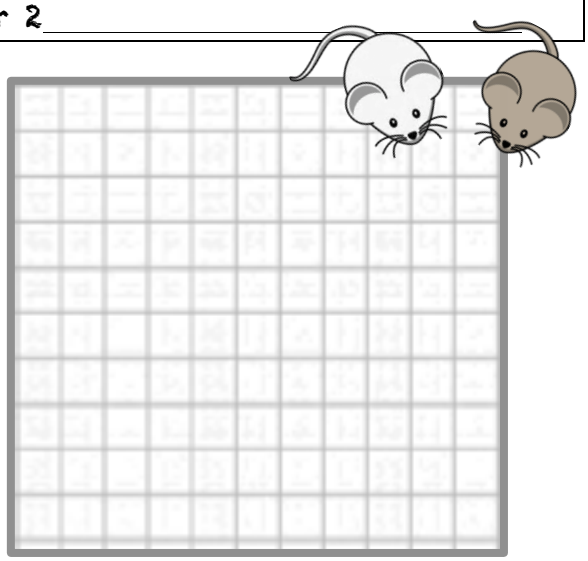
Mouse Change-Over-Time

Name _____ Period___

Player 2 _____

Mouse Generations Data Chart (Tally your results.)

Sand Color	Gener-ation	Lived White	Lived Brown	Died White	Died Brown
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				



The Mouse Generations:

__1. Work on this lab with one other person. Keep the cards organized for the next use.
__2. Mix up the mouse cards for a Mouse Card pile and the event cards for and Event Card pile.
__3. The first environment is Brown Sand Dunes. You will use the cards to model what might happen to a group of mice that live in an environment of brown sand dunes.

__Listen for a change!

__4. Player 1: Choose 2 Mouse Cards, one from each parent, to represent the sex cells.
   a) Gene allele B is dominant for Brown hair color, or Brown mice
   b) Gene allele b is recessive for white hair. "bb" produces white mice.
__5. Choose an event card.
   a) A Survival card means the mouse survives (lives).
   b) A Disease or a Predator All card means the mouse dies.
   c) A Predator Contrast card means the mouse dies **if its color contrasts** with the sand dunes. (Only brown mice die if sand dunes are white.)
   d) A Mutant Mouse card? Choose a Mutation Card.
   e) **Paperclip Mutation Card to only 1 of the mouse cards.**
__6. Record fate of all of the mouse with a tally mark in your ( ) table. ( )
__7. Place the mouse (2 cards = 1 mouse) in the correct pile, Live or Dead.
__8. Put the Event Card at the bottom of its pack.
__9. Player 2 (or the next player): Starts at #4. Take turns and record all of both of your results.

__10. **All Cards Used = NEW GENERATION:** Move to the next mouse **generation** in your chart.
__11. a) **Leave the dead mice in the Dead Mice pile untouched.**
__12. b) Leave Paper Clipped Mutation Cards CLIPPED TO Mouse Card.
   Mix Live Mice cards. Mix Event Cards.
__13. Use the piles of mixed Mouse Cards and Event Cards for the next generatons(s).

__14. **Graph the populations** of each color mouse.
   Mark environmental changes with a vertical line. Label.

Over → → →

Mouse Change-Over-Time

Name_____ Period__

Player 2_____

Consider:
Natural Selection→ Change-Over-Time → Evolution

__15. This activity is designed to help you think about change-over-_____ or the slow evolving of traits. When the environment changes, some organisms do better, some do _____ Those that do better will survive, have offs_____ and pass their genetic t_____ on to the next gen_____ Over time, the species changes.

__16.A Mutation (unpredictable change in D_____) sometimes cause a noticeable change that increases or de_____ the ability of an organism to sur_____ . Helpful mutation(s) start with 1 organism and spread slowly through repr_____ .

__17.The increased survival, reproduction & population is called Natural Selection.

__18. When Natural Selection results in a trait change in an entire group or species, it is also change-over-time or evolution. Most changes are small and go unnoticed.

__19. If a mutation caused a brown mouse to have white fur with pale brown spots then that mouse might live on either white or _____ sand and produce brown spotted offspring. If, as the sand changes colors, the spotted mice are the only survivors, then that would be Change-over-_____ and an example of evolving. Enough change becomes a new species, a group with similar DNA that produce similar off_____.

___20. If the environment changes so much that there aren't enough offspring to reproduce, then the species may become e_____ . If the beach (and its mice) were divided (as the G_____ Islands were) over time a new species may develop in only _____.