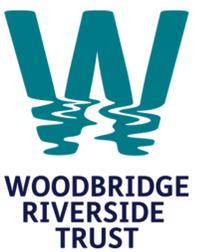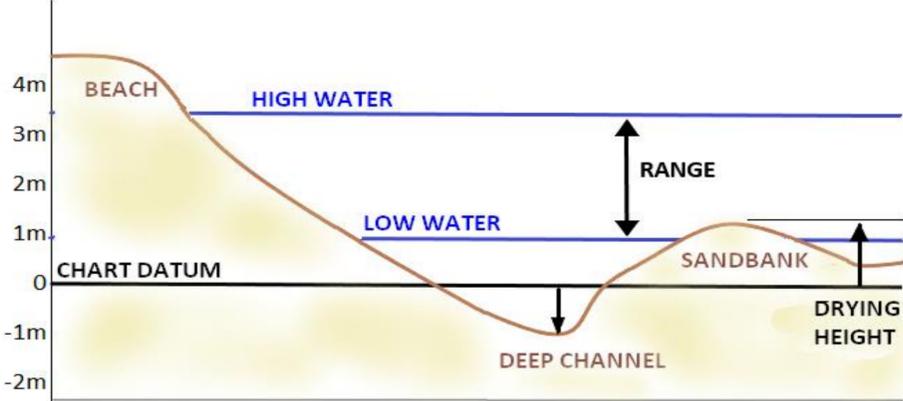# Would you know?
How deep is the water

Tide tables give **predicted** times and heights of HW and LW for every day of the year.

They are based on past tidal observations and astronomy.

Charts show measured depths and drying heights.

Vertical measurements are above/below fixed zero level (Chart Datum, or CD).

This is often at or near Lowest Astronomical Tide at the 'Standard Port' for your area.

Example – for one tide..	The Twelfths Rule
Low Water: 1m above chart datum **High Water:** 3.4m above datum. → the range is 2.4m **Bed of the channel:** 1.2m below datum **Top of the sandbank:** 1.3m above datum → at Low Water on this tide, you would see about 0.3m above the surface.	Estimate heights of tide in the (approx) 6 hours between HW and LW with this 'Rule of Thumb'. The rate of rise or fall is greatest at mid-tide, but slows as the tide turns at HW and LW.

TIME PERIOD	RISE
LW+1HR	1/12 of range (0.2m)
LW+2HR	2/12 of range
LW+3HR	3/12 of range
LW+4HR	3/12 of range
LW+5HR	2/12 of range
LW+6HR	1/12 of range

Follow a similar pattern for the falling tide.

Depth in channel 3 hours after Low Water will be:

Depth of channel below CD + ht of LW above CD + half of the range

1.2m + 1m + 1.2m = 3.4m

IN THE REAL WORLD, TIDAL WATERS ALSO RESPOND TO THE LESS PREDICTABLE

ATMOSPHERIC PRESSURE:

High pressure lowers sea level locally, but North Sea **low** pressure systems can allow tide levels of 1m or **more** than predicted, with risk of floods and damage. The whole tidal cycle can be upset for a while - times of tides changed and tides that 'stand', failing to rise, or to fall.

WIND: piles water up against coasts, increasing depths.

RAINFALL: rain ashore can increase tide speed and height in estuaries

INTERACTION BETWEEN WIND AND TIDE at the water surface.

Friction of wind moving over water creates waves, especially if the wind is against the tide. It could make a passage or mooring uncomfortable – or impossible!

Information compiled by M Poole