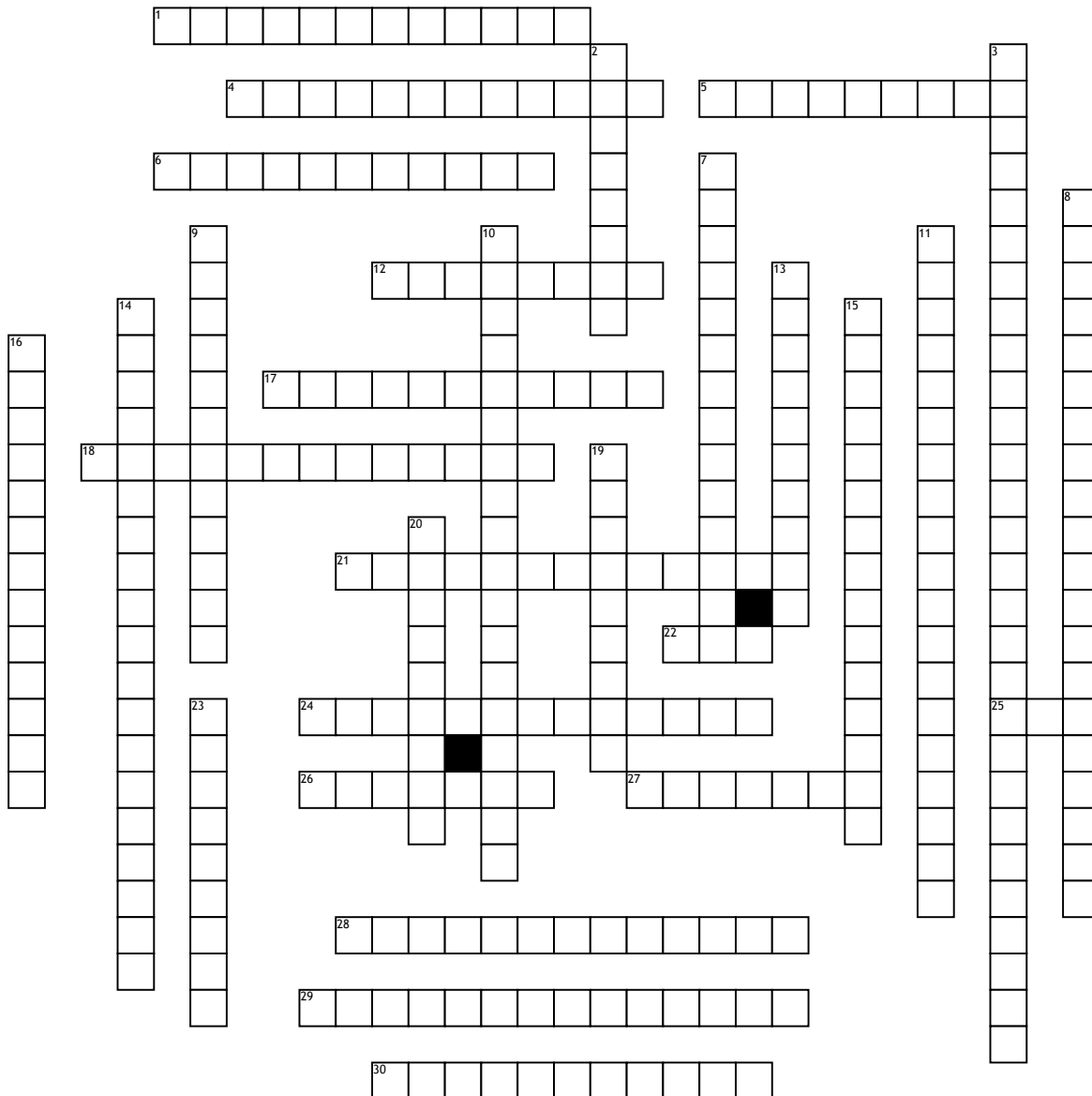


Genetics



Across

1. is a mutation that exchanges one base for another (i.e., a change in a single "chemical letter" such as switching an A to a G). Such a substitution could: change a codon to one that encodes a different amino acid and cause a small change in the protein produced.
4. having two different alleles of a particular gene or genes.
5. Dominance in genetics is a relationship between alleles of one gene, in which the effect on phenotype of one allele masks the contribution of a second allele at the same locus. The first allele is dominant and the second allele is recessive.
6. DNA replication is the biological process of producing two identical replicas of DNA from one original DNA molecule. DNA replication occurs in all living organisms acting as the basis for biological inheritance.
12. is a mutation (a genetic aberration) in which a part of a chromosome or a sequence of DNA is lost during DNA replication. Any number of nucleotides can be deleted, from a single base to an entire piece of chromosome
17. s the process in which ribosomes in the cytoplasm or ER synthesize proteins after the process of transcription of DNA to RNA in the cell's nucleus.
18. is a square diagram that is used to predict the genotypes of a particular cross or breeding experiment. It is named after Reginald C. Punnett, who devised the approach. The diagram is used by biologists to determine the probability of an offspring having a particular genotype.
21. asexual reproduction by a separation of the body into two new bodies.
22. ribonucleic acid, a nucleic acid present in all living cells. Its principal role is to act as a messenger carrying instructions from DNA for controlling the synthesis of proteins, although in some viruses RNA rather than DNA carries the genetic information.
24. the exploitation of biological processes for industrial and other purposes, especially the genetic manipulation of microorganisms for the production of antibiotics, hormones, etc.
25. Deoxyribonucleic acid, a self-replicating material which is present in nearly all living organisms as the main constituent of chromosomes. It is the carrier of genetic information.

26. a special type of cell division that reduces the chromosome number by half, creating four haploid cells, each genetically distinct from the parent cell that gave rise to them. This process occurs in all sexually reproducing single-celled and multicellular eukaryotes, including animals, plants, and fungi

27. is a part of the cell cycle when replicated chromosomes are separated into two new nuclei. Cell division gives rise to genetically identical cells in which the number of chromosomes is maintained.

28. is a cross between two different lines/genes that differ in two observed traits. According to Mendel's statement, between the alleles of both these loci there is a relationship of complete dominance - recessive.

