Name _____ Period _____ Date _____

Graphing Hormone Levels

A hormone is a chemical substance secreted by one tissue and travels by way of body fluids to affect another tissue in your body. In essence, hormones are "chemical messengers." Many hormones, especially those affecting growth and behavior, are significant to both men and women. The onset of puberty begins when the pituitary gland starts producing large amounts of hormones, usually around age 12. The main hormone produced in boys is testosterone, and in girls it is estrogen.

Scenario:

You work for a family doctor that has asked you to graph the testosterone levels that have been recorded in medical charts for two male patients over the last few years. You will then need to compare their results to the norms, and determine if each male patient is progressing normally through puberty and into adulthood.

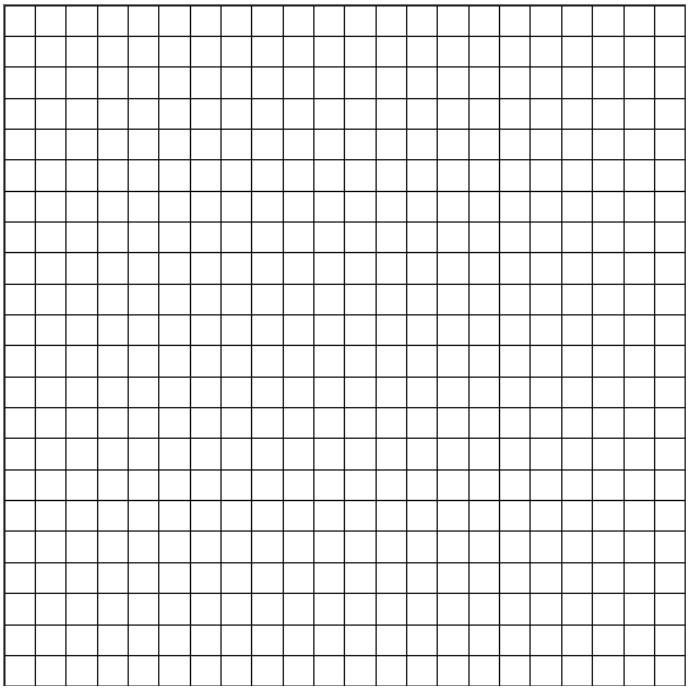
Procedure:

The information in ***Chart 1*** is the testosterone level for patients A and B. Patient A has asked for a bar graph, and Patient B has asked for a line graph. Graph each patient's testosterone level for each test date. Patient A and B were both born in 1990, and their current age is 21. The dates provided are the dates that the testosterone level was tested.

Chart 1		
Date of Testosterone Test	**Patient A**	**Patient B**
Jan 1995	24 ng/dL	8 ng/dL
Jan 1998	22 ng/dL	18 ng/dL
Jan 2001	40 ng/dL	24 ng/dL
Jan 2004	55 ng/dL	80 ng/dL
Jan 2007	285 ng/dL	125 ng/dL
Jan 2010	375 ng/dL	225 ng/dL

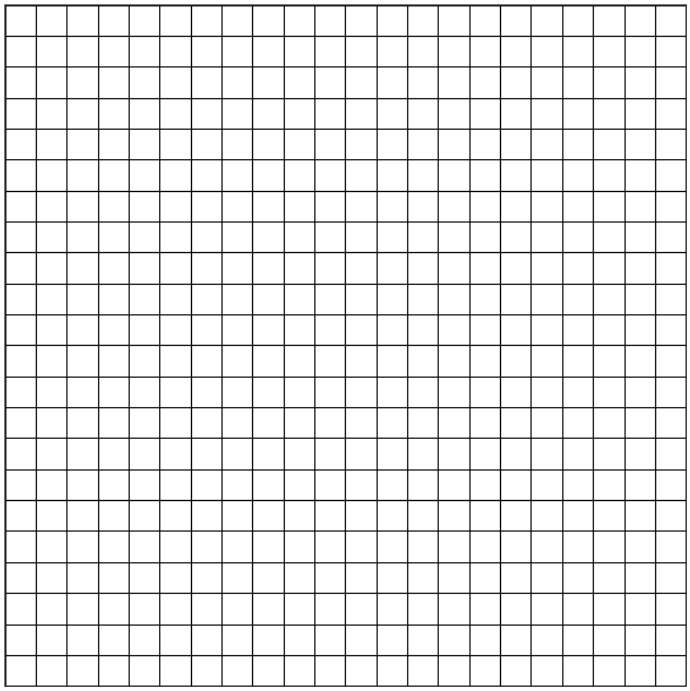
Average Testosterone Levels in Developing Males		
Stage of Puberty	***Average Age***	***Amount of Testosterone***
Pre-puberty	0 - 12	under 30 ng/dL
Early puberty	12 - 13	30-100 ng/dL
Mid-puberty	13 - 18	100-300 ng/dL
Adulthood	18 +	300 + ng/dL

Patient A: Testosterone Level



90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10

Patient B: Testosterone Level



Analysis - *on a separate sheet of paper complete the following*

1. Looking at the graph, did Patients A and B have normal testosterone levels as they developed? Explain.
2. Why are graphs an important way to present information?

Kaplowitz, P.B. 2010. Precocious Puberty. Medscape Reference, Drugs, Diseases, and Procedures, article 924002. www.webmd.com