

Sailing Upwind

Kim and Alex decided to go sailing. Kim took the striped boat and Alex took the solid color boat. Soon they found themselves on the far side of the lake. Now they needed to get back home.

Alex pointed his green boat toward home – but the wind was coming almost directly from where home is. Because of this, the sail was luffing (flapping back and forth) and he couldn't make any progress. Soon the wind was pushing him even further away from home.

Kim pulled her sail in close to the center of her striped boat, then pointed the boat away from the direction of the wind just far enough for her sail not to be flapping.

She sailed on this “close hauled” course for a while with the wind coming over the left front part of the boat. She was careful to sail in a direction where the sail was not luffing, but still kept the wind coming over the left front on the boat.

After a while, she tacked and sailed close hauled with the wind coming over the right front part of the boat. Again, Kim was careful to avoid having the sail luff – but still kept the wind coming over the right front of the boat. She was making progress toward home by “zig-zagging” back and forth.

Finally, Kim made one more tack and sailed “close hauled” the rest of the way home.

Alex quickly caught on – and figured out how to sail a zig-zap close hauled course to eventually get home.

