**2016 Buzzer Question**

**Question Text:**
How can you quickly determine the sex of most species of crabs?

**Answer W:**
External sex organs

**Answer X:**
Relative size of the pincher claws

**Answer Y:**
The shape of the abdominal plate

**Answer Z:**
The color of the eyes

**Correct Answer:**
Y

Question #: 0000000271
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 1
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

**Question Text:**
Lead-210 with a half-life of 22 years cannot be used to determine the sedimentation of deep-ocean sediments because:

**Answer W:**
its half-life is too short

**Answer X:**
its half-life is too long

**Answer Y:**
its concentration in these sediments is too high to measure

**Answer Z:**
its concentration in these sediments is too low to measure

**Correct Answer:**
W

Question #: 0000002942
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 2
Which of the following was the basis of geologists' current estimate of the Earth's age?

**Answer W:**
Moon rocks and meteorites

**Answer X:**
Fossils

**Answer Y:**
Continental rocks

**Answer Z:**
Ocean floor rocks

**Correct Answer:**
W
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What do underwater earthquakes, landslides, volcanic eruptions, or explosions generate?

**Answer W:**
Freak waves

**Answer X:**
Whirlpools

**Answer Y:**
Tsunamis

**Answer Z:**
Eddies

**Correct Answer:**
Y

Question #: 0000003503
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 4
Question Text:
Where does the band of coral reef development extend to higher latitudes?

Answer W:
Atlantic Ocean

Answer X:
Pacific Ocean

Answer Y:
The east side of all oceans

Answer Z:
The west side of all oceans

Correct Answer:
Z

Question #: 0000002872
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 5
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
How is organic matter produced in the ocean classified?

Answer W:
Allochthonous

Answer X:
Autochthonous

Answer Y:
Terrigenous

Answer Z:
Hydrogenous

Correct Answer:
X

Question #: 0000002945
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 6
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
If someone drops a cork into the ocean, about 10km from shore, how long does it take for the cork to move to the shore?

**Answer W:**
A few hours

**Answer X:**
1 day

**Answer Y:**
1 week

**Answer Z:**
Maybe never

**Correct Answer:**
Z

Question #: 0000003093
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 7
2016 Buzzer Question

Question Type: Toss-Up  
Question Format: Multiple Choice  
Category: Social Sciences

Question Text:

Which man accomplished the first prevention of scurvy on his voyage?

Answer W: 
Vasco da Gama

Answer X: 
Nathanial Palmer

Answer Y: 
James Cook

Answer Z: 
Ferdinand Magellan

Correct Answer: 
Y

Question #: 0000003970
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 8
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
What are the two best developed senses in cetaceans?

**Answer W:**
Sight and smell

**Answer X:**
Taste and hearing

**Answer Y:**
Taste and smell

**Answer Z:**
Sight and hearing

**Correct Answer:**
Z

Question #: 0000002901
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 9
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Technology

**Question Text:**
What commercial fishing method utilizes multiple baited hooks, suspended beneath the ocean surface?

**Answer W:**
Trolling

**Answer X:**
Trawling

**Answer Y:**
Seining

**Answer Z:**
Longlining

**Correct Answer:**
Z

Question #: 0000003669
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 10
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What happens to the speed of sound when there is an increase in temperature, pressure, or salinity?

**Answer W:**
Increases

**Answer X:**
Decreases

**Answer Y:**
Remains the same

**Answer Z:**
Increases or decreases depending on factors more influential than temperature, pressure, and salinity

**Correct Answer:**
W

Question #: 0000003509
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 11
2016 Buzzer Question

Question Text:
What type of reaction is cellular respiration considered?

Answer W:
Endothermic

Answer X:
Catalytic

Answer Y:
Inorganic

Answer Z:
Exothermic

Correct Answer:
Z

Question #: 0000002948
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 12
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

**Question Text:**
What is the world's largest reef complex?

**Answer W:**
Florida Keys Reef Tract

**Answer X:**
Australian Great Barrier Reef

**Answer Y:**
Belize Barrier Reef

**Answer Z:**
Palau Reef Tract

**Correct Answer:**
X

Question #: 0000003057
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 13
Question Text:
What is primary productivity a measure of?

