# Tennessee Specific Industry Certification
# Animal Science Content Area Resource

This Tennessee Specific Industry Certification (TSIC) resource provides additional guidance as you prepare your veterinary and animal 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 sample terms that will be helpful to build each student's knowledge base for this content area.

***General knowledge and skills for Genetics***

- Describe the role of gametes, DNA, and chromosomes
- Explain the process of meiosis.
- Identify the parts of a DNA molecule.
- Distinguish between diploid and haploid cells.
- Develop industry specific vocabulary related to animal genetics.
- Select appropriate sire to obtain selected desirable traits.
- Calculate genotypic and phenotypic outcomes.
- Explain the importance of genetic variability.
- Use EPDs and other production records to select for production traits.
- Calculate average daily gain at different life stages of livestock.

**Sample terms associated with content area**

- 205-day weaning weight
- 305-day milk production record
- Accuracy value (ACC)
- Additive genetic variance
- Allele
- Average daily gains (ADG)
- Best linear unbiased prediction (BLUP)
- Birth weight
- Breeding value (BV)
- Chromosomes
- Codominant
- Complete dominance
- Deoxyribose
- Diploid
- Division
- DNA
- Dominant
- Dominant allele
- Duplication
- Egg cells
- Environment
- Expected progeny difference (EPD)
- Fertilization
- Gametes
- Generation interval
- Genes
- Genetic Variability
- Genotype
- Guanine
- Haploid
- Heritability
- Heterosis
- Heterozygous
- Heterozygous dominant
- Highly heritable
- Homozygous dominant
- Homozygous recessive
- Hybrid vigor
- Independent culling level
- Lack of dominance

- Litter size
- Locus
- Low heritable
- Moderately heritable
- Nucleus
- Oocyte
- Phenotype
- Phenotypic ratio
- Phosphate
- Proteins
- Quantitative traits
- Rate of genetic change
- Recessive
- Replication
- Selection differential
- Selection index
- Somatic cells
- Speed index
- Sperm cells
- Tandem
- Yearling
- Zygote