draw a sketch map on their case study sheet as well as annotate it describing its location.

Main 2 – Climate characteristics

Teacher uses the PowerPoint to provide a brief overview of the Sharqiya Sands. Pupils then complete a climate graph using graph paper and / or (depending on time and ability within the class) analyse the climate graph (a version of the graph is on the PowerPoint and on the second page of the case study sheet.

Main 3 – Desert ecosystem model

Teacher presentation on the key characteristics of the Sharqiya Sands including soil, water and vegetation. Pupils complete a desert ecosystem model on their case study sheet showing how all these characteristics interact (and are interdependent) with each other.

Plenary

Pupils complete a 'just a minute' exit card to reflect on the learning from the lesson.