What Causes Genetic Disorders?

Your resources:
- Textbook pages 197, 199-210
- BrainPop: Genetic Mutations
- “How do Mutations Cause Genetic Disorders?” article
- “What are Genetic Disorders” article/visual
- “Newborn Genetic Screening” article

BRAINPOP Questions:
1. Why do most changes to DNA have no effect at all?
   a. because they are too minor to have any effect
   b. because the changes are offset by RNA, which cannot change
   c. because the changes are quickly repaired
   d. because the changes only occur in a few cells

2. How are cancerous cells different from normal cells?
   a. cancerous cells are shaped differently than normal cells
   b. cancerous cells divide more frequently than normal cells
   c. cancerous cells contain chemicals not found in normal cells
   d. cancerous cells need more oxygen than normal cells

USING TEXTBOOK…start on page 199
1. What is the definition of a genetic disorder?

2. What can cause genetic disorders?

3. Go back to pg. 197. What do you think it means to be a carrier of a trait? You can use color blindness as an example.
4. What is a pedigree?

5. Look at figure 10 on text page 201 and figure 11 on text page 202.

   **Figure 10:** what would the symbol be for an albino male? How many are there in the pedigree?

   **Figure 11:** how many people in the pedigree actually have hemophilia, what gender are they? What can you assume about hemophilia knowing this?

6. What are three methods of developing organisms with desirable/good traits? Briefly describe each method’s definition, and give an example.

<table>
<thead>
<tr>
<th>Method</th>
<th>Brief Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 2 of 5
7. Which method listed in question 6 would be the best way of producing a plant or animal similar to one you already have? Explain your logic.

8. Describe two applications/uses for DNA technology.
   1. 
   2. 

Think about film; use ARTICLES at desk and ONLINE for questions 2 and 3
1. There are three levels of genetic disorders. List their name and a summary of what they are (“Genetics Disorders Library” article):

<table>
<thead>
<tr>
<th>Name of a Genetic Disorder Type</th>
<th>Summary of Disorder</th>
<th>2 Examples of this type of Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 2:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 3:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Go to Mrs. Hladun’s website > online assignments & activities > Genetics Disorder Library link. Click on one of the examples you listed in question 1. Review the information presented and list five things you learned about the disorder you chose:
3. Click on an example you listed in question 1 in a different level. Review the information presented and list five things you learned about the disorder you chose:

**DISORDER:**
1. 
2. 
3. 
4. 
5. 

4. What is a Genetic Counselor? What are three resources this type of health professionals use to diagnose possible disorders or support families (text & “Genetic Counselor” article)?

   **Definition:**
   
   **Three Resources:**
5. Why do hospitals screen newborns for genetic disorders? (“Newborn Genetic Screening” article)

6. Who pays for the screening of newborns for genetic disorders? (“Newborn Genetic Screening” article)

Extra time…if no one else is on or needs the computer, you can explore other topics of interest on the University of Utah Genetics page or you can try a virtual DNA Extraction Lab. Both are linked from my “Online Activities & Assignment” page on my website.