

# 12.3 DNA Replication

## Copying the Code

1. Why are the strands of a DNA molecule said to be complementary?  
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2. What is the first step in eukaryotic DNA replication?  
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3. If the base sequence on a separated DNA strand is CGTAGG, what will the base sequence on its complementary strand be?  
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4. What enzyme joins individual nucleotides to produce the new strand of DNA?  
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5. What enzyme makes it less likely that DNA will be lost from telomeres during replication?  
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6. How does this enzyme work?  
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7. What is a replication fork?  
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8. Does DNA replication take place in the same direction along both strands of the DNA molecule that is being replicated? Explain your answer. (Hint: Look at the illustration of DNA replication in your textbook.)  
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## Replication in Living Cells

9. Complete the table to compare and contrast DNA replication in prokaryotes and eukaryotes.

	Prokaryotes	Eukaryotes
Location of DNA		
Amount of DNA		
Starting Point(s) for Replication		

**10.** Is DNA replication always a foolproof process? Explain your answer.

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### **Apply the Big idea**

**11.** Why is the pairing of bases during replication essential for the transmission of inherited traits from parent to offspring?

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