

## Activity 4

### Genetics Definitions

The vocabulary from Activity 1 on the scientific method is important for all your science lessons. Review the Activity 1 vocabulary, with emphasis on the words *analysis*, *data*, *experiment*, *experimental error*, *hypothesis*, *inference*, *measure*, *observation*, *prediction*, and *quantitative data*.

**Actual results** – Data obtained from conducting an experiment.

**Albino** – An organism that lacks pigmentation, resulting in light or white skin, scales, feathers, or fur and light or pink eye color.

**Asexual reproduction** – Production of offspring, or daughter cells, as a result of a parent cell or organism dividing into two identical copies; male and female gametes are not required.

**Cell** – The smallest structural and functional unit of an organism; DNA is located in cells.

**Chance** – The likelihood that an event will occur.

**Characteristic** – A distinguishing feature or characteristic.

**Chromosomes** – Structures that contain compacted DNA molecules; humans have 46 chromosomes and every species has its own unique number.

**Daughter cell** – A cell that is produced when a parent cell divides its genetic material in half, resulting in an exact copy of itself; cell formed by the process of *mitosis*.

**Double helix** – The physical “twisted ladder” structure of DNA.

**DNA** – Deoxyribose nucleic acid; double helix shaped molecules located in the cell nucleus that provide the code for a living organism to grow and function.

**Dominant trait** – A genetic characteristic that produces an obvious visible effect in an organism (such as the ability to roll your tongue or wiggle your ears); one or both parents also display the same visible characteristic.

**Expected results** – Data that you expect to obtain based on a prediction or a hypothesis.

**Gamete** – A special reproductive cell that contains half of the genetic material needed to produce an offspring; cell formed by the process of *meiosis*.

**Gene** – A piece of DNA that contains the code, or directions, for building the proteins that make our body function.

**Genetic cross** – An actual or theoretical experiment that is conducted to determine how a genetic trait, such as eye color in mice, is inherited.

**Genetic trait** – A distinguishing feature or characteristic of an organism coded by genes.

**Genetics** – The study of how genes are expressed and how genetic information gets passed from one generation to the next.

**Genome** – The term used to describe the “library” of genetic information belonging to a species.

**Inheritance** – Passing of genetic information from one generation to the next.

**Inherited trait** – A specific characteristic passed from a parent to its offspring through its genes.

**Meiosis** – A process of cell division that occurs in reproductive cells, or gametes, resulting in each gamete containing half of the chromosomes required to produce an offspring.

**Mitosis** – A process of cell division that occurs in body cells, resulting in two new daughter cells that are exact copies of the parent cell.

**Mutation** – An unexpected variation in the cells of an offspring that occurs when chromosomes are making copies of themselves; can occur during reproduction or as a result of adverse environmental conditions.

**Nucleus** – The center portion of most cells where the DNA is located.

**Offspring** – Progeny, or babies, of humans, animals, or plants.

**Parent cell** – A cell that divides in two, creating two daughter cells that are exact copies of the original cell.

**Probability** – The mathematical likelihood that an event will occur based on an expected or possible result.

**Proteins** – Molecular compounds that are produced by genes; proteins create all the structures and functions within every living organism.

**Punnet square** – A tool used to help predict the outcome of a genetic cross.

**Random sampling** – Samples selected such that each member of a set has an equal chance of being chosen.

**Recessive trait** – A genetic characteristic that is invisible in an organism unless two copies of the recessive gene are present (such as attached ear lobes or lack of a widow’s peak); a recessive gene may be masked by a dominant gene.

**Sexual reproduction** – Production of offspring that occurs when the male parent provides half of the genetic material (male gametes) and the female parent provides the other half (female gametes).

**Zygote** – The result of the joining of a male and a female gamete; a fertilized egg.