GLOSSARY

Cross—the deliberate mating of two individuals (plants) for genetic analysis

DNA—the macromolecule that contains the genetic material

Dominant gene—a gene that causes the dominant phenotype of a trait to be expressed in the heterozygous genotype

Dominant phenotype—the phenotype of a genotype containing the dominant gene

Drought—a period of below-average rainfall in a given area, resulting in long-term shortages in water supply

Fertilization (also called pollination)—the process of joining pollen and eggs together to produce a new plant embryo

Gene—a unit of genetic information; most genes contain information for making a protein

Genotype—the combination of genes that provide information for a specific trait OR all the specific genes of an individual

Genetic modification (or genetic engineering)—the process of introducing new genes into the genome of an organism using biotechnology techniques

Genetically modified organism (GMO)—an organism that has had one or more genes introduced into its genome by genetic modification

Heterozygote—an individual who contains two different genes for a certain trait, one dominant gene and one recessive gene

Heterozygous—the condition of having two different genes for a certain trait

Homozygote—an individual who contains two of the same genes for a certain trait, either two dominant genes or two recessive genes

Homozygous—the condition of having two of the same genes for a certain trait

Hypothesis—a statement that proposes an explanation for a certain phenomenon based on evidence or observations

Mutation—a change in the DNA sequence that of a gene

Offspring—the next generation produced from a cross; the children of two parents that result from mating

Organism—a living thing: plant, animal, bacteria, fungus, or protist

Ovary—the female reproductive organ of a flower; produces eggs

Ovule—the structure inside the ovary that contains the eggs and develops into a seed after fertilization

Phenotype—the physical expression of a trait OR the physical characteristics of an organism

Pollen—the male reproductive cells of a flower; usually fine, yellow grains

Pollination (also called fertilization)— the process of joining pollen (male reproductive cells) and eggs (female reproductive cells) together to produce a new plant embryo

Punnett square—a grid used as a graphic representation of the result of a cross; used to predict the possible genotypes and phenotypes of offspring resulting from a specific cross

Recessive gene—a gene whose phenotype is not expressed in a heterozygote

Recessive phenotype—the phenotype of a homozygote for the recessive gene

Selective breeding—the process of improving a variety of organism (e.g., a type of crop plant) by consciously selecting the parents and making crosses; usually takes several generations of crossing to produce individuals with desired traits

Trait—a characteristic of an organism that can be inherited from one generation to another