Module 1 - Exploration
Problem-Solving Activity: Stellar Distances

Name _____
Group Name _____
Period _____

Now that you've made a graph relating distance in light years (LY) to distance in kilometers, you should be able to use this information to solve some problem related to interstellar travel.

Problem 1: If you want to walk from John F. Kennedy High School to the Washington Monument, how long will it take you? Make a list of the things that you have to know in order to answer this question, and make sure that everyone in your group is able to explain how to find the answer.

a) List the things you need to know in order to answer the question:

b) List the resources that you used to find the things that you needed to know:

c) What is the approximate distance to between John F. Kennedy High School and the Washington monument in millimeters?

d) Explain in words or with mathematics how your group found the answer to Problem 1:

e) This is how long we think it will take to walk from John F. Kennedy High School to the Washington Monument:

Problem 2: If you want to travel from Earth to the nearest star, how long will it take you? For this question, let's assume that your space ship can travel as fast as the *Voyager I* space probe.

a) List the things you need to know in order to answer the question:

b) List the resources that you used to find the things that you needed to know:

c) What is the approximate distance to the nearest star in km?

d) Explain in words or with mathematics how your group found the answer to Problem 2:

e) How was this problem similar to Problem 1?

f) How was this problem different from Problem 1?

g) This is how long we think it will take to travel to the nearest star:

h) Why do you suppose that astronomers use the Light Year (LY) instead of kilometers or miles to describe interstellar distances?

Bonus Question: How fast do you think space ships would have to travel in order to make interstellar commerce and recreational travel feasible?