

# Dune

INDICATOR Dune morphology



## Material resource

Drone

## Human resource

Geomorphologist

## Description

Dunes are landforms that develop when sand is moved around and deposited by the wind.

01/66

# Dune

INDICATOR Dune morphology



## Material resource

Sediment traps

## Human resource

Geologist

## Description

Dunes are landforms that develop when sand is moved around and deposited by the wind.

02/66

# Dune

INDICATOR Dune morphology



## Material resource

Satellite images

## Human resource

Geomorphologist

## Description

Most of the dunes in Inhambane Province have a parabolic shape.

03/66

# Dune

INDICATOR Dune morphology



## Material resource

Field notebook

## Human resource

Ecologist

## Description

Vegetation is important in controlling the evolution of dunes.

04/66

# Dune

INDICATOR Dune morphology



## Material resource

Sediment traps

## Human resource

Geomorphologist

## Description

Parabolic dunes are generally covered in vegetation, limiting sand movement.

05/66

# Dune

INDICATOR Dune morphology



## Material resource

Field notebook

## Human resource

Ecologist

## Description

Parabolic dunes are generally covered in vegetation, limiting sand movement.

06/66

# Dune

INDICATOR Dune morphology



## Material resource

Drone

## Human resource

Geomorphologist

## Description

Lakes can form in the depressions between sand dunes.

07/66

# Dune

INDICATOR Dune morphology



## Material resource

Satellite images

## Human resource

Geoarchaeologist

## Description

When dunes move, they can fill in lakes and cover/uncover archaeological sites.

08/66

# Dune

INDICATOR Dune morphology



## Material resource

Drone

## Human resource

Geomorphologist

## Description

When dunes move, they can fill in lakes and cover/uncover archaeological sites.

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# Dune

INDICATOR Dune morphology



## Material resource

Satellite images

## Human resource

Geologist

## Description

When dunes move, they can fill in lakes and cover/uncover archaeological sites.

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# Dune

INDICATOR Dune morphology



## Material resource

Satellite images

## Human resource

Geomorphologist

## Description

The oldest dunes are found the furthest from the coastline.

11/66

# Dune

INDICATOR Dune morphology



## Material resource

Laboratory

## Human resource

Geomorphologist

## Description

The oldest dunes are found the furthest from the coastline.

12/66

You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



# Dune

INDICATOR Sediments



## Material resource

Grain-size analyser

## Human resource

Geologist

## Description

Dunes are formed from sand.

13/66

# Dune

INDICATOR Sediments



## Material resource

Laboratory

## Human resource

Geologist

## Description

Dune sediments can be dated to understand when the dunes formed.

14/66

# Dune

INDICATOR Sediments



## Material resource

Laboratory

## Human resource

Geoarchaeologist

## Description

Dune sediments can be dated to understand when the dunes formed.

15/66

You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



# Dune

INDICATOR Sediments



## Material resource

Laboratory

## Human resource

Geologist

## Description

Dune sediments can be dated to understand when the dunes formed.

16/66

# Dune

INDICATOR Sediments



## Material resource

Laboratory

## Human resource

Geoarchaeologist

## Description

Dune sediments can be dated to understand when the dunes formed.

17/66

# Dune

INDICATOR Sediments



## Material resource

Grain-size analyser

## Human resource

Geologist

## Description

When the climate is wetter, the dune vegetation becomes denser and less sand can be blown into the lakes. The amount of sand in the lake sediments can therefore indicate climate changes.

18/66

You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



You win 1 point for 'Longest history'

A dune could be more than 250 000 years old.



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# Dune

INDICATOR Sediments



## Material resource

GPS

## Human resource

Geoarchaeologist

## Description

It is possible to find remains of human activity (archaeological sites) in the dune sands.

19/66

# Dune

INDICATOR Sediments



## Material resource

Trowel

## Human resource

Archaeologist

## Description

It is possible to find remains of human activity (archaeological sites) in the dune sands.

20/66

# Dune

INDICATOR Sediments



## Material resource

Laboratory

## Human resource

Geochemist

## Description

Chemical changes through a dune profile can indicate environmental changes.

21/66

# Dune

INDICATOR Sediments



## Material resource

Trowel

## Human resource

Geoarchaeologist

## Description

Chemical changes through a dune profile can indicate environmental changes.

22/66

# Dune

INDICATOR Charcoal



## Material resource

Microscope

## Human resource

Archaeobotanist

## Description

Sand dunes can preserve fireplaces made by humans in the past.

23/66

# Dune

INDICATOR Charcoal



## Material resource

Laboratory

## Human resource

Geoarchaeologist

## Description

By dating fireplace charcoal, we can find out how long people have lived in Inhambane Province.

