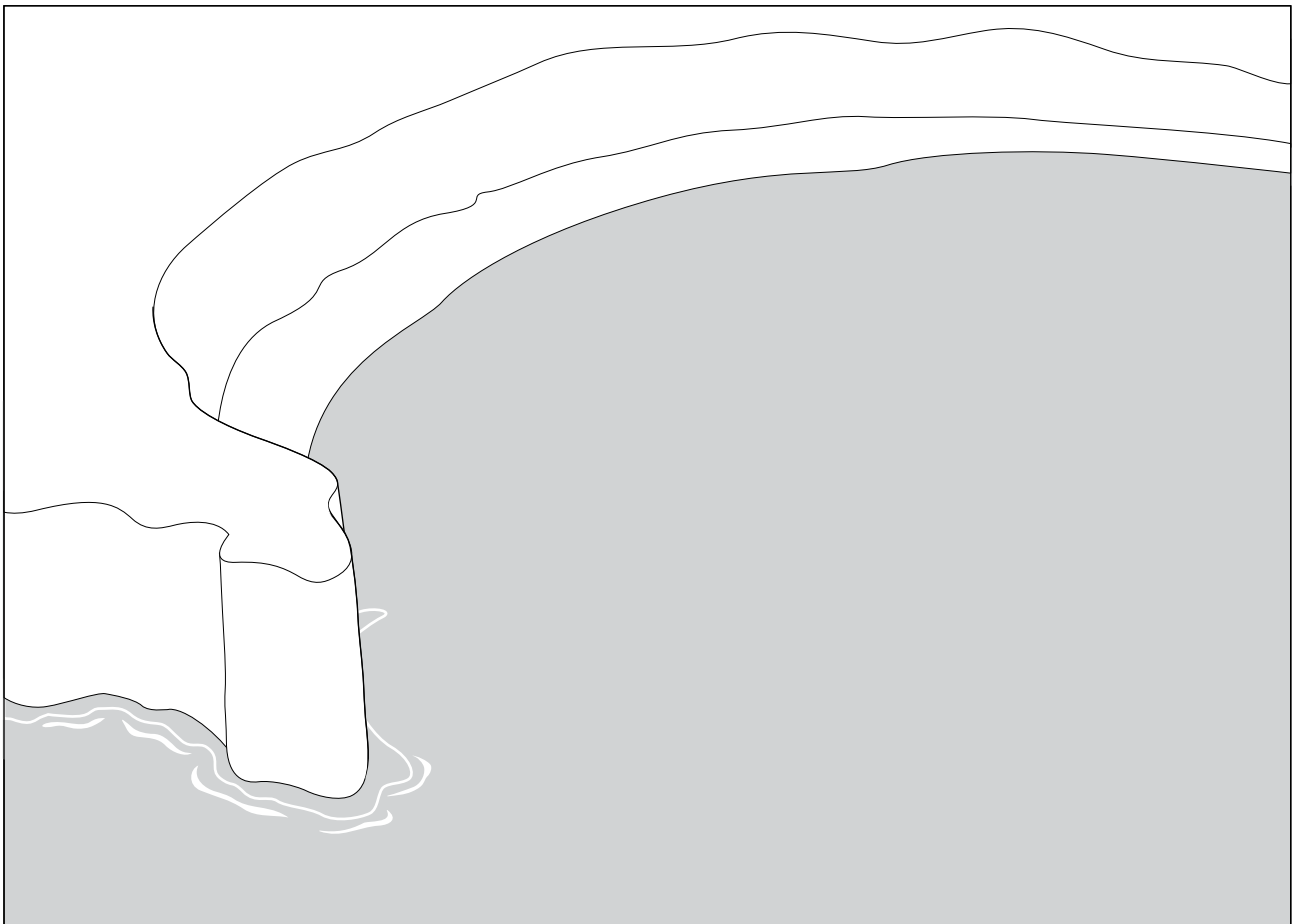


Sand and shingle beaches

In a bay you can sometimes find that the waves have sorted out the sand from the pebbles.

Q1. The wind blows from the left to the right on the diagram below. Label the place that you think is most sheltered and also the place you think is most exposed.



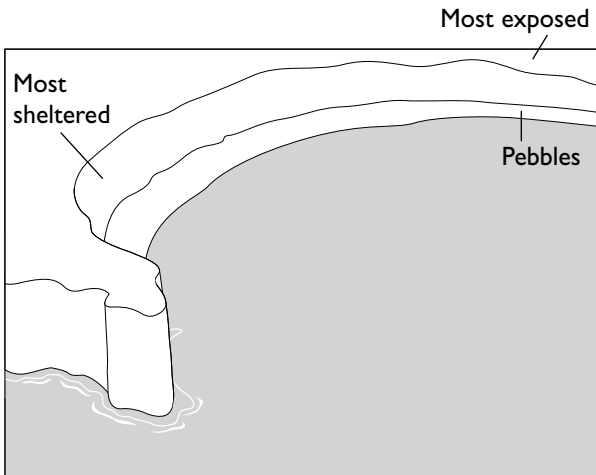
Q2. The most exposed places have the fiercest waves. When waves are very fierce, which material is most likely to remain on a beach – pebbles, mud or sand? Write the name you choose on the diagram in the correct place.

Q3. Sand and pebbles make beaches with different slopes. Which makes the gentler slope?



Answers

1. See diagram.



2. **Pebbles (and see diagram above).** Any material smaller in size is likely to have been washed out to sea.

3. **Sand.**

The answer depends on location. Along the east England coast, in particular, the cliffs are often made from materials left after the Ice Age. This has traditionally been known as boulder clay. Here, the cliffs contain a wide variety of materials, from boulders and pebbles through sand to clay. The clay is washed away immediately, but the sand and pebbles remain to give a mixed beach. Usually the upper beach contains more pebbles than the lower beach.

In the south, there are many shingle beaches. The shingle is another feature of the effects of the Ice Age. The shingle is mainly flints excavated from the nearby chalk. The most famous of these beaches is Chesil beach, with pea-sized shingle at the western end and cobbles at the most exposed eastern end.

Most other beaches away from places with boulder clay cliffs have sandy beaches, but the sand becomes coarser and may grade into pebbles in the most exposed locations.

Notes

Beaches vary widely in their steepness, and in the type of materials found on them. So we often have to answer the question: why is this beach sandy, or, why is it pebbly? In some cases, the question is why is it a mixture of the two?

In general it is wise to steer children away from this complex topic in depth, but in case you get put under pressure, here is a summary answer:

It is best to concentrate on the fact that the existence of the beach and its steepness depends on the size of the material that it is formed from. Thus shingle beaches are always steep, and sandy beaches always gentle. You may find that there are places with steep, upper, pebble beaches and gentle, lower sandy beaches.

In the most sheltered places of all, it is possible for mud to settle out. This is most common close to an estuary where the supply of mud is great.