Answer W:
Standing crop

Answer X:
Life expectancy

Answer Y:
Rate of birth minus rate of death

Answer Z:
Rate of production of organic carbon

Correct Answer:
Z
Which best describes the behavior of high-energy waves of winter storms?

**Answer W:**
Move sand from offshore bars onto the beach

**Answer X:**
Move sand from the beach out to offshore bars

**Answer Y:**
Build up sand spits and tombolos

**Answer Z:**
Hold sand on the beach and keep the beach stable

**Correct Answer:**
X
Which of the following is NOT a clay mineral found in marine sediments?

Answer W: Chlorite

Answer X: Illite

Answer Y: Muscovite

Answer Z: Kaolinite

Correct Answer: Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
What is the average salinity of the world's oceans?

Answer W:
10

Answer X:
25

Answer Y:
35

Answer Z:
50

Correct Answer:
Y

Question #: 0000002954
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 17
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

Question Text:
Which of the following organisms does NOT accumulate calcium carbonate?

Answer W:
Coccolithophores

Answer X:
Pteropods

Answer Y:
Foraminifera

Answer Z:
Cladocera

Correct Answer:
Z

Question #: 0000002881
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 18
2016 Buzzer Question

Question Type: Toss-Up  
Question Format: Multiple Choice  
Category: Social Sciences  

**Question Text:**
Which of the following is the greatest threat to most dune plants?

**Answer W:**  
Human traffic

**Answer X:**  
Hot summer temperatures

**Answer Y:**  
Wind blown sand

**Answer Z:**  
Salt spray

**Correct Answer:**  
W

Question #: 0000003975  
Competition: Regional Competition 3  
Round: sample toss-ups  
Pair: 19
Which wavelength of light could deep-sea animals most likely detect with their eyes?

Answer W: Infrared

Answer X: Visible light

Answer Y: Ultraviolet

Answer Z: Gamma rays

Correct Answer: W

Question #: 0000002912
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 20
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

**Question Text:**
Which type of heat changes the state of a substance, but does not raise its temperature?

**Answer W:**
Transforming heat

**Answer X:**
Sensible heat

**Answer Y:**
Latent heat

**Answer Z:**
Converting heat

**Correct Answer:**
Y

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Question #: 0000002956
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 21
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
Which compelling piece of evidence supported the theory of seafloor spreading?

**Answer W:**
The discovery and mapping of magnetic stripes on the seafloor

**Answer X:**
The discovery of deep earthquakes along the Pacific Rim by Charles Richter

**Answer Y:**
The recordings of submarine volcanic activity along mid-ocean ridges in the 1970s

**Answer Z:**
Sir Edward Bullard's geographic fit of the continents

**Correct Answer:**
W

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Question #: 0000003079
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 22
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

Question Text:
Which stimuli result in adaptations such as vertical migration and countershading in marine life?

Answer W:
Light

Answer X:
Pressure

Answer Y:
Temperature

Answer Z:
Salinity

Correct Answer:
W

Question #: 0000002883
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 23
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

Question Text:
Which natural phenomenon does not cause a tsunami?

Answer W:
Earthquake

Answer X:
Volcanic eruption

Answer Y:
Landslide

Answer Z:
Tide

Correct Answer:
Z

Question #: 0000003094
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 24
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

**Question Text:**
From what does the Sargasso Sea, located within the North Atlantic gyre, gets its name?

**Answer W:**
A Portuguese word for 'warm water'

**Answer X:**
A type of seaweed that is common there

**Answer Y:**
A Norse word for 'calm seas'

**Answer Z:**
The unusual clarity of its waters

**Correct Answer:**
X

Question #: 0000003600
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 25
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
How does increasing atmospheric pressure affect the boiling point of water?