You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



24/66

# Dune

INDICATOR Charcoal



## Material resource

Laboratory

## Human resource

Geoarchaeologist

## Description

By dating fireplace charcoal, we can find out how long people have lived in Inhambane Province.

You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



25/66

# Dune

INDICATOR Charcoal



## Material resource

Microscope

## Human resource

Archaeobotanist

## Description

Charcoal can indicate which woody plant species our ancestors used to make fire.

26/66

# Dune

INDICATOR Charcoal



## Material resource

Microscope

## Human resource

Archaeobotanist

## Description

Charcoal can indicate which woody plant species were available in the surrounding area for use by our ancestors, and also deduce the climate of the past.

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# Dune

INDICATOR Charcoal



## Material resource

Microscope

## Human resource

Archaeologist

## Description

Charcoal can indicate which woody plant species were available in the surrounding area for use by our ancestors, and also deduce the climate of the past.

28/66

# Dune

INDICATOR Charcoal



## Material resource

Microscope

## Human resource

Archaeobotanist

## Description

When we combine charcoal evidence with pollen evidence from the lakes, we can see how people moved through the landscape to collect firewood.

29/66

# Dune

INDICATOR Charcoal



## Material resource

ID guide

## Human resource

Archaeologist

## Description

When we combine charcoal evidence with pollen evidence from the lakes, we can see how people moved through the landscape to collect firewood.

30/66

# Dune

INDICATOR Present-day flora



## Material resource

Field notebook

## Human resource

Ecologist

## Description

It's important that we know which species grow on the dunes today so we can reconstruct past landscapes.

31/66

# Dune

INDICATOR Present-day flora



## Material resource

ID guide

## Human resource

Biologist

## Description

It's important that we know which species grow on the dunes today so we can reconstruct past landscapes.

32/66

# Dune

INDICATOR Human skeleton



## Material resource

Trowel

## Human resource

Palaeoanthropologist

## Description

Skeletons found in the dunes can indicate that the area was suitable for human occupation.

33/66

# Dune

INDICATOR Human skeleton



## Material resource

GPS

## Human resource

Archaeologist

## Description

Skeletons found in the dunes can indicate that the area was suitable for human occupation.

34/66

# Dune

INDICATOR Human skeleton



## Material resource

Trowel

## Human resource

Archaeologist

## Description

By dating the bones, we can estimate how long our ancestors have lived in the area of Inhambane.

35/66

# Dune

INDICATOR Human skeleton



## Material resource

Laboratory

## Human resource

Palaeoanthropologist

## Description

By dating the bones, we can estimate how long our ancestors have lived in the area of Inhambane.

36/66

You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



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# Dune

INDICATOR Human skeleton



## Material resource

Trowel

## Human resource

Geoarchaeologist

## Description

By dating the bones, we can estimate how long our ancestors have lived in the area of Inhambane.

You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



37/66

# Dune

INDICATOR Human skeleton



## Material resource

Laboratory

## Human resource

Geochemist

## Description

Analysis of the bones can tell us what humans ate in the past and whether the lakes were important food sources.

38/66

# Dune

INDICATOR Human skeleton



## Material resource

Lens

## Human resource

Palaeoanthropologist

## Description

Analysis of the bones can tell us what humans ate in the past and whether the lakes were important food sources.

39/66

# Dune

INDICATOR Ceramics



## Material resource

Trowel

## Human resource

Archaeologist

## Description

Ceramics can tell us how long people lived in Inhambane Province thanks to residues inside the vessels and characteristics of the vessels themselves.

You win 1 point for 'Longest history'

Charcoal dating shows that human occupation in the area dates back 40 000 years.



40/66

# Dune

INDICATOR Ceramics



## Material resource

Trowel

## Human resource

Archaeologist

## Description

Ceramics can tell us how long people lived in Inhambane Province thanks to residues inside the vessels and characteristics of the vessels themselves.

41/66

# Dune

INDICATOR Ceramics



## Material resource

Lens

## Human resource

Archaeologist

## Description

Residues inside the ceramics can tell us what food resources were collected.

42/66

# Dune

INDICATOR Lithics



## Material resource

Trowel

## Human resource

Lithics specialist

## Description

Lithics are stone tools made by humans in the past - the type of stone tool can give us an indication of the timing of human occupation in Inhambane Province.

43/66

# Dune

INDICATOR Lithics



## Material resource

Lens

## Human resource

Lithics specialist

## Description

By analysing residues stuck to the stone tool, we can find out what resources people used and how these changed over time.

44/66

# Dune

INDICATOR Lithics



## Material resource

Trowel

## Human resource

Archaeologist

## Description

By analysing residues stuck to the stone tool, we can find out what resources people used and how these changed over time.

