



Who Were the Vikings?

1	When we think of the Vikings, we might think of wild barbarians. The Vikings lived 1,000 years ago, mostly on ships that sailed across the seas of Northern Europe, waging war upon people living in nearby villages and towns. The Vikings are famous for the way they launched surprise attacks — raiding, plundering and invading the lands of their more peaceful neighbors.
2	The Vikings were dangerous and strong, and they were very clever engineers, especially at sea! In fact, the Vikings invented a boat design that is still used today. Because the Vikings were known for stealing and plundering, it makes sense that they designed their boats to be good for surprise attacks and battles. What features would a good surprise-attack ship have?
3	One important engineering feature of a Viking ship was its long, lean, and narrow hull. The hull of a boat is the body. It provides the buoyancy that keeps the boat from sinking. Why do you think Viking ships were built with narrow hulls?
4	It was important that the hulls of Viking ships be narrow so that they could turn, move quickly, and sail up small canals and waterways to launch sneaky attacks and escape other ships. Viking ships also had single sails and masts. What are advantages of boats with single sails and masts?
5	Ships with only one sail and mast are more lightweight, allowing them to travel quickly. Also, having a single sail and mast makes it easy to take down the sail. Thus, Viking ships could take down their sails quickly if they needed to hide! Vikings ships were best at sailing down wind. However, they often needed to sail across the water in battle or attack. Can you imagine what feature the Vikings engineered to steer their ships across the wind?
6	Clever Vikings! They designed a rudder for the back of their ships to enable them to steer across wind. A rudder is a small oar attached to the right-hand side of the boat near the back. By adjusting the position of the rudder, the Vikings could steer their ships in the desired direction. They also used human power – rowing – to keep the ship moving when there was little or no wind, or when the wind was working against them.
7	It is amazing that the Vikings crafted such a powerful ship 1,000 years ago, before there was even electricity! The Vikings understood how engineering is shaped by the available resources, the environment, and the world around us. They used what resources they had (wood, fabric, metal) sparingly to create simple yet strong ships.
8	Viking ships were engineered to withstand stormy seas and surprise battles. We certainly can learn a lot about engineering by studying designs that have been successful over time!