Answer W:
The boiling point decreases

Answer X:
The boiling point does not change

Answer Y:
The boiling point increases

Answer Z:
Water does not boil at higher pressures

Correct Answer:
Y

Question #: 0000002960
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 26
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
Where does primary production by marine plants occur?

**Answer W:**
occurs at all depths

**Answer X:**
is limited to the upper 200 meters of the sea

**Answer Y:**
is limited to the aphotic zone

**Answer Z:**
occurs below the compensation depth only

**Correct Answer:**
X

Question #: 0000002884
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 27
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
What area did Project FAMOUS explore?

**Answer W:**
Atlantic and Pacific Oceans

**Answer X:**
Indian Ocean abyssal plain

**Answer Y:**
East Pacific Rise

**Answer Z:**
Mid-Atlantic Ridge rift valley

**Correct Answer:**
Z

Question #: 0000003076
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 28
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What is the speed of a wave equal to?

**Answer W:**
Height of the wave divided by the period

**Answer X:**
Amplitude divided by the wavelength

**Answer Y:**
Wavelength divided by the frequency

**Answer Z:**
Wavelength divided by the period

**Correct Answer:**
Z

Question #: 0000003152
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 29
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
Where does the relative motion of a transform fault occur?

**Answer W:**
Outside the adjacent ridge axes

**Answer X:**
West of the adjacent ridge axes

**Answer Y:**
Between the adjacent ridge axes

**Answer Z:**
East of the adjacent ridge axes

**Correct Answer:**
Y

Question #: 0000003078
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 30
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
Which of the following is the cause of red tides?

**Answer W:**
Planktonic bloom of red-colored microorganisms

**Answer X:**
Excess of iron compounds in the water

**Answer Y:**
Photosynthesis, combining carbon and water in sunlight

**Answer Z:**
Organic dyes emitted by nudibranchs and neustonic organisms

**Correct Answer:**
W

Question #: 0000002885
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 31
Which characteristic does not describe a tsunami?

Answer W: It can pass across the deep ocean without being noticed.

Answer X: It can be a few meters high with a length extending over 750 kilometers in the deep ocean.

Answer Y: It can propagate at a speed exceeding 700 kilometers per hour in the deep ocean.

Answer Z: It is dangerous when one encounters a tsunami in the deep ocean.

Correct Answer: Z
2016 Buzzer Question
Question Type:  Toss-Up
Question Format:  Multiple Choice
Category:  Geology

**Question Text:**
Which of the following would be used to show the relationship between the height of the land and the depths of the ocean basins?

**Answer W:**
Hypsographic (hip-soh-gra-fic) curve

**Answer X:**
Hypsometric diagram

**Answer Y:**
Mercator projection

**Answer Z:**
Elevation matrix

**Correct Answer:**
W

Question #:  0000003324
Competition:  Regional Competition 3
Round:  sample toss-ups
Pair:  33
Question Text:
At which latitude is there the most ocean and least amount of land present?

Answer W:
60 degrees South

Answer X:
90 degrees South

Answer Y:
30 degrees North

Answer Z:
60 degrees North

Correct Answer:
W
In which suborder are slow swimming whales, which also lack teeth, classified?

Answer W: Odontoceti

Answer X: Cetacea

Answer Y: Mysticeti

Answer Z: Orcinae

Correct Answer: Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Social Sciences

Question Text:
Which ocean-related disaster caused the greatest loss of life in US history?

Answer W:
Hurricane Andrew of 1992

Answer X:
The Johnstown Flood of 1889

Answer Y:
The Galveston Hurricane of 1900

Answer Z:
The San Francisco Earthquake of 1906

Correct Answer:
Y

Question #: 0000003836
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 36
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
What type of deposits are formed by conditions no longer existing in that area?

**Answer W:**
Relict sediments

**Answer X:**
Anomalous sediments

**Answer Y:**
Defunct sediments

**Answer Z:**
Derivative sediments

**Correct Answer:**
W

Question #: 0000004825
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 37
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

Question Text:
Which of the following will result in an increase in the speed of sound transmission in ocean water?