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# Dune

INDICATOR Fauna



## Material resource

Lens

## Human resource

Zooarchaeologist

## Description

Faunal remains are fossils of various animals (mollusc shells, fishbones, mammal bones) found in the dunes in archaeological contexts.

46/66

# Dune

INDICATOR Fauna



## Material resource

Trowel

## Human resource

Archaeologist

## Description

Faunal remains are fossils of various animals (mollusc shells, fishbones, mammal bones) found in the dunes in archaeological contexts.

47/66

# Dune

INDICATOR Fauna



## Material resource

ID guide

## Human resource

Zooarchaeologist

## Description

Gastropods are different molluscs with a carbonate shell found in the dunes in archaeological contexts (shell middens).

48/66

# Dune

INDICATOR Fauna



## Material resource

ID guide

## Human resource

Zooarchaeologist

## Description

Gastropods are different molluscs with a carbonate shell found in the dunes in archaeological contexts (shell middens).

49/66

# Dune

INDICATOR Fauna



## Material resource

ID guide

## Human resource

Biologist

## Description

Gastropods in archaeological sites can be aquatic (marine or lake) or terrestrial species. By identifying the different species, we can see the range of environments that existed at different times in the past, as well as the resources that humans preferred to use.

50/66

# Dune

INDICATOR Fauna



## Material resource

Laboratory

## Human resource

Zooarchaeologist

## Description

Gastropods can be dated using radiocarbon to find out how old an archaeological site is.

You win 1 point for 'Longest history'

Gastropod dating shows that human occupation in the area dates back 40 000 years.



51/66

# Dune

INDICATOR Fauna



## Material resource

Laboratory

## Human resource

Archaeologist

## Description

Gastropods can be dated using radiocarbon to find out how old an archaeological site is.

52/66

# Dune

INDICATOR Fauna



## Material resource

Lens

## Human resource

Zooarchaeologist

## Description

Bivalves are molluscs with a carbonate shell made of two halves and come in various shapes and sizes - they can be found in archaeological sites (middens) in the dunes.

53/66

# Dune

INDICATOR Fauna



## Material resource

Lens

## Human resource

Biologist

## Description

Bivalves are molluscs with a carbonate shell made of two halves and come in various shapes and sizes - they can be found in archaeological sites (middens) in the dunes.

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You win 1 point for 'Longest history'

Gastropod dating shows that human occupation in the area dates back 40 000 years.



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# Dune

INDICATOR Fauna



## Material resource

ID guide

## Human resource

Zooarchaeologist

## Description

Bivalves live in freshwater or brackish environments and can indicate the types of resources that humans used in the past (marine or lacustrine).

55/66

# Dune

INDICATOR Fauna



## Material resource

ID guide

## Human resource

Biologist

## Description

Bivalves live in freshwater or brackish environments and can indicate the types of resources that humans used in the past (marine or lacustrine).

56/66

# Dune

INDICATOR Fauna



## Material resource

Laboratory

## Human resource

Zooarchaeologist

## Description

Chemical analysis of bivalve shells from midden deposits can help us find out the temperature of the water they inhabited.

57/66

# Dune

INDICATOR Fauna



## Material resource

Laboratory

## Human resource

Zooarchaeologist

## Description

Bivalve shells can be dated by radiocarbon to find out how old the middens in the dunes are.

You win 1 point for 'Longest history'

Bivalve shell dating shows that human occupation in the area dates back 40 000 years.



58/66

# Dune

INDICATOR Fauna



## Material resource

Laboratory

## Human resource

Archaeologist

## Description

Bivalve shells can be dated by radiocarbon to find out how old the middens in the dunes are.

You win 1 point for 'Longest history'

Bivalve shell dating shows that human occupation in the area dates back 40 000 years.



59/66

# Dune

INDICATOR Ornaments



## Material resource

Trowel

## Human resource

Archaeologist

## Description

Humans often made ornaments from bivalve/gastropod shells, ostrich eggs and various animal bones.

60/66

# Dune

INDICATOR Ornaments



## Material resource

Laboratory

## Human resource

Archaeologist

## Description

As well as being indicators of human behaviour, ornaments can be dated to find out the age of an archaeological site.

61/66

# Dune

INDICATOR Ornaments



## Material resource

Laboratory

## Human resource

Geoarchaeologist

## Description

As well as being indicators of human behaviour, ornaments can be dated to find out the age of an archaeological site.

62/66

# Dune

INDICATOR Archaeological sites



## Material resource

Drone

## Human resource

GIS Specialist

## Description

By mapping various archaeological sites among the dunes, we can see if settlement patterns were related to environmental factors.

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