

## Thought Lab 18.1: DNA Deductions Answer Key

### Answers to Procedure Questions

Nucleotide	Presence in DNA sample (percent)
adenine	31
cytosine	19
guanine	19
thymine	31

- Your diagram should indicate that adenine-thymine base pairs make up 62 percent of the DNA in this sample, while the cytosine-guanine base pairs would make up the remaining 38 percent of the DNA. If the sample is 20 base pairs long, then 12.4 (round to 12) of them would be A-T and 7.6 (round to 8) would be C-G base pairs. Diagrams should use solid lines to show chemical bonds and dotted lines to show hydrogen bonds.

### Answers to Analysis Questions

- The second DNA sample from the same mouse would be identical. All somatic cells in that mouse contain the same genetic code.
- The relative percentage composition of the DNA nucleotides would not change even though there is only one chromosome from each pair in the gamete. The total amount of DNA is different, but the percentage composition of the nucleotides would not change.
- The nucleotide composition of the mouse would be different than the nucleotide composition of the deer because the composition of DNA is unique to each species. However, the percentage of adenine will remain approximately the same as the percentage of thymine, and the percentage of cytosine will remain approximately equal to the percentage of guanine in each species.