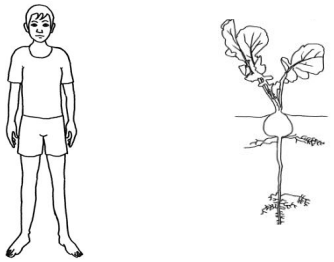
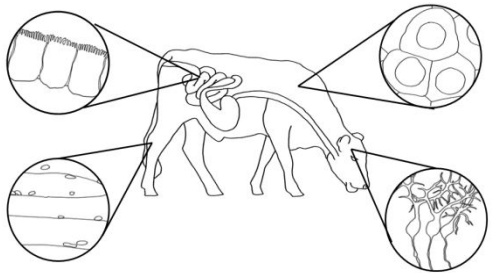
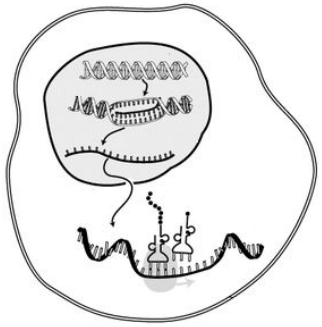
Tracing Genetic Information

	Questions	Rules to Follow (tracing information at a scale)	Evidence We Can Observe (connecting scales)
Organisms 	**Tracing Information:** What is the observable trait? **Connecting scales:** How are traits influenced by heredity and environment?	All organisms come from other organisms and inherit their genes from one parent (asexual reproduction) or two parents (sexual reproduction).	An organism's traits depend on: ● DNA (genes) inside every cell ● The influence of the environment
Cells 	**Tracing Information:** How do cells influence the observable trait? **Connecting scales:** What is going on inside cells?	All cells come from other cells and inherit one of the following: ● the parent cell's genes (mitosis) ● half of the parent cell's genes (meiosis) ● genes from two parent cells (fertilization)	Differences in organisms depend on differences in the structure and function of their cells. The structure and function of a cell is determined by proteins it makes.
Molecules 	**Tracing Information:** Where is the DNA coming from? **Connecting scales:** How is DNA involved in the trait?	All DNA comes from other DNA. DNA replicates before mitosis and meiosis. Mutations can change DNA.	Cells make proteins and other molecules following instructions in their DNA. Scientists can determine the sequence of DNA and measure the amount of different proteins in cells.