

Star Light, Star Bright: Exploring How Stars are Classified

LP _____ Date _____



Objectives:

- Students will work in small groups to organize stars into different categories based on observations of properties for a collection of stars.

Materials:

- One set of colored and laminated stars per 4 students: [Star Set \(pdf\)](#)

Procedure:

1. Ensure that students understand what type of information is known about each star by examining the sun as a class.
2. Make sure children notice each star has a name, a color, a temperature and a luminosity value.
3. Make sure they understand the luminosity is compared to the sun's luminosity such that a value greater than 1 means it is that many times the sun's luminosity. A value less than one means it is that fraction of the sun's value.
4. Allow time for the groups to become familiar with the stars and encourage the groups to write down what they are noticing.
5. Encourage the children to spread the stars out on their tables to examine them more easily
6. Each group should report some of their findings as the teacher starts to record these on the board.
7. When all groups have reported on their findings ask the class to summarize conclusions from these observations.

Data: Table 1: Star Arrangement #1

We arranged our stars according to:	
List at least 4 observations about this arrangement:	
1.	
2.	
3.	
4.	
5.	
6.	



Table 2: Star Arrangement #2

We arranged our stars according to:	
List at least 4 observations about this arrangement:	
1.	
2.	
3.	
4.	
5.	
6.	

Table 3: Star Arrangement #3

We arranged our stars according to:	
List at least 4 observations about this arrangement:	
1.	
2.	
3.	
4.	
5.	
6.	

Table 4: Star Arrangement #4

We arranged our stars according to:	
List at least 4 observations about this arrangement:	
1.	
2.	
3.	
4.	
5.	
6.	



Table 5: Star Arrangement #5

We arranged our stars according to:	
List at least 4 observations about this arrangement:	
1.	
2.	
3.	
4.	
5.	
6.	

Analysis:

1. What can we say about medium sized stars? _____

2. What can we say about large stars? _____

3. Name a star that is cool and dim: _____ temp _____ lum _____.
4. Name a start that is cool and bright: _____ temp _____ lum _