29. A type of mutation that does not result in the death or decreased reproductive capability of an organism instead it accumulates in the gene pool and increases the amount of genetic variation

30. is a form of dominance wherein the alleles of a gene pair in a heterozygote are fully expressed. This results in offspring with a phenotype that is neither dominant nor recessive.

Down

2. is a change in a genetic sequence
3. is any organism whose genetic material has been altered using genetic engineering techniques
7. failure of a pair of homologous chromosomes to separate in meiosis I, failure of sister chromatids to separate during meiosis II, and failure of sister chromatids to separate during mitosis
8. Ecological factor or eco factor is any factor, abiotic or biotic, that influences living organisms. Abiotic factors include ambient temperature, amount of sunlight, and pH of the water soil in which an organism lives.
9. the exchange of genes between homologous chromosomes, resulting in a mixture of parental characteristics in offspring.
10. the production of new living organisms by combining genetic information from two individuals of different types (sexes). In most higher organisms, one sex (male) produces a small motile gamete which travels to fuse with a larger stationary gamete produced by the other (female).

11. is a form of intermediate inheritance in which one allele for a specific trait is not completely expressed over its paired allele. This results in a third phenotype in which the expressed physical trait is a combination of the phenotypes of both alleles

13. any difference between cells, individual organisms, or groups of organisms of any species caused either by genetic differences (genotypic variation) or by the effect of environmental factors on the expression of the genetic potentials (phenotypic variation).

14. A type of reproduction by which offspring arise from a single organism, and inherit the genes of that parent only; it does not involve the fusion of gametes, and almost never changes the number of chromosomes.

15. is a mating between two organisms with different variations at one genetic chromosome of interest.

16. the first step of gene expression, in which a particular segment of DNA is copied into RNA by the enzyme RNA polymerase. Both DNA and RNA are nucleic acids, which use base pairs of nucleotides as a complementary language

19. the emission or transmission of energy in the form of waves or particles through space or through a material medium.

20. the addition of one or more nucleotide base pairs into a DNA sequence. This can often happen in microsatellite regions due to the DNA polymerase slipping

23. a compound or substance that has been purified or prepared, especially artificially