### Vocabulary Practice

<table>
<thead>
<tr>
<th>WORD</th>
<th>DEFINITION</th>
<th>MORE INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example <strong>plasmid</strong></td>
<td>closed loop of DNA separate from bacterial chromosome</td>
<td>can replicate on its own</td>
</tr>
<tr>
<td></td>
<td></td>
<td>used for making recombinant DNA</td>
</tr>
<tr>
<td><strong>1. clone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. genomics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. genetic screening</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. DNA microarray</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. proteomics</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A. Stepped-Out Vocabulary** Define each word. Then write two additional facts that are related to the word.
B. Situational Vocabulary  Circle the letter of the situation that most closely relates to each vocabulary word.
1. gene therapy: a) buying a bicycle; b) replacing a flat bicycle tire
2. gene sequencing: a) reading a book’s table of contents; b) summarizing a book in a report
3. gel electrophoresis: a) counting out 100 pennies; b) sorting coins by value
4. polymerase chain reaction: a) division; b) multiplication
5. clone: a) a photocopy; b) a fragrance for men
6. DNA fingerprint: a) a group yearbook picture; b) a driver’s license picture
7. primer: a) a referee’s whistle to start a game; b) the horn at the end of a game
8. bioinformatics: a) searching the index of your biology textbook; b) reading your biology textbook from beginning to end

C. Analogy Vocabulary Set  On one blank line next to each vocabulary word, write the letter and number of the definition that best matches. On the other blank line, write the letter and number of the analogy that best matches.

DEFINITIONS
D1. Testing DNA to determine a person’s risk of having a genetic disorder
D2. An enzyme that cuts DNA at a specific nucleotide sequence
D3. The study of genomes, within and across species
D4. A gene that is “turned off” to study its function
D5. Its goals are to map and sequence all human DNA and to identify all genes in the sequence
D6. Closed loop of DNA separate from bacterial DNA that can replicate on its own

WORD
1. Human Genome Project
2. plasmid
3. restriction enzyme
4. genetic screening
5. gene knockout
6. genomics

ANALOGIES
A1. A surgeon’s scalpel
A2. Bending a garden hose to stop the flow of water
A3. A computer virus
A4. Alphabetizing all of the movies ever made
A5. Learning and comparing two similar languages
A6. Taking a standardized test
**D. Vector Vocabulary** Define the words in the boxes. On the line across each arrow, write a phrase that describes how the words in the boxes are related to each other.

1. RESTRICTION ENZYME
2. ______________________
3. GEL ELECTROPHORESIS
4. ______________________
5. ______________________
6. RESTRICTION MAP
7. DNA FINGERPRINT
8. GENETIC ENGINEERING
9. ______________________
10. RECOMBINANT DNA
11. TRANSGENIC
12. GENE KNOCKOUT
E. Secret Message  Next to each definition, fill in the blanks with the vocabulary word that best fits each description. When complete, write the boxed letters in the blanks at the bottom of the page. Then unscramble them to reveal one of the newest fields in biology.

1. A short segment of DNA that acts as the starting point for a new strand of DNA
   
2. A tool that allows the study of many genes, and their interactions, at one time
   
3. The experimental treatment of diseases by replacing faulty or missing genes
   
4. A person’s molecular identity
   
5. A genetically identical copy of a gene or an organism
   
6. An organism that has genes from different organisms in its genome

Fill in the blanks with the boxed letters from above. Unscramble the letters to reveal one of the newest fields in biology: