



Tennessee Specific Industry Certification Horticulture Science Content Area Resource

This Tennessee Specific Industry Certification (TSIC) resource provides additional guidance as you prepare your horticulture science instructional materials. The general knowledge and skills are provided as a guide for developing lessons and lab activities that lead to deeper understanding of content. The list of sample terms are just that, a list of industry-specific terms that will build each student's knowledge base for this content area.

General knowledge and skills for Plant Genetics and Reproduction

- Explain the process used with each method of propagation.
- Describe the enzymes associated DNA.
- Explain the purpose of complementary strand as related to plant genetics.
- Describe the role of messenger RNA role in the synthesis of proteins.
- Describe the purpose of DNA.
- Explain the process that occur in the plant during each phase of the plant's life cycle.
- Describe the elements required for optimum germination.
- Compare the functions of DNA enzymes.

Sample terms associated with content area:

- Adenine
- Adenine joining
- Air layering
- Alleles
- Anaphase
- Angiosperms
- Annuals
- Anther
- Aphagia
- Apical meristem
- Apomixis
- Apoptosis
- Apraxia
- Asexual
- Axillary buds
- Biennials
- Bio-diffusion
- Bio-fission
- Bio-genetics
- Bio-injection
- Budding
- Carpels
- Cell division
- Cell fusion
- Cells
- Pools
- Banks
- Depots
- Characteristic
- Chromosomes
- Cloning
- Codominance
- Complete dominance
- Cone bearing
- Corms
- Cotyledon
- Cytokinesis
- Cytoplasm
- Polyploidy
- Dicots
- Diploid
- Diploid cross
- Disease resistance
- Division
- DNA
- Dominant gene
- Dominant meristem
- Dominant trait



Tennessee Specific Industry Certification Resource Topics and Terms

- Dormancy
- Double helix
- Enzymes
- Epidermis
- Evergreens
- Exine
- F1 generation
- F2 generation
- Fertilization
- Fibrous layer
- Filament
- Flower parts
- Fruiting
- Gene
- Geneotype
- Generation time
- Genetic engineering.
- Genome
- Genotype ratio
- Germination
- Genetic Modified Organism's (GMO)
- Grafting
- Guanine
- Gymnosperms
- Haploid
- Hardwood cuttings
- Helicase
- Herbicide resistance
- Heritable
- Heterozygous
- Homogeneous
- Homozygous
- Hybrid genotype
- Hybridization
- Hydrogen
- In vitro
- In-breeding
- Incomplete dominance
- Indole acetic acid (iaa)
- Indole-3-butyric acid (iba)
- Internode.
- Layering
- Leaf cutting(s)
- Leaf primordia
- Leaf veins
- Meiosis.
- Meiotic divisions
- Mendel law
- Messenger RNA
- Metaphase
- Mitochondria
- Mitosis
- Molecule
- Monocots
- Monohybrid genotype
- Monomers
- Mutation
- Mutation breeding
- Mutations
- Naphthaleneacetic acid (naa)
- N-carbamoylpotrescine (ncp)
- Non-heritable
- Nucleotides
- Nucleus
- Offspring
- Ovary
- Parallel veins
- Partial dominance
- Perennials
- Pest resistance
- Petals
- Phenotype
- Phenotypes
- Genotypes
- genetic variation
- genetic invariation
- Pistil
- Plumule
- Pollen
- Pollination
- Polymer
- Polymerase
- Primase
- Radicle
- Recessive traits
- Recombinant DNA
- Replication
- Repositories
- Reproduction
- Reproductive
- Rhizomes
- Root division
- Root tips



- Scattered leaf veins
- Seed dispersal
- Seeds
- Selective breeding
- Sepal
- Sex organs
- Sex-linked
- Softwood cuttings
- Stamen
- Stem cuttings
- Stigma
- Stolons
- Style
- Tapetum
- Teraploid cross
- Transcription
- Translated genotype
- Triploid cross
- True-breeding varieties
- Vascular cambium
- Vascular tissue
- Vegetative
- Zygote