



## ACROSS

- 3 a life cycle that alternates between haploid gametophytes and diploid sporophytes
- 5 structure containing male gametophyte that does not require water to travel to female
- 10 derived trait of seed plants resulting in gametophytes that are entirely contained within the sporophyte
- 12 region at the tips of the plant body where cells divide repeatedly for growth
- 13 triploid tissue that nourishes developing plant embryo
- 15 special microtubules that are the precursor to the cell wall of dividing cells; a shared trait of charophytes and plants
- 16 haploid cell that divides to become the male gametophyte in seed plants
- 18 plants that produce flowers and have seeds that develop in chambers
- 20 specialized pores that exchange gasses and close to prevent water loss
- 21 vascular tissue that conducts water and minerals
- 23 the closest living relative of plants
- 24 photoautotrophic protists that can be multicellular and have chloroplasts and cell walls
- 25 an embryo packaged with a supply of nutrients
- 26 diploid organ that produces the male microspore by meiosis
- 27 organs in the diploid sporophyte that produce spores by meiosis
- 28 paraphyletic angiosperm group with a single embryonic leaf (orchids, grasses, palms)
- 31 the cell of the male gametophyte that divides to produce sperm in angiosperms
- 32 the primary photosynthetic organ of vascular plants
- 33 haploid cell that divides to become the female gametophyte
- 35 specialized shoot with four types of modified leaves used for reproduction
- 37 plants that lack structures to transport water and nutrients
- 39 gametophytes that have organs to make both sperm and eggs
- 41 organs in the haploid gametophyte that produce gametes by mitosis
- 42 a paraphyletic group consisting of nonvascular plants
- 43 layer of sporophyte tissue that protects the megasporangium
- 44 vascular tissue that conducts sugars, amino acids, and organic products
- 45 the most speciose group of gymnosperms

## DOWN

- 1 process that produces a zygote and an endosperm
- 2 multicellular haploid organism that produces eggs and sperm by mitosis
- 4 a haploid cell produced by meiosis
- 6 a polymer that strengthens the cell walls of vascular tissue
- 7 the structure where a gametophyte develops from a megaspore and produces an egg
- 8 mature ovary that protects and/or helps disperse seeds
- 9 diploid organ that produces that megaspore by meiosis
- 11 cells joined into tubes that transport water and nutrients throughout the plant
- 14 multicellular diploid organism that produces spores by meiosis
- 17 era when giant seedless plants stored carbon that is today's coal
- 19 plants that produce seeds not enclosed in chambers
- 22 large group of plants with two embryonic leaves (sunflowers, columbines, etc)
- 29 the transfer of pollen to the part of the plant with ovules
- 30 gametophytes that make either sperm or eggs; shared trait of all seed plants
- 34 a waxy substance that prevents desiccation
- 36 the most widespread seedless vascular plant
- 38 a component of the cell wall of plants and algae
- 40 organs that absorb water and nutrients from the soil