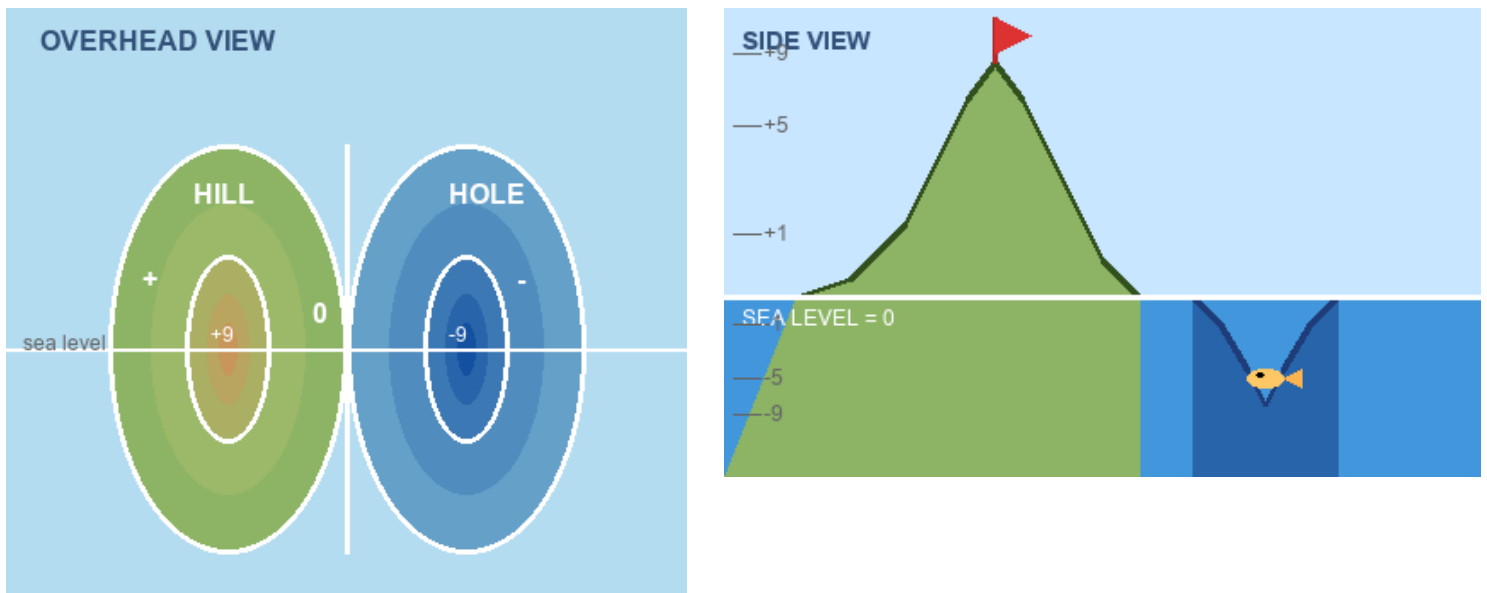


# Hills, Holes & Dipoles!

Lesson 2: When a Hill Meets a Hole



## Your Mission

Look at the pictures above. On the LEFT is a HILL. It has POSITIVE numbers (+1 to +9). On the RIGHT is a HOLE that goes below the sea. It has NEGATIVE numbers (-1 to -9). In the MIDDLE is ZERO -- flat ground at sea level.

1. Pick ONE team: EVEN numbers (+8, +6, +4, +2, -2, -4, -6, -8) OR ODD numbers (+9, +7, +5, +3, +1, -1, -3, -5, -7, -9).
2. Find numbers that are the SAME and TOUCHING. Draw a line through them.
3. The hill lines curve around the left. The hole lines curve around the right.
4. The ZERO line runs down the middle like a bridge between them!

Tip: Odd numbers usually make the prettiest lines!

Fun fact: Scientists call this pattern a DIPOLE. It looks like a magnet's invisible field!

## REMEMBER

+ means ABOVE sea level (hill). - means BELOW sea level (hole). 0 is right at sea level. Bigger numbers are higher or deeper!

**Turn the page for your grid map!**

# Your Dipole Grid Map

Draw lines through the SAME numbers that are touching. Pick EVEN or ODD -- your choice!

+5	+5	+5	+4	+4	+3	+3	+2	+1	+0	+0	-1	-2	-3	-3	-4	-4	-5	-5	-5
+6	+6	+5	+5	+4	+3	+3	+2	+1	+0	+0	-1	-2	-3	-3	-4	-5	-5	-6	-6
+7	+6	+6	+5	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-5	-6	-6	-7
+7	+7	+6	+6	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-6	-6	-7	-7
+8	+8	+7	+6	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-6	-7	-8	-8
+9	+8	+7	+6	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-6	-7	-8	-9
+8	+8	+7	+6	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-6	-7	-8	-8
+7	+7	+6	+6	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-6	-6	-7	-7
+7	+6	+6	+5	+5	+4	+3	+2	+1	+0	+0	-1	-2	-3	-4	-5	-5	-6	-6	-7
+6	+6	+5	+5	+4	+3	+3	+2	+1	+0	+0	-1	-2	-3	-3	-4	-5	-5	-6	-6

## LEGEND

- +9** Hill peak
- +5** Halfway
- +1** Just a
- 0** Sea level
- 1** Just below
- 5** Halfway
- 9** Deep

## PICK ONE:

**EVEN: +8,+6,+4,  
+2,-2,-4,-6,-8**

**ODD: +9,+7,+5,  
+3,+1,-1,-3,  
-5,-7,-9**

Tip: The +9 and -9 are  
-- the peaks!