STUDENT SHEET 1

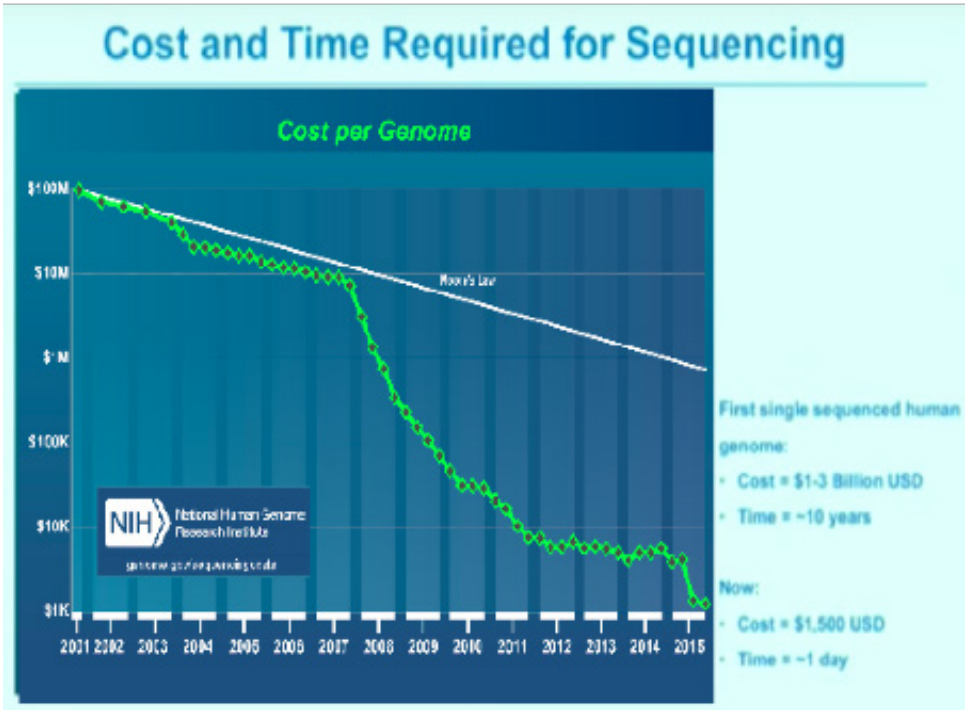
DNA Sequencing and Precision Medicine

Name: _____ Date: _____

What is precision medicine?

What do I think **before** the video?	What do I think **after** the video?

Figure Analysis Template 1



The specific question being asked in the experiment represented here is:

How do you think scientists got the data presented in this graph?

When you compare the cost of sequencing the human genomes over time, what do you learn?

What questions does this graph lead you to ask?

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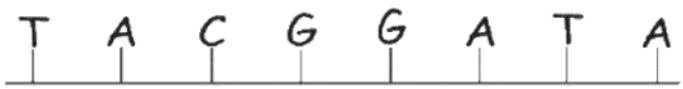
How does sequencing work?

Sequencing Activity 1

1. How does Sanger DNA Sequencing separate pieces of DNA?

2. Imagine you have the piece of DNA below.



Moving from left to right, what DNA pieces would be produced in a solution containing dideoxynucleotide "terminators" for:

A) _____ and _____

C) _____ and _____

T) _____ and _____ and _____

G) _____

3. Describe the relationship between distance traveled in a gel and size of a DNA piece.

4. Based on the pattern of bands on your gel from the activity sheet, what would the DNA sequence be?

_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

5. This activity (sequencing 12 bases) probably took you about 15-30 minutes. At that rate, it would take you 375 million to 750 million years to sequence the whole genome. How do you think scientists are able to analyze all of this BIG data?

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What can sequencing a genome teach us about disease?

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