Answer W:
Increased temperature

Answer X:
Decreased salinity

Answer Y:
Decreased pressure

Answer Z:
Increased turbulence

Correct Answer:
W
Which is an example of a neritic environment?

Answer W: An estuary

Answer X: The sedimentary surface of the seafloor

Answer Y: Coastal ocean waters

Answer Z: The surface waters of the Great Lakes

Correct Answer: Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
When does the higher berm on a beach form?

**Answer W:**
During neap tides

**Answer X:**
During the summer in times of low energy waves

**Answer Y:**
During winter conditions

**Answer Z:**
During high wave conditions at low tide

**Correct Answer:**
Y

Question #: 0000003314
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 40
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
Generally, what are conservative elements in seawater?

Answer W:
Major components

Answer X:
Minor components

Answer Y:
Easily dissolved

Answer Z:
Used in photosynthetic activity

Correct Answer:
W

Question #: 0000002965
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 41
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Technology

Question Text:
Which of these oceanographic vehicles is the only autonomous vehicle?

Answer W:
ALVIN

Answer X:
NR-1

Answer Y:
ABE

Answer Z:
NAUTILE

Correct Answer:
Y

Question #: 0000003543
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 42
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
Which of the following is the result of the oxidation of organic matter in sediments?

**Answer W:**
Loss of clay particles

**Answer X:**
Consumption of oxygen

**Answer Y:**
Production of oxygen

**Answer Z:**
Hydrothermal vent activity

**Correct Answer:**
X

Question #: 0000002888
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 43
Which submarine first traveled under the ice pack?

Answer W: 
USS Nautilus in 1932

Answer X: 
USS Nautilus in 1958

Answer Y: 
USS Skate in 1958

Answer Z: 
USS Seadragon in 1960

Correct Answer: 
X
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

**Question Text:**
Approximately, when did the North America began to separate from Europe?

**Answer W:**
10 million years ago

**Answer X:**
50 million years ago

**Answer Y:**
200 million years ago

**Answer Z:**
1 billion years ago

**Correct Answer:**
Y

Question #: 0000003070
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 45
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
What is the most important source of nutrients for phytoplankton in the open ocean?

**Answer W:**
Salt fingers

**Answer X:**
Upwelling

**Answer Y:**
Photic zone recycling

**Answer Z:**
Mixing by internal waves

**Correct Answer:**
Y

Question #: 0000002892
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 46
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

**Question Text:**
What was a major flaw in the 150AD maps drawn by Ptolemy?

**Answer W:**
Distortion of surface currents in the Mediterranean

**Answer X:**
Distortion of distance with longitude

**Answer Y:**
Distortion of distance with latitude

**Answer Z:**
Distortion of topographic features

**Correct Answer:**
X

Question #: 0000003464
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 47
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
What does the Law of Constancy of Composition state?

Answer W:
The relative proportion of ions and their concentrations are virtually constant

Answer X:
The relative proportions of ions are virtually constant, but their concentrations may vary

Answer Y:
Changes in salinity will result in changes in the ionic concentration

Answer Z:
Ionic concentrations remain fairly constant regardless of the local environmental conditions

Correct Answer:
X

Question #: 0000002967
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 48
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What is the name for the point at which the moon is farthest away from the Earth during its orbit?

**Answer W:**
Perigee

**Answer X:**
Apogee

**Answer Y:**
Neap

**Answer Z:**
Equinox

**Correct Answer:**
X

Question #: 0000003101
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 49
2016 Buzzer Question

Question Text:
What type of symbiotic relationship exists between zooxanthellae and coral?

Answer W:
Parasitism

Answer X:
Mutualism

Answer Y:
Commensalism

Answer Z:
Amensalism

Correct Answer:
X

Question #: 0000002893
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 50
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

Question Text:
Which of the following is NOT TRUE about Langmuir circulation?

