



Wind Speed

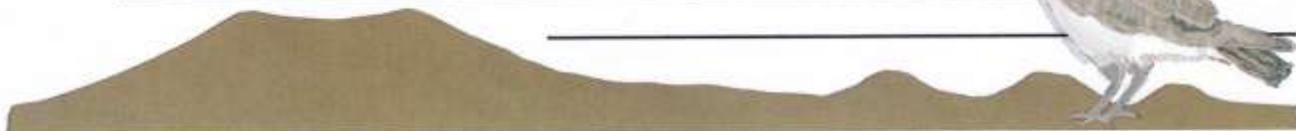


Anemometer

INSTRUCTIONS: Estimate the wind speed in each of the three habitats. Then measure the wind speed in those same locations using the anemometer. Do additional areas if you wish.

Location	Estimated Wind Speed (Wind units?)	Beaufort Estimate (Wind units?)	Anemometer Measurement (Wind units?)
Crack Habitat			
Lava Tube Surface			
Inside Lava Tube beneath skylight			
Cinder Flat			
Optional Additional Location (Name)			
Optional Additional Location (Name)			

How variable was the wind and what seemed to affect it most?



Crack Habitat



Thermometer



Light meter



Carpenter's Rule

INSTRUCTIONS: Find 3 cracks or crack segments and measure the temperature (using the laser thermometer) at the surface and at depth. Use the light meter to measure the light in foot candles (FC) or kilo-foot candles (KFC) at the surface and at arm's length in the cracks. Measuring humidity at the surface and at arm's length is optional. Record any plant or animal life seen. Measure the depth and width of each crack in centimeters.

	CRACK #1 Depth: ____ Width: ____		CRACK #2 Depth: ____ Width: ____		CRACK #3 Depth: ____ Width: ____	
	AT SURFACE	AT DEPTH	SURFACE	DEPTH	SURFACE	DEPTH
Temperature						
Light—designate FC or KFC						
Humidity (Optional)						
Animal or Plant Life Seen						



Nature: look closely!



INSTRUCTIONS: Use the hand lens to look closely at material found in *Mother Nature*. Record what object you observed, where the object was found (location), and the details about what you noticed or observed using the hand lens.

Object	Location	What I noticed/observed about the object with the hand lens.



Use Your Senses

INSTRUCTIONS:

Sit quietly (no fidgeting!) in each location for several minutes. As you sit, use your senses of **seeing, hearing, smelling, and feeling** to learn things about each location. Describe in detail what you observed in the space below.

Lava Crack Habitat	Lava Tube Habitat
SEE	SEE
HEAR	HEAR
SMELL or FEEL	SMELL or FEEL

Cinder Flat Habitat		
SEE	HEAR	SMELL or FEEL



Cave Habitat



Thermometer



Light meter



Humidiguide

INSTRUCTIONS: Do a transect in a lava tube cave and measure the environmental conditions inside. Take measurements at 7 stops, each 5 meters (about ~16 feet) apart. You will measure: the amount of light and the temperature at the ceiling, ½ of the way down the wall, and at the floor. Humidity measurement is optional. Identify any plant or animal life or any signs of life (for example, poop, feather, fur, or odor).

Transect	Start 0 meters	5 meters	10 meters	15 meters	20 meters	25 meters	30 meters
Temp @ Ceiling							
Temp ½ down Wall							
Temp @ Floor							
Light Measurement							
Light Units FC or KFC							
Life Or Signs Of Life							
Humidity							



Location

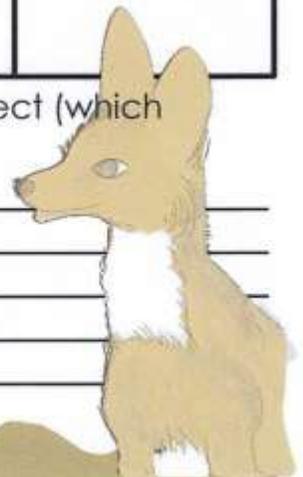


INSTRUCTIONS: Using the GPS record information about each location below. For your datum, select NAD83 and use the UTM coordinate system. Each group should also mark where they are on the park map.

Location	Point of Interest?	Easting	Northing	Elevation
Lava Flow Crack Habitat				
Lava Tube Habitat				
Cinder Flat Habitat				



What do you think about how elevation or the slope aspect (which direction it faces) affect plant or animal life? Why?



Continue on the back if you need more room.