Weekly Planner: All science week of 12.3.18 



**Objectives for the week**: Bio.3.3.1 Interpret how DNA is used for comparison and identification of organisms. Bio.3.3.2 Summarize how transgenic organisms are engineered to benefit society. Bio.3.3.3 Evaluate some of the ethical issues surrounding the use of DNA technology (including cloning, genetically modified organisms, stem cell research, and Human Genome Project).

Chm.2.2.5 Analyze quantitatively the composition of a substance (empirical formula, molecular formula, percent composition, and hydrates).

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| --- | --- | --- |
| Day | **Honors Biology** – How can humans change the world? | **Honors Chemistry** -What is pH and how does it relate to acids/bases? |
| Mon 12/3 | http://www.worldometers.info/world-population/  https://www.youtube.com/watch?v=QsBT5EQt348&t=1s  NOTES: population growth | NOTES: pH, pOH, and Kw  Practice  \*HW= |
| Tues 12/4  STUDY BUDDIES! |  | **LAB: pH and neutralization reactions!** |
| STUDY 12/5 BUDDIES! |  | Lab: Titrations |
| Thurs 12/6 |  | Review |
| Friday 12/7 |  | **QUEST** |

Monday 10.29.18- https://evansccca.weebly.com/

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BIO: http://glencoe.mheducation.com/sites/dl/free/0078757134/383928/BL\_04.html

https://www.biologycorner.com/worksheets/virtual\_lab\_population.html

http://virtualbiologylab.org/biodiversity-ecology/

**ISLAND BIOGEOGRAPHY**

**Introduction**

Biogeography is the study of large-scale patterns of distribution and abundance of organisms. One of the longest-standing observations of early naturalists (and, later, of biogeographers) is that islands typically contain fewer species of any particular group of organisms than do continents. Furthermore, the number of species on an island is often a function of the area of the island and its distance from a continent. In the 1960s, ecologists Robert MacArthur and E. O. Wilson developed a graphical model to explain these observed species richness patterns on islands.

Their model focused on four variables:

(1) island size (Diameter)

(2) island Distance from the mainland

(3) the colonization rate, or the rate at which new species arrive on the island

(4) the extinction rate, or the rate at which species currently on the island die off.

EXPERIMENTAL Design #1

1. Clear Islands

2. Use the following settings: Tropical habitat, Distance of both islands at 10 Km (6.25 miles), Diameter of both islands at 256 Km, Taxon of Arthropods, migration rate at 2, mortality rate at 0.05. Run for 30 second intervals and record below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | # Species 1 | Species 2 | Species 3 | Species 4 | Species 5 | Species 6 | Species 7 | Species 8 | Species 9 | Species 10 |
| XXX  XXX | Red fly |  |  |  |  |  |  |  | Purple ant |  |
| 0 sec |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |
| 90 |  |  |  |  |  |  |  |  |  |  |
| 120 |  |  |  |  |  |  |  |  |  |  |
| 3 min |  |  |  |  |  |  |  |  |  |  |
| 4 min |  |  |  |  |  |  |  |  |  |  |
| 5 min |  |  |  |  |  |  |  |  |  |  |

EXPERIMENTAL Design #2

1. Clear Islands

2. Use the following settings: Tropical habitat, Distance of both islands at 10 Km (6.25 miles), Diameter of both islands at 256 Km, Taxon of Birds, migration rate at 2, mortality rate at 0.05. Run for 30 second intervals and record below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | # Species 1 | Species 2 | Species 3 | Species 4 | Species 5 | Species 6 | Species 7 | Species 8 | Species 9 | Species 10 |
| XXX  XXX | Red fly |  |  |  |  |  |  |  | Purple ant |  |
| 0 sec |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |
| 90 |  |  |  |  |  |  |  |  |  |  |
| 120 |  |  |  |  |  |  |  |  |  |  |
| 3 min |  |  |  |  |  |  |  |  |  |  |
| 4 min |  |  |  |  |  |  |  |  |  |  |
| 5 min |  |  |  |  |  |  |  |  |  |  |

EXPERIMENTAL Design #3

1. Clear Islands

2. Use the following settings: Tropical habitat, Distance of both islands at 10 Km (6.25 miles), Diameter of both islands at 256 Km, Taxon of Reptiles, migration rate at 2, mortality rate at 0.05. Run for 30 second intervals and record below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | # Species 1 | Species 2 | Species 3 | Species 4 | Species 5 | Species 6 | Species 7 | Species 8 | Species 9 | Species 10 |
| XXX  XXX | Red fly |  |  |  |  |  |  |  | Purple ant |  |
| 0 sec |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |
| 90 |  |  |  |  |  |  |  |  |  |  |
| 120 |  |  |  |  |  |  |  |  |  |  |
| 3 min |  |  |  |  |  |  |  |  |  |  |
| 4 min |  |  |  |  |  |  |  |  |  |  |
| 5 min |  |  |  |  |  |  |  |  |  |  |

EXPERIMENTAL Design #4

1. Clear Islands

2. Use the following settings: Tropical habitat, Distance of both islands at 10 Km (6.25 miles), Diameter of both islands at 256 Km, Taxon of mamals, migration rate at 2, mortality rate at 0.05. Run for 30 second intervals and record below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | # Species 1 | Species 2 | Species 3 | Species 4 | Species 5 | Species 6 | Species 7 | Species 8 | Species 9 | Species 10 |
| XXX  XXX | Red fly |  |  |  |  |  |  |  | Purple ant |  |
| 0 sec |  |  |  |  |  |  |  |  |  |  |
| 30 |  |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |
| 90 |  |  |  |  |  |  |  |  |  |  |
| 120 |  |  |  |  |  |  |  |  |  |  |
| 3 min |  |  |  |  |  |  |  |  |  |  |
| 4 min |  |  |  |  |  |  |  |  |  |  |
| 5 min |  |  |  |  |  |  |  |  |  |  |

EXTENSION:

Describe a Design of your own. Explain what happened and why.