

## ADVANCED BIOLOGY - *Biology, 9<sup>th</sup> Edition*

### Readings for Unit 1: *Themes & Characteristics of Life; Biochemistry; Organic Compounds*

Page 2, Figure 1.3; *Some properties of life*

Page 4 – 5, Figure 1.4; *Exploring levels of biological organization*

Pages 2 – 9, Section 1.1; *The themes of this book make connections across different areas of biology.*

Page 14 – 16 (top); *Charles Darwin and the theory of natural selection.*

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Page 32 (left column); *The Elements of Life*

Concept 2.3, pages 38 – 41 (through *Weak Chemical Bonds*);

*The formation and function of molecules depend on chemical bonding between atoms.*

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#### Chapter 3, *Water and Life*

- Overview & 3.1, page 46 – 47; *Polar covalent bonds in water molecules result in hydrogen bonding.*
  - 3.2, page 47 – 56; *Four emergent properties of water contribute to Earth's suitability for life.*
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#### Chapter 4, *Carbon and the Molecular Diversity of Life*

- Overview & 4.1, page 58 – 59; *Organic chemistry is the study of carbon compounds.*
  - 4.2, p. 60 – 63; *Carbon atoms can form diverse molecules by bonding to four other atoms.*
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#### Chapter 5, *The Structure and Function of Large Biological Molecules*

- Overview & 5.1, p. 68 – 69; *Macromolecules are polymers, built from monomers.*
- 5.2, p. 69 – 74; *Carbohydrates serve as fuel and building material.*
- 5.3, p. 74 – 77; *Lipids are a diverse group of hydrophobic molecules.*
- 5.4, p. 77 – 85; *Proteins include a diversity of structures, resulting in a wide range of functions.*
- 5.5, p. 86 – **88**; *Nucleic acids store, transmit, and help express hereditary information.*  
(Nucleic acids will be studied in detail during our genetics unit.)

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