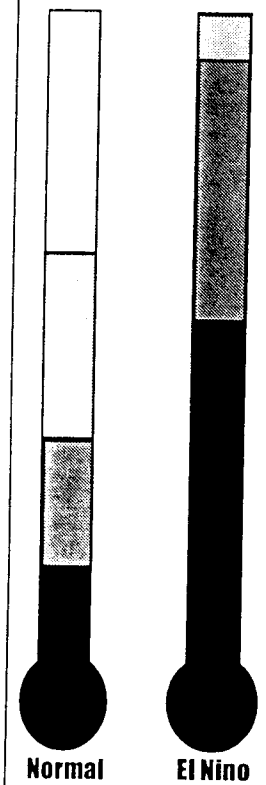
Fish Biogeography Activity:

Read the fact cards on the fish below. Draw an arrow for each species showing it's range in a normal year and also in an *El Niño* year along the N. American Coast. Use the ID number in upper left corner to label (2) range arrows for each species

hint: *the thermometers show the range of surface water temperatures along the N. American coast for both a normal year and El Niño year.*



46 - 50 F 50 - 61 F 57 - 68 F >68 F

ID: 1

Dorado

(Coryphaena hippurus)

Water Temperature: 68 - 73 C
size: to 6.75 feet
food: fishes and squid

ID: 2

Yellowtail

(Seriola lalandi)

Water temperature: 57 - 68 F
size: to 5 feet
food: Pacific & Jack Mackerels, Sardines, Northern Anchovies, Squid, Pelagic Red Crabs

ID: 3

Striped Marlin

(Tetrapturus audax)

Water Temperature: 68 - 70 F
size: to 13.3 feet
food: tunas, jacks, sardines, anchovies, saurles, and squids

ID: 4

Lingcod

(Ophiodon elongatus)

Water Temperature: 44 - 50 F
size: to 5 feet
food: sardines, anchovies, squids and octopi

Fish Biogeography Questions:

What would be the typical catch a sportfisherman would find off the coast of Vancouver Island during a normal year ?

How would an *EL Niño* year affect fishing off the coast of Vancouver Island?

Where would you go to catch **Dorado** in a normal year?

What happens to colder water species like the **Lingcod** during an *El Niño* year?

If your Southern California business is dependent on good fishing, which year would bring in the most profits (normal year vs. *El Niño* year) and **why**?