

Kingdom Plantae Assessment

Name: _____ Block: _____

Your task is to HYPOTHESIZE a design of a **leaf** and **structure of entire plant** that will thrive in the conditions available to your organism and support your design choice with an explanation.

Leaf/Environmental Conditions	Dice roll	Circle category that matches dice roll	How this category affects the rate of:	
			Transpiration	Photosynthesis
Cuticle Thickness		1 or 2 – Thin 3 or 4 – Medium 5 or 6 - Thick		
Air Temperature		1 or 2 – Cool 3 or 4 – Medium 5 or 6 - Hot		
Light Availability		1 or 2 – Minimum 3 or 4 – Medium 5 or 6 - Maximum		
Soil Water Availability		1 or 2 – Minimum 3 or 4 – Medium 5 or 6 - Maximum		
Wind strength		1 or 2 – Minimum 3 or 4 – Medium 5 or 6 - Maximum		
Number of Stomata		1 or 2 – Not many 3 or 4 – Medium 5 or 6 - Many		

Content to include in your hypothesis and analysis:

1. (Emg/Dev) In a drawing and/or conversation, explain each part of your leaf design and describe how each is responsible for balancing transpiration rates and/or maximizing photosynthesis rates for optimal survival.
2. (Prf) In a drawing and/or conversation, explain the features of the plant and how your leaves are attached to the stem and describe how each is responsible for balancing transpiration rates and/or maximizing photosynthesis rates for optimal survival.
3. (Ext) In a picture and/or conversation, describe features of an organism that would require your plant for its survival. Why does this organism require your plant for its survival? Explain how the organism features correlate with your plant features to maximize their relationship.