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| MONOCOTS | DICOTS |
| 1 cotyledon | 2 cotyledons |
| Parallel veins | Netlike veins |
| Scattered vascular tissue | Vascular tissue in ring |
| Fiberous root | Taproot |
| Pollen grains-1 opening | Pollen grains-3 openings |
| Flower parts in THREES | Flower parts in 4’s or 5’s |
| Corn, grasses, lily | Poppy, rose, pea |

1.- proton pumps set up H+ gradient for :
 - cotransport of sugars into companion/sieve tube cells
 -uptake of K+ by roots
 - cotransport of nitrates into cells
 - pumping H+ ions out of root into soil displaces cations (Ca++) for uptake
 -active pumping of K+ into guard cells opens stomata
 - auxin acts through pumping H+ ions; acidity weakens cell walls and allows cell elongation (phototropism)
2. Bryophytes & Pteridophytes need water
3. Casparian strip
4. Plasmodesmata
5. ethylene
6. It is a gas
7. Used to make chlorophyll; enzyme cofactor
8. One sperm fertilizes the egg to make the zygote; the 2nd sperm fertilizes the 2 polar nuclei to make endosperm
9. Angiosperms have double fertilization
10. Gametophytes make gametes using mitosis. Sporophytes make spores using meiosis.
11. Root hairs & mychorrhizae
12.

13. Provide food to developing embryo in seed
14. Pteridophytes
15. Roots grow away from light
16. phytochrome
17. Reception-Transduction-Response
18. Gotta have long period of dark; light flash prevents flowering
19. phloem
20. Parenchyma
21. auxin
22. Phloem
23. Nitrogen fixation
24. Bacteria in root nodules of legumes
25. Sporophytes are 2n
26. eggs
27. Carpels (stigma, style, ovary) are female
28. fruit
29. Gymnosperms
30. Air spaces in leaf mesophyll cells