Answer W:
It is produced by the wind

Answer X:
It was first observed in the Sargasso Sea

Answer Y:
It occurs only where there is coastal upwelling

Answer Z:
It results in streaks of foam and debris along the surface of the ocean

Correct Answer:
Y

Question #: 0000003106
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 51
Which of the following resulted in the production of an accurate map of the ocean floor?

- **Answer W:** Enough soundings using a weight had been made
- **Answer X:** Sound waves were discovered in water
- **Answer Y:** Echo sounding was developed
- **Answer Z:** Oceanographers used sound to locate submarines

**Correct Answer:** Y
What is the salinity range where you would find the turbidity maximum in an estuary?

**Answer W:**
1 to 5 ppm.

**Answer X:**
5 to 15 ppm.

**Answer Y:**
15 to 25 ppm.

**Answer Z:**
25 to 35 ppm.

**Correct Answer:**
W
What type of plate is the San Andreas fault?

- **Answer W:** Convergent plate boundary
- **Answer X:** Divergent plate boundary
- **Answer Y:** Transform plate boundary
- **Answer Z:** Transcurrent plate boundary

**Correct Answer:** Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
Which of the following is an implication of surface divergence?

**Answer W:**
Horizontal mixing must occur as a consequence

**Answer X:**
Biological productivity will decrease

**Answer Y:**
Vertical circulation must occur as a consequence

**Answer Z:**
Productivity remains constant

**Correct Answer:**
Y

Question #: 0000003525
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 55
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
What is an autotroph?

**Answer W:**
A generator of its own food

**Answer X:**
A producer of reduced carbon

**Answer Y:**
A consumer of plants

**Answer Z:**
A consumer of animals

**Correct Answer:**
W

Question #: 0000002895
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 56
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

**Question Text:**
In methane hydrates, what traps the methane gas?

**Answer W:**
Carbon dioxide

**Answer X:**
Water

**Answer Y:**
Argon

**Answer Z:**
Oxygen

**Correct Answer:**
X

Question #: 0000002963
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 57
What is your latitudinal position at dusk when the smallest angle between the horizon and the North Star (Polaris) is 22 degrees?

Answer W: 44 degrees N

Answer X: 78 degrees N

Answer Y: 46 degrees N

Answer Z: 22 degrees N

Correct Answer: Z
2016 Buzzer Question

Category: Social Sciences

Question Type: Toss-Up
Question Format: Multiple Choice

Question Text:
Which of the following is prohibited in US marine sanctuaries?

Answer W:
Swimming

Answer X:
Fishing

Answer Y:
Dredging

Answer Z:
Shipping

Correct Answer:
Y

Question #: 0000003832
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 59
Which of the following best defines the wavelength of a wave?

Answer W: It is the distance from crest to trough measured horizontally

Answer X: It is the distance from crest to trough measured vertically

Answer Y: It is the time it takes for two troughs to pass a stationary point

Answer Z: It is the smallest distance between two crests.

Correct Answer: Z
Where is the feature called the Moho situated?

Answer W: Within the asthenosphere

Answer X: Beneath the asthenosphere

Answer Y: Within the lithosphere

Answer Z: Between the lithosphere and the asthenosphere

Correct Answer: Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
Which of the following results in the high speed of sound in bottom ocean waters?

**Answer W:**
Low salinity

**Answer X:**
High temperature

**Answer Y:**
Low pressure

**Answer Z:**
Increased density and pressure

**Correct Answer:**
Z

Question #: 0000003507
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 62
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Social Sciences

Question Text:
Who first developed the concepts of latitude and longitude?

Answer W:
Eratosthenes (Ee-ra-tos-ten-nees)

Answer X:
Pythagorus

Answer Y:
Ptolemy

Answer Z:
Prince Henry the Navigator

Correct Answer:
W

Question #: 0000003214
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 63
What does a chemical equation with a negative delta G indicate?

Answer W: Releasing energy and not spontaneous

Answer X: Endothermic and spontaneous

Answer Y: Exothermic and may be spontaneous

Answer Z: Using energy and not spontaneous

Correct Answer: Y
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

Question Text:
Near which city is the US National Hurricane Center located?

