Name:_____ Date:_____ Period:_____

Assignment #:_____

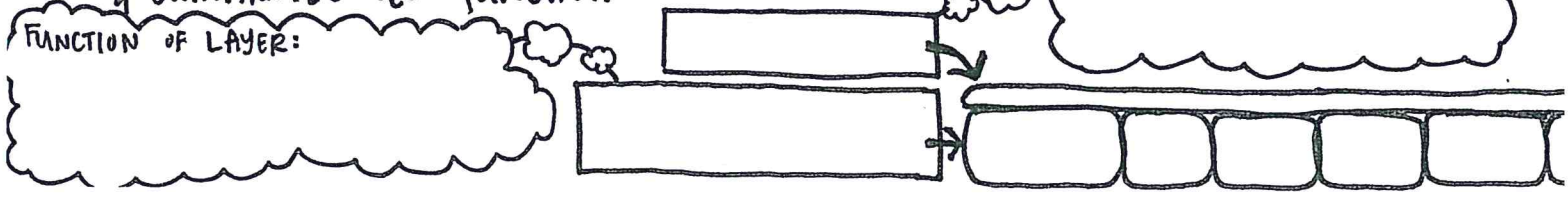
Leaf Structure & Function

CHECKLIST:

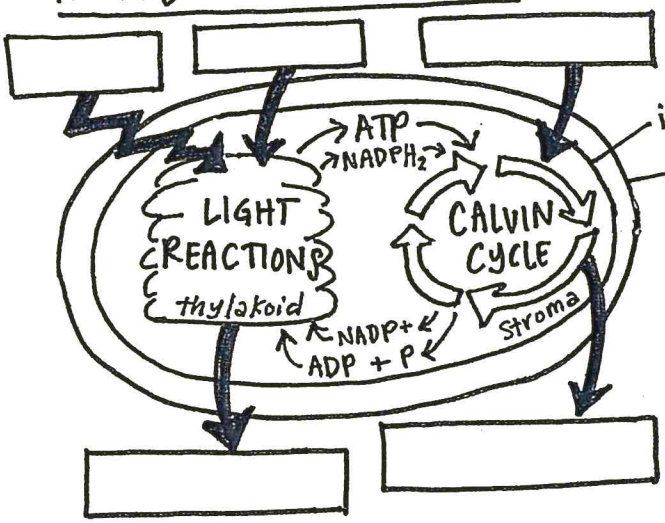
- ☐ Label the CUTICLE & UPPER EPIDERMIS
- ☐ Color the CUTICLE yellow & summarize its function
- ☐ Color the UPPER EPIDERMIS light green & summarize its function

FUNCTION OF LAYER:

FUNCTION OF LAYER:



INSIDE A CHLOROPLAST



CHECKLIST:

- ☐ Write the full, balanced chemical equation for photosynthesis in the space provided below
- ☐ Label all reactants & products of the light reactions & the Calvin Cycle in the diagram (left)
  - * H_2O
  - * Glucose
  - * light
  - * CO_2
  - * O_2

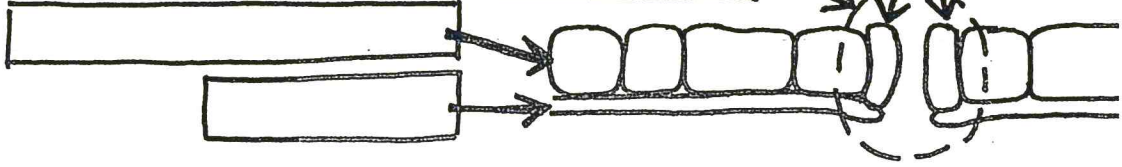
EQUATION FOR PHOTOSYNTHESIS:

CHECKLIST:

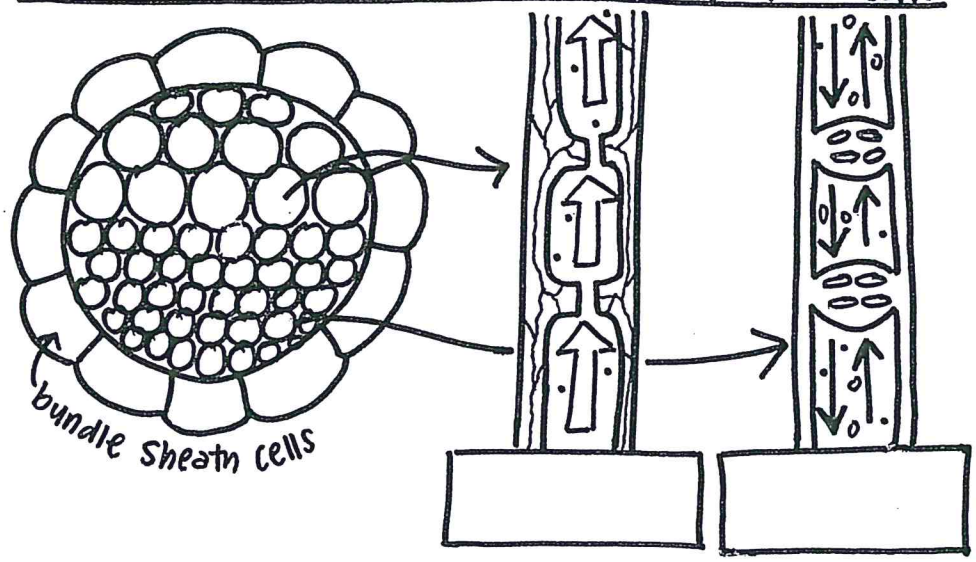
- ☐ Label the CUTICLE, LOWER EPIDERMIS, STOMA, & GUARD CELLS
- ☐ Color the following & summarize their functions:
  - CUTICLE = yellow
  - LOWER EPIDERMIS = light green
  - GUARD CELLS = orange
  - STOMA (outline) = red
- ☐ Add arrows to model how the following molecules travel through the STOMA during PHOTOSYNTHESIS:
  - CO_2 (carbon dioxide)
  - O_2 (oxygen)
  - H_2O (water)
- ☐ EXPLAIN – How are the STOMA influenced by the environment? When are they closed? ... open?

FUNCTION OF THESE CELLS:

FUNCTION OF THIS PORE:



INSIDE THE VASCULAR BUNDLE (vein) OF A LEAF:



CHECKLIST:

- ☐ Label the PHLOEM & color them in PINK
- ☐ Label the XYLEM & color them in BLUE
- ☐ Color the BUNDLE SHEATH CELLS in PURPLE
- ☐ EXPLAIN – How are the PHLOEM & XYLEM similar? ... different?

fold here

CHECKLIST:

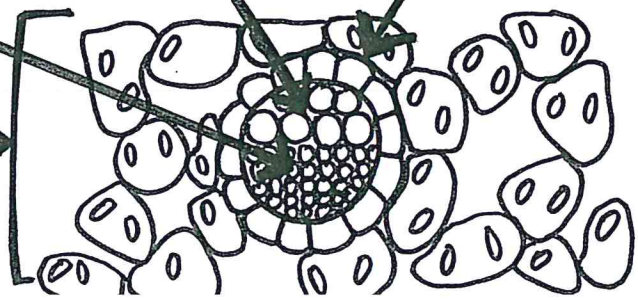
- ☐ Label the SPONGY MESOPHYLL LAYER, XYLEM, PHLOEM, & BUNDLE SHEATH CELL
- ☐ Color the chloroplasts in dark green
- ☐ Color the SPONGY MESOPHYLL CELLS in light green & summarize its function
- ☐ Color the PHLOEM pink, the XYLEM blue, & summarize their functions
- ☐ Color the BUNDLE SHEATH CELLS purple & summarize their function

FUNCTION OF THIS VASCULAR TISSUE:

FUNCTION OF THESE CELLS:

FUNCTION OF THIS VASCULAR TISSUE:

FUNCTION OF THIS LAYER:



LEAF FEATURES: MATCHING – Draw straight lines connecting leaf adaptations to the description that explains their purpose in leaf function. Then answer the question below.

ADAPTATIONS	PURPOSE
THIN LEAVES	To support the leaf & transport water, minerals, & sugars
CONTAINS CHLOROPHYLL	to absorb MORE light
NETWORK OF VEINS	CO_2 can diffuse quickly because of the short distance into leaf cells
STOMA/STOMATA	Allows for diffusion of gases into & out of leaf
LARGE SURFACE AREA	Absorbs Sunlight to transfer energy into chemicals

☐ EXPLAIN – Why are leaves in the shade typically LARGER in size & THINNER in thickness than leaves in the sun?

fold here

CHECKLIST:

- ☐ Label the PALISADE LAYER & the CHLOROPLAST
- ☐ Color the CHLOROPLASTS in dark green & summarize its function
- ☐ Color the PALISADE LAYER in light green & summarize its function
- ☐ EXPLAIN – Sometimes leaves have more than one Palisade layer to capture more light. Explain how this benefits the leaves (& ultimately the plant):

FUNCTION OF THIS LAYER:

FUNCTION OF THIS ORGANELLE: