

## **DNA Technology Test Part 2 (Choose two of the following and Human Genome)**

### **Cloning 101**

Link: <http://www.teachersdomain.org/resource/biot09.sci.life.gen.cloning/>

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Answer the following questions as you navigate through the interactive.

1. During embryonic development all cells derived from the zygote contain the same DNA but yet differentiate into cells with different structures and functions to make the organs (e.g., muscle, blood, nerve cells). Explain how this occurs.
2. What did scientists learn about cell differentiation with the birth of Dolly the sheep?
3. What type of cell was used to fuse with a donor egg cell to produce Dolly?
4. How many different sheep were involved in creating Dolly? Describe the role of each.

### **Engineer a Crop**

Link: <http://www.teachersdomain.org/resource/tdc02.sci.life.gen.engineeracrop/>

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1. In your own words describe the basic steps in transgenic manipulation.
2. What past discoveries about genetics did scientists make that now allow them to add genes from one organism to another (or engineered genes into an organism)?

### **Guess What is Coming to Dinner?**

Link: <http://www.teachersdomain.org/resource/tdc02.sci.life.gen.guessdinner/>

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1. Which of these innovations seems most beneficial to you?
2. What might be a negative effect of this new genetically modified crop?
3. Which of these innovations seems most potentially hazardous to you?

### **Human Genome Project**

Link: <http://www.teachersdomain.org/resource/tdc02.sci.life.gen.hgp/>

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1. What were some of the strange and unexpected things that scientists discovered when they analyzed the human genome?
2. Why do scientists compare the DNA of bananas, worms, fruit flies, and humans? How can this information be helpful?
3. Scientists have likened the human genome to a parts list. Explain what they mean. Can you think of another analogy?