Investigating Stars Name:_____Block:_____

How Big Are the Stars? **E1:A2**

In this activity, you will construct a scale model of your star and compare the relative diameters of different types of stars.

1. Use a tennis ball to represent a star the size of our sun. Using the data below, find the diameter of Earth at this scale.
   Diameter of Sun = 1.4×10^6 km

   Diameter of a Tennis Ball (scale model of sun) = 7.2 cm

   Diameter of Earth = 12, 756 km

   Diameter of Earth (scale model of Earth) = ?
2. Use ratio and proportion and the scale factor you calculated in Step 1 to find the scale diameter of the star on your postcard from Activity 1.
3. Draw your star to scale on a piece of paper.

   Use colored pencils to finish your model.

   If your star is too large to fit on a piece of paper, sketch its approximate size on a concrete surface using chalk, or outline it on a playing field with your teacher's assistance.
4. Make a scale drawing of Earth on a piece of 8.5" x 11" paper, and place it next to your star model.
5. When your classmates have finished with their models, look at all the model stars and compare their relative sizes.

Pause and Reflect

6. In general, how large are dwarf stars in comparison to our sun? Put your answer in terms of a fraction (e.g., 1/2; 1/3).

7. In general, how large are giant stars in comparison to our sun? Put your answer in terms of a multiple of the sun's diameter (e.g., 2X; 3X; 10X).

8. What was the smallest type of star? Which was the largest?

9. Are any of the stars similar in size to Earth? To the moon?