Answer W:
Cape Canaveral

Answer X:
Houston

Answer Y:
Miami

Answer Z:
Tampa

Correct Answer:
Y

Question #: 0000003599
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 65
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

**Question Text:**
What is the carbon source for marine autotrophic organisms?

**Answer W:**
Inorganic carbon.

**Answer X:**
Phytoplankton.

**Answer Y:**
Dissolved organic carbon.

**Answer Z:**
Particulate organic carbon.

**Correct Answer:**
W

Question #: 0000002909
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 66
What is the sum of planetary and relative vorticity known as?

Answer W: Absolute vorticity
Answer X: Momentum vorticity
Answer Y: Positive vorticity
Answer Z: Wind vorticity

Correct Answer: W
2016 Buzzer Question

Question Type: Toss-Up  
Question Format: Multiple Choice  
Category: Geology

**Question Text:**  
Which of the following is NOT a scientific classification of a coral reef type?

**Answer W:**  
Fringing reef

**Answer X:**  
Nearshore reef

**Answer Y:**  
Barrier reef

**Answer Z:**  
Atoll reef

**Correct Answer:**  
X

Question #: 0000003493  
Competition: Regional Competition 3  
Round: sample toss-ups  
Pair: 68
2016 Buzzer Question

Question Type: Toss-Up  
Question Format: Multiple Choice  
Category: Chemical

**Question Text:**
Which three factors are responsible for hypoxic zones in the northern Gulf of Mexico?

**Answer W:**  
Pesticide-laden runoff, high winds, and strong currents

**Answer X:**  
Coastal erosion, sedimentation, and spring overturn

**Answer Y:**  
High river runoff, vertical stratification, and high biological oxygen demand

**Answer Z:**  
Vessel sewage discharges, nutrient elevation, and upwelling

**Correct Answer:**  
Y

Question #: 0000002946  
Competition: Regional Competition 3  
Round: sample toss-ups  
Pair: 69
Which name is given to the wind band between the horse latitudes and the doldrums in the Southern Hemisphere?

- **Answer W:** Prevailing westerlies
- **Answer X:** Northeast trade winds
- **Answer Y:** Southeast trade winds
- **Answer Z:** Polar easterlies

**Correct Answer:** Y

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**Question #: 0000003351**
**Competition: Regional Competition 3**
**Round: sample toss-ups**
**Pair: 70**
What device can be used to map sixty kilometer wide strips of ocean floor?

Answer W: Side-scanning sonar systems

Answer X: Echo sounders

Answer Y: Explosion seismic surveys

Answer Z: Altimeter remote sensing routines

Correct Answer: W
Which marine mammal is known to use tools?

- **Answer W:** Beluga whale
- **Answer X:** White dolphin
- **Answer Y:** Manatee
- **Answer Z:** Sea otter

**Correct Answer:** Z
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

Question Text:
What is a geoid?

Answer W:
An oblate spheroid

Answer X:
A sphere with an envelope of fluids

Answer Y:
A rotating sphere

Answer Z:
The shape of the earth

Correct Answer:
Z

Question #: 0000003049
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 73
2016 Buzzer Question

Category: Chemical

Question Text:
Which of the following primarily causes the variation in the salinity of seawater?

Answer W:
Carbon dioxide

Answer X:
Sodium ions

Answer Y:
Chloride ions

Answer Z:
Water molecules

Correct Answer:
Z

Question #: 0000002953
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 74
Which of the following is NOT a type of marine phytoplankton that makes up a major portion of marine sediments?

**Answer W:**
Dinoflagellates

**Answer X:**
Diatoms

**Answer Y:**
Coccolithophorids

**Answer Z:**
Radiolarians

**Correct Answer:**
W
Which activity has the least impact on seagrass communities?

Answer W: Overharvesting

Answer X: Watershed development

Answer Y: Boating

Answer Z: Fertilizing farmlands

Correct Answer: W
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What is the depth of the water a shallow-water wave is traveling in, by definition?

**Answer W:**
Less than one-twentieth of the wavelength

**Answer X:**
Less than one-half of the wavelength

**Answer Y:**
Less than the wavelength

**Answer Z:**
Less than twice the wavelength

**Correct Answer:**
W

Question #: 0000003153
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 77
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

Question Text:
What is the most abundant excess volatile on Earth?

Answer W:
carbon dioxide

Answer X:
water vapor

Answer Y:
chlorine

Answer Z:
nitrogen

Correct Answer:
X

Question #: 0000002968
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 78
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Biology

Question Text:
Which organism reproduces by shedding gametes into the sea, then depending upon the chance union of egg and sperm?

Answer W:
Blue whale

Answer X:
Purple sea urchin

Answer Y:
Octopus

Answer Z:
Galatheid crab

Correct Answer:
X
What does the gyroscopic compass do?

Answer W: Calculates magnetic variation

Answer X: Senses the earth's rotation and orients its axis of rotation parallel to the earth's axis of rotation

Answer Y: Utilizes the relatively long term fixed positions of the stars

Answer Z: Indicates latitude and longitude

Correct Answer: X
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What is a wind blowing from the northeast to the southwest called?

**Answer W:**
Northwest

**Answer X:**
Northerly

**Answer Y:**
Northeast

**Answer Z:**
Southwest

**Correct Answer:**
Y

Question #: 0000003514
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 81
Question Text:
Which two molecules increase in concentration in deep water as it travels from the North Atlantic to the North Pacific ocean?

Answer W:
Oxygen and nitrate

Answer X:
Nitrate and carbon dioxide

Answer Y:
Oxygen and carbon dioxide

Answer Z:
Carbon dioxide and carbon-14

Correct Answer:
X
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Technology

**Question Text:**
Which Navy-developed model will give a global analysis and forecast, out to 6 days, for significant wave height and direction?

**Answer W:**
NOGAPS (No-Gaps)

**Answer X:**
COAMPS (Co-Amps)

**Answer Y:**
WAM (wham)

**Answer Z:**
STWAVE (S-T-Wave)

**Correct Answer:**
Y

Question #: 0000003215
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 83
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Social Sciences

Question Text:
Who discovered that the White Cliffs of Dover contained layers of coccolithophorids?

Answer W:
Robert Hooke

Answer X:
Robert Brown

Answer Y:
Anton van Leeuwenhoek

Answer Z:
Camillio Golgi

Correct Answer:
Y

Question #: 0000003194
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 84
What is the range of fine sand, on the Wentworth scale of particle size?

Answer W: 0.5 to 1 millimeter

Answer X: 0.25 to 0.5 millimeter

Answer Y: 0.125 to 0.25 millimeter

Answer Z: 0.05 to 0.125 millimeter

Correct Answer: Y

Question #: 0000003084
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 85
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

**Question Text:**
Exclusive Economic Zones cover what percent of the seafloor?

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**Answer W:**
16 percent

**Answer X:**
24 percent

**Answer Y:**
36 percent

**Answer Z:**
52 percent

**Correct Answer:**
Y

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Question #: 0000003051
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 86
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

**Question Text:**
What environmentally harmful isotope was produced during the 1954 'Bravo' thermonuclear detonation at Bikini Atoll?

**Answer W:**
Uranium 238

**Answer X:**
Nitrogen-15

**Answer Y:**
Cesium 137

**Answer Z:**
Carbon 14

**Correct Answer:**
Y

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Question #: 0000002964
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 87
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

Question Text:
What is the second largest reservoir, by volume, on the planet?

