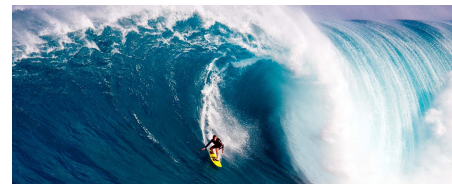


How do waves form and what are their characteristics?

Need to know...

- How waves are formed
- The factors affecting wave size
- The characteristics of destructive and constructive waves

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What are waves?

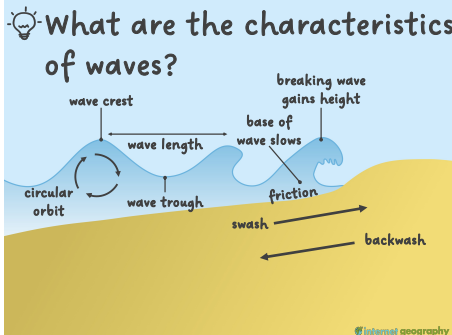
Ripples in the sea caused by the transfer of energy from the wind blowing over the surface.

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How do waves form?

- Ripples form on the surface of the ocean due to friction from the wind.
- Fast moving ripples merge with slower ripples. The waves become larger and form sets (straight lines of waves).
- Waves become larger and more organised the further they travel.

What are the characteristics of waves?



What affects wave size?

What affects wave size?

Fetch - the distance a wave has travelled.

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The size of a wave depends on its fetch. The fetch is the distance a wave travels. The greater the fetch, the larger the wave.

The south-east coast often experiences large waves due to the very long fetch of the waves.

Short fetch means smaller waves.

Fetch - the distance a wave has travelled.

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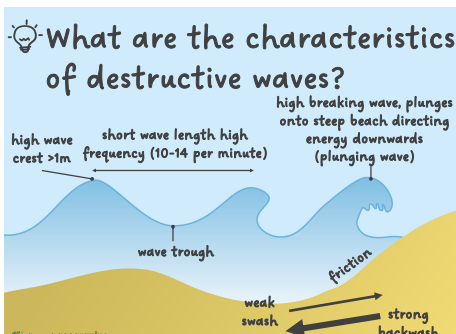
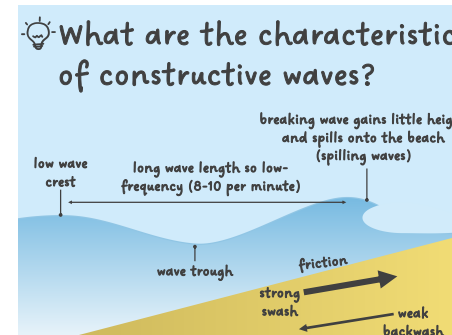
What affects wave size?

- Fetch** - the distance a wave has travelled.
- Wind speed** - the strength of the wind.
- Wind duration** - how long the wind has blown over the sea.

How do constructive and destructive waves compare?

Consider:

- wave length
- wave height
- frequency
- swash
- backwash



Additional Resources

Drag and drop these slides to the place in the presentation where you want to use them, or add your own.

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Misconceptions

Waves are caused by the tide. ✗

Waves are caused by the wind. ✓

The tide is the rising and falling of the sea caused by the gravitational pull of the Moon and Sun.

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Hinge Question

What causes waves?

A. Tides
B. The wind
C. The Sun and Moon

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Hinge Question

What causes waves?

Waves are ripples in the sea caused by the transfer of energy from the wind blowing over the surface.

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Hinge Question

What is the correct sequence in the formation of a wave?

A. Fast moving ripples merge with slower ripples. The waves become larger and form sets (straight lines of waves).
B. Ripples form on the surface of the ocean due to friction from the wind.
C. Waves become larger and more organised the further they travel.

B > A > C

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Hinge Question

Describe the formation of a wave.

Ripples form on the surface of the ocean due to friction from the wind. Fast moving ripples merge with slower ripples. The waves become larger and form sets (straight lines of waves). Waves become larger and more organised the further they travel.

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Hinge Question

Which type of wave is most likely to cause erosion?

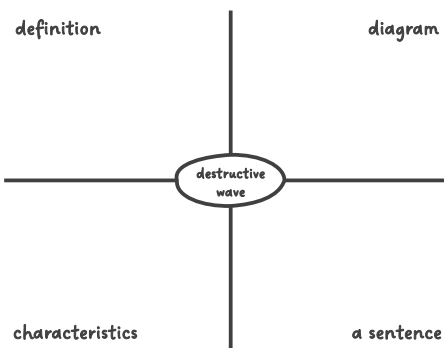
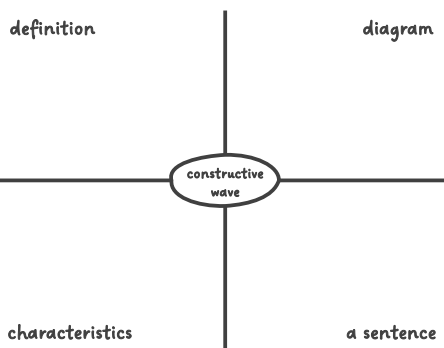
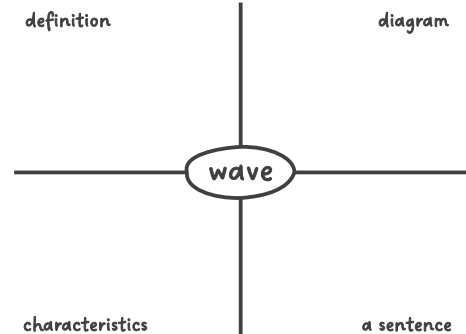
A destructive wave is more likely to cause erosion than a constructive wave. This is because destructive waves plunge onto the beach so their backwash is stronger than their swash, so beach material is removed. Whereas a constructive wave spills onto a beach and has a stronger swash than backwash, meaning beach material builds up.

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True or false?

A wave is a ripple in the sea caused by the transfer of energy from the wind blowing over the surface of the sea.

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Comparing Waves

	Constructive	Destructive
Wave type		
Wave height		
Wave length		
Energy		
Swash		
Backwash		
Impact on beach		

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Definitions Flashcards

A ripple in the sea caused by the transfer of energy from the wind blowing over the surface of the sea.

The distance between wave crests.

Low energy, less frequent waves that have a stronger swash than backwash.

High energy, more frequent waves that have a stronger backwash than swash.

This causes a wave to break when it comes into contact with the beach.

The distance a wave has travelled.

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Keyword Flashcards

wave

wavelength

constructive waves

destructive waves

friction

fetch

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Beat the examiner

Figure 1

Using Figure 1, compare two features of destructive and constructive waves. [2 marks]

1 _____

2 _____

Beat the examiner

Figure 1

Using Figure 1, compare two features of destructive and constructive waves. [2 marks]

1 _____

2 _____

Beat the examiner

Answers should state similarities or differences. Credit 1 mark for two separate statements on the same feature.

- Constructive waves are spilling whereas destructive waves are plunging (1)
- Destructive wave crests are close together but constructive crests are far apart/destructive waves have a shorter wavelength/Destructive waves are closer together (1)
- Constructive waves have strong swash whereas destructive waves have strong backwash (1)
- Destructive waves are steeper (1)
- Destructive waves are higher (1)
- Constructive waves have a lower height (than destructive waves)(1)
- Destructive waves have high energy whereas constructive waves have lower energy (1)
- Constructive waves help to build up the beach whereas destructive waves remove material (1)

A04 – 2 marks