Endless Voyage 107: It's In the Water **Name_____**

1. What are hydrogen bonds? How are they important to the water molecule?

2. Why can water dissolve other substances so easily? Why is this important?

3. No water is pure. What is found in fresh water? How about sea water?

4. Why do some lakes get salty and others do not?

5. How is conductivity related to Salinity?

6. Describe the use of Argo Floats to measure salinity.

7. Cold water is (more, less) dense than warm water? Salt (increases, decreases) the freezing point of ocean water?

8. Where does deep sea water form? Why?

9. What is thermohaline circulation?

10. What is the largest reservoir of carbon? What are some other reservoirs?

11. What is the relationship between the ocean sea water and global climate? What does iron have to do with this process?

Endless Voyage 108: Beneath the Surface **Name_____**

1. Describe the characteristics of the Epipelagic Zone. What lives in this part? What is the level of depth?

2. Describe the characteristics of the Mesopelagic Zone.

3. At the bottom of the Mesopelagic Zone is the thermocline. What is the thermocline and why does it occur?

4. Discuss the characteristics of the Bathypelagic Zone. Who lives there? What is its depth?

5. Discuss the characteristics of the Abyssal or Hadal Pelagic Zone.

6. With respect to light, the ocean is divided into three zones. Describe the characteristics of each.
    a) Euphotic

    b) Disphotic

    c) Aphotic

7. What is Bioluminescence?

8. Where does the ocean get its green tint of color?

9. Sound travels (faster, slower) in the ocean then in the open air? Sound travels (faster, slower) in fresh water than in salt water? (Circle the correct answer.)

10. What are shadow zones? What do they have to do with submarines?

Endless Voyage 109: Going to Extremes **Name**_____

1. Where are the tropics officially located? What are the basic characteristics of this area?

2. Are the tropics very productive? Which areas have the best productivity?

3. Describe the basic characteristics of coral reefs. What are they known as the rainforests of the sea?

4. Describe the different types of coral growth.

5. How do different fish and animals cope with the extreme cold conditions of a polar area?

6. The polar region oceans are a major source for what? How long does it take to across the bottom of the ocean

7. What is the biggest danger for a coral reef?

8. What is the biggest threat to Hawaiian coral reefs?

9. What is bleaching in a coral reef environment?

10. What is MacMurdo Station? What was a problem they had there?

11. What is so great about sponges?

12. What is the basic difference between the Artic Region a compared to the Antarctic Region?

Endless Voyage 110: Something in the Air **Name**_____

1. Describe the characteristics of Hurricane Mitch. What did it do? How strong was it? How did it affect people?

2. Motions in the atmosphere are driven by what force?

3. Ocean currents are driven by what driving force?

4. How do clouds regulate climate?

5. What is an atmosphere circulation cell?

6. Describe the basic characteristics of a Hadley Circulation Cell.

7. Describe the Coryolis Effect.

8. What is the Walker cell? What direction do these cells travel? What major atmosphere phenomenon are they associated with?

9. What is the ITCZ? What types of weather phenomenon are associated with the ITCZ?

10. What does the ITCZ have to do with monsoons?

11. Generally the storms of the pacific are (stronger, weaker) then those of the Atlantic.

12. Is the weather forecasting getting more detailed and accurate? Describe the positive changes that have occurred with respect to tornado and hurricane prediction.

13. What three major challenges did Webster (the guy with the accent) mention at the end of the video?

Endless Voyage 111: Going With The Flow **Name _____**

1. What is El Nino? Describe the conditions that El Nino creates, in both the eastern and western Pacific Ocean.

2. Describe where the term El Nino originates.

3. Describe the forces that create the ocean currents.

4. What is a gyre? Are they geostrophically balanced? What the hell does that last sentence mean?

5. Where are the strongest ocean currents typically located?

6. What is a countercurrent? Give an example.

7. What is an undercurrent? Give an example.

8. Describe some of the methods utilized to measure ocean currents.

9. Describe how the Topex Poseidon and Jason I are being utilized in conjunction with each other.

10. What are some of the problems with predicting an El Nino?

Endless Voyage 112: Deep Connections **Name _____**

1. Compare and contrast the influences of Deep and Surface Ocean Currents.

2. How long does it take for the oceans to circulate at depth?

3. What is thermohaline circulation? Describe it primary mechanisms for moving the water.

4. How is thermohaline circulation related to climate change?

5. Compare and contrast water masses with air masses.

6. Why do Oceanographers study water masses?

7. What is a tracer? Give examples of how they are used?

8. How are CFCs used as a tracer in ocean study?

9. What is a transient tracer? Give an example. How do they get there?

10. How are Corals and Foramonifera used to study ocean chemistry?

11. Describe the time frame of deep ocean current movement.

12. Describe the new study by Reiser (from the University of Washington). What is he planning?

13. Describe the use of a HRP device. What kind of data is being generated by this device?

Endless Voyage 113: Surf's Up **Name_____**

1. How do wind waves form?

2. Define wavelength.

3. What are rip currents? How fast are they?

4. What are rogue waves? How do they form?

5. Discuss the two conditions that can create rogue waves.

6. What are internal waves? How big are they?

7. How did World War II contribute to wave study?

8. Why are waves generally larger on the west coast?

9. What is a pressure sensor? How is it used?

10. How do waves and pollution interact?

11. How are wave studies related to climate and climate change?

Endless Voyage 114: Look Out Below **Name _____**

1. How big was the tsunami that hit Japan in 1963?

2. Where is the best place to be during a tsunami? How come?

3. Why is the term "tidal wave" incorrect when referring to tsunamis?

4. Describe the basic characteristics (wavelength, wave period, etc.) for a tsunami.

5. How are tsunamis generated?

6. Why are tsunamis more frequent in the Pacific Ocean basin?

7. When was the Pacific Tsunami Warning System developed?

8. What is NOAA? What are the basic components of their tsunami warning program?

9. What is an Inudation Map? How are they useful?

10. What is DART? How is it used in studying tsunamis?

11. How fast is sea level rising at the present time?

12. How much of the US population is near the coast?

13. How can tectonics add to the problem of sea level rise from global warming?

Endless Voyage 115: Ebb and Flow **Name_____**

1. What are tides?

2. Compare the effect of the moon and the sun on the tides of the Earth.

3. Describe the basics about the Equilibrium Theory (including tidal bulges).

4. Describe the Dynamic Theory of tides.

5. What are tidal currents? Where are they the strongest?

6. What is the intertidal zone?

7. How is tidal friction related to global climate?

8. Is tidal power renewable or nonrenewable? Describe how they are using tidal power in France.

9. What are the types of problems that occur with the development of a tidal power dam?

10. What is one of the most important questions in the study of tides?

Endless Voyage 116: On the Coast **Name**_____

1. What percent of the US population livens in coastal counties?

2. Give a few examples of the definition of a coast.

3. What are Primary Coastlines? Describe their primary characteristics.

4. What are Secondary Coastlines? Describe their primary characteristics.

5. In geology, coastlines can also be classified as emergent and submergent.

a. Describe the characteristics of emergent coasts. Give examples.

b. Describe the characteristics of submergent coasts. Give examples.

6. Coastlines can also be classified as high energy or low energy coast.

a. What characterizes a high energy coast? Give examples.

b. What characterizes a low energy coast? Give examples.

7. According to tectonic classification of coasts, there are Active and Passive Coastline Margins.

a. Describe the characteristics of an Active Margin.

b. Describe the characteristics of an Passive Margin.

8. Describe the characteristics of a Barrier Island. Where are they located in the US?

9. How is the Pacific Coast different from the Atlantic Coast? Explain.

Endless Voyage 117: Due West **Name_____**

1. What is shoaling? Where have they experienced problems of this sort?

2. What do you find at Point Mugu? Who protects this area?

3. What kind of contaminants did they find ain the Lag 4 site? How did they clean up the area?

4. Once Sewage Ponds 1, 2 and 3 were no longer used for sewage sludge, cleanup needed to be done. What have they done since 1998 to clean up this area?

5. Discuss some of the problems (listed below) the Malibu Coast experiences.

6. When was the roadway (Route 1) cut through Malibu?

7. Can erosion of the Malibu Coast be stopped? Why or why not?

8. What are some of the techniques used to prevent or stabilize landslides?

9. What's the problem with Aliso Creek?

10. What are some of the health problems that can arise from ocean contamination?