Answer W:
The atmosphere

Answer X:
Freshwater lakes

Answer Y:
Ice sheets and glaciers

Answer Z:
Groundwater

Correct Answer:
Y

Question #: 0000005004
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 88
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Technology

**Question Text:**
How does a Global Positioning System receiver calculate the distance to a GPS satellite?

**Answer W:**
By transmitting and receiving a radar signal aimed at the satellites

**Answer X:**
Using trigonometry and a radio direction finder aimed at multiple satellites

**Answer Y:**
By detecting the Doppler shifts in the satellite's transmission

**Answer Z:**
By receiving a time-stamped signal from the satellite.

**Correct Answer:**
Z

Question #: 0000003213
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 89
Some coral colonies remove calcium carbonate from seawater and deposit it as limestone in the reef. What is the range of yearly accumulation of limestone in a typical square mile of a reef?

**Answer W:**
10 to 50 tons

**Answer X:**
100 to 150 tons

**Answer Y:**
4000 to 7000 tons

**Answer Z:**
100,000 to 500,000 tons

**Correct Answer:**
Z
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

Question Text:
Which best describes the concept of hurricanes as heat transfer engines?

Answer W:
Transfer the sun's energy from temperate zones to polar zones.

Answer X:
Transfer the sun's energy from the tropics to temperate zones.

Answer Y:
Transfer the sun's energy from temperate zones to the tropics.

Answer Z:
Transfer the sun's energy from the northern to the southern hemispheres.

Correct Answer:
X

Question #: 0000005005
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 91
2016 Buzzer Question
Question Type: Toss-Up
Question Format: Multiple Choice
Category: Chemical

**Question Text:**
Why are chelators important to marine organisms?

**Answer W:**
They absorb sunlight

**Answer X:**
They bind trace metals

**Answer Y:**
They prevent sinking

**Answer Z:**
They enhance feeding

**Correct Answer:**
X
What is ConShelf III?

Answer W:
A manned submersible

Answer X:
An underwater habitat

Answer Y:
A remotely operated vehicle

Answer Z:
An autonomous explorer

Correct Answer:
X

Question #: 0000003217
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 93
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

Question Text:
What is an example of a hydrogenous sediment?

Answer W:
Manganese nodules

Answer X:
Calcareous oozes

Answer Y:
Siliceous oozes

Answer Z:
Brown Red clays

Correct Answer:
W

Question #: 0000004975
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 94
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geography

Question Text:
What is the name of the strait between Australia and Tasmania?

Answer W:
Cook

Answer X:
Bass

Answer Y:
Torres

Answer Z:
Brisbane

Correct Answer:
X

Question #: 0000003053
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 95
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Physical

**Question Text:**
What is the name of the Eastern Boundary current in the South Atlantic?

**Answer W:**
West Wind Drift

**Answer X:**
South Equatorial Current

**Answer Y:**
Benguela Current

**Answer Z:**
Canary Current

**Correct Answer:**
Z

Question #: 0000003105
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 96
2016 Buzzer Question

Category: Biology
Question Type: Toss-Up
Question Format: Multiple Choice

**Question Text:**
What type of organism is Antarctic krill?

**Answer W:**
Copepod

**Answer X:**
Salp

**Answer Y:**
Amphipod

**Answer Z:**
Euphausiid

**Correct Answer:**
Z

Question #: 0000002902
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 97
Question Text:
How many years does it take for an amount of water equal to the entire volume of the ocean to cycle through hydrothermal vents?

Answer W:
1000 years

Answer X:
100,000 years

Answer Y:
10 million years

Answer Z:
1 billion years

Correct Answer:
Y
2016 Buzzer Question

Question Type: Toss-Up
Question Format: Multiple Choice
Category: Geology

Question Text:
Which of the following is a component of siliceous ooze?

Answer W:
Foraminifers

Answer X:
Radiolarians

Answer Y:
Pteropods

Answer Z:
Coccolithophores

Correct Answer:
X

Question #: 0000003311
Competition: Regional Competition 3
Round: sample toss-ups
Pair: 99
The methods of electrodialysis, reverse osmosis, and ion exchange are used for which purpose?

Answer W: Determining water salinity

Answer X: Measuring current velocity

Answer Y: Desalination

Answer Z: Determining residence time

Correct Answer: Y