Biology 12

DNA

Name: _____

Name: _____

Per: _____ Date: _____

DNA Replication Stop Motion Movie

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Marking Guide

1. Building the nucleotides (3)
    - Video begins with "The Candy DNA Representatives" (1)
        - All candies are in the correct places (1)
    - Nucleus with individual nucleotides floating around(1)
2. Building the parent DNA (4)
    - DNA shows complementary base pairing (1)
        - Continues to be correctly matched up throughout the video (1)
    - Labelled 3' and 5' ends (5' end should finish in a phosphate) (1)
    - Strands shown running antiparallel (1)
3. DNA replication (8)
    - DNA helicase used to unzip parent strand (1)
    - DNA polymerase used to bring in complementary nucleotides (1)
        - Leading strand, moving 5' to 3' direction on daughter strand to build strand in one piece (1)
            - Correctly labelled?
        - Lagging strand, moving in 5' to 3' direction on daughter strand, reverse direction to unzipping (1)
            - Correctly labelled?
            - Making 2-3 Okazaki fragments on lagging strand (1)
            - DNA ligase binds breaks in backbone (1)
    - Labelled parent and daughter strands (1)
    - BONUS: "proof-reader" enzyme corrects an error in one daughter strand (1)
    - Picture of final product to show double helix structure (1)
4. Finish the Movie (5)
    - low overall "jumpiness" of video (e.g. tried to take all pictures from exact same spot) (2)
    - kept extraneous objects out of video (e.g. hands, backpacks, papers) (2)
    - frames flow at appropriate speed (e.g. not too quick to see what is going on) (1)