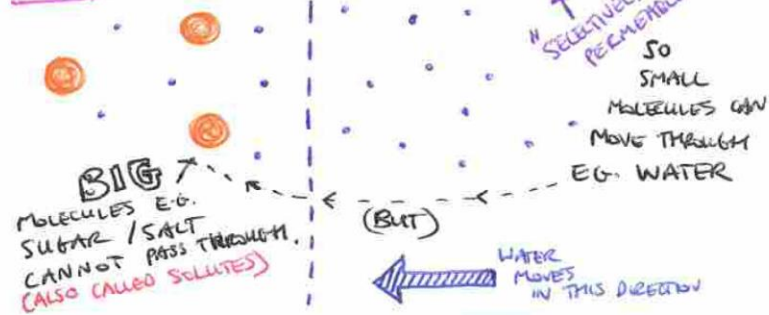


OSMOSIS AND PLANT TRANSPORT

EXAM
QU
HELP!

- THINGS TO DESCRIBE AND EXPLAIN HOW WATER WILL MOVE BETWEEN A CELL AND A SURROUNDING, REMEMBER TO:
- 1 SAY WHICH IS THE HIGH AND WHICH IS THE LOW WATER CONC.
 - 2 SAY IN WHAT DIRECTION THE WATER WILL MOVE
 - 3 SAY BY WHAT PROCESS (OSMOSIS!)
 - 4 GIVE THE OSMOSIS DEFINITION
 - 5 SAY WHAT WILL HAPPEN TO THE CELL WHEN WATER ENTERS / LEAVES...

ALL CELLS HAVE A CELL MEMBRANE



ANIMAL CELL

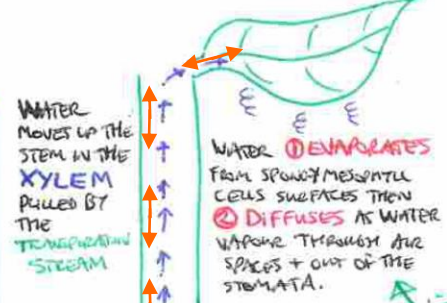


PLANT CELL



WHEN MOLECULES MOVE FROM A HIGHER CONCENTRATION TO A LOWER CONCENTRATION THAT IS CALLED DIFFUSION.

HOWEVER... WHEN WATER DIFFUSES FROM A HIGHER TO A LOWER WATER CONCENTRATION THAT IS CALLED OSMOSIS



Sucrose moves through the phloem in both directions

TRANSPIRATION!

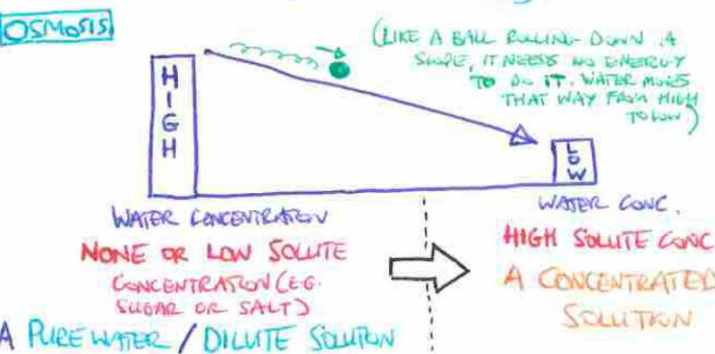


ANY FACTOR THAT MAKES SWEAT DRY FASTER WILL INCREASE TRANSPIRATION

- * HIGH TEMPERATURE - WATER MOLECULES GET MORE KINETIC ENERGY + EVAPORATE MORE
- * WINDY - MOVES HUMID / WET AIR AWAY FROM OUTSIDE THE LEAF / STOMATA AND THEREFORE MAINTAINS A CONCENTRATION GRADIENT (FOR WATER VAPOR TO DIFFUSE OUT OF LEAF)
- * DRY AIR (NOT HUMID) - MAINTAINS A CONC. GRADIENT (SEE ABOVE!)

REMEMBER TO GIVE THE PLANT TIME TO ADJUST / ACCLIMATISE WHEN CHANGING CONDITIONS BETWEEN TAKING RESULTS.

THIS DIFFUSION AND OSMOSIS (WATER DIFFUSION) OF HIGH TO LOW CONCENTRATION SHOWS THAT MOLECULES MOVE DOWN A CONCENTRATION GRADIENT (SLOPE) E.G...



PLANTS NEED WATER FOR

- SUPPORT
- TRANSPORT
- PHOTOSYNTHESIS
- TRANSPORTING MINERALS

WE CAN MEASURE HOW MUCH THEY TAKE IN / THE RATE THEY ABSORB WATER USING A POTOMETER! (BUBBLE)

$$\text{RATE} = \frac{\text{MEASURE}}{\text{TIME}}$$

E.G. $\frac{15 \text{ mm}}{10 \text{ MINUTES}}$

* THE POTOMETER CANNOT GIVE A VALUE FOR RATE OF TRANSPIRATION (WATER LOSS) AS SOME WATER STAYS IN THE PLANT, OR GETS USED IN P.S.

RATE OF WATER UPTAKE IN THOSE CONDITIONS - 1.5 mm/min (millimetres per minute)

