**Understanding the Steps of Polymerase Chain Reaction (PCR)**

*Note: This assessment should be based on accuracy and details at the teacher’s discretion. The following list suggests items that should be mentioned. No set rubric is provided.*

1. Steps of the PCR procedure:

PCR, or polymerase chain reaction, is where small quantities of DNA or broken pieces of DNA found in crime scene evidence can be copied with the aid of a DNA polymerase. Once DNA copies are produced, they can be analyzed by the various types of molecular biology testing. The steps are

* + Heat the DNA to about 94 degrees Celsius, which causes it to separate
  + Add the primers to the separated strands and allow the primers to combine with the strands by lowering the test tube to about 60 degrees Celsius
  + Add DNA polymerase and a mixture of free nucleotides to the separated strands then heat again to about 72 degrees Celsius allowing for the rebuilding of the

double-stranded DNA molecule

This cycling of heating and cooling allows for the DNA to be doubled and is repeated several times. In the Lewinsky/Clinton situation, a Restriction Fragment Length Polymorphism (RFLP) test was performed.

1. The article discusses the blue dress worn by Monica Lewinsky which reportedly had a semen stain on it from President Bill Clinton. It mentions the FBI’s acknowledgement of the receipt of the blue dress as evidence as well as the drawing and the receipt of a liquid blood sample from President Clinton. It finally gives a report of the examination.
2. See answer above
3. A seven-probe RFLP match was obtained between the president’s DNA and the semen stain.
4. The chances of the stain belonging to anyone else but President Bill Clinton was nearly one in eight trillion, an undeniable statistic.