

Lesson Three:

Shifting Sands

Objectives

- To know a range of desert-based vocabulary
- To understand the processes involved in sand dune formation
- To be able to explore the Sharqiya Sands through the use of creative language

Context and Rationale

Through the introduction of a host of new desert vocabulary, students can engage with the physical geography processes that shape the Sharqiya Sands region. They will gain an understanding of how the dunes are formed and the key features within them. This gives students an appreciation of the scale and scope of this region and the importance physical geography plays in how the whole area functions. By allowing students to use practical and creative means to explore the topic, 'other-worldly' processes can come to life.

This lesson is also presented as a walk-through PowerPoint presentation ([Lesson Three Walkthrough](#)).

Starter

Students are presented with [Desert vocab mix and match presentation](#) and asked to link up any words they already know to their definitions. Students should then attempt to guess the remaining matches. In pairs, and using an iPad or laptop, students are then allowed exactly three timed minutes of online research to allow them to confirm any remaining definitions. Knowing that in each subsequent round of research the timing will be reduced, pairs of students should communicate with each other with regards to the best use of their time and their research priorities. Further two minutes and then one minute of online research can be used before students give feedback collectively on the correct answers.

Body

Students are given traditional sand timers and asked to watch individual grains of sand as they fall through the timer, the shape of the lower growing sand pile as well as the shape of the upper, receding sand pile. Students should be able to comment on the patterns they see. Students should then be asked to tilt the timer or wobble it from side to side and, again, feedback their observations. Taking students outside, (or to a space which can be easily cleaned) and with the help of [Creating a sand dune box guide](#), students can then create their own sand dunes. With either the use of hair dryers (on a low and cool setting) or with paper straws, the students should attempt to create each of the sand dune formations shown in [Types of sand dune cards](#). Students can then experiment with the placement of rock outcrops (represented by medium sized pebbles) in their dunes or tree belts (lines of large Lego bricks on end) and note the effect these features have on the dune shapes created (with the possibility of creating a blowout dune).

Once back in the classroom, students should be able to reflect on their sand dune creating session and comment on the key variables that influence the size, shape and position of sand dunes in the real world. The key principles they should pick out are noted on [Forming a sand dune presentation](#). Students should then be shown a Google Earth image of the Sharqiya Sands. Students will be able to note the clear north to south longitudinal pattern of the dunes. Using the practical knowledge they have gained over the course of the lesson, they should be able to hypothesise how the Sharqiya Sands have formed in that particular pattern.

Plenary

Students should be shown [Sharqiya Sands Photojam](#) and asked to create a poem based on the idea of "Shifting Sands". They should aim to correctly use at least three of the words learnt in the desert vocabulary exercise in the starter activity. Students can then present their poems to others.

Homework or Extension / Enrichment Tasks

Returning to the physical factors that form sand dunes, students should reflect on how the sand dunes may change into the future, assuming there are no intervening human processes. Students can comment on whether future movement of the Sands is sustainable or whether human intervention is in fact necessary to sustain human use and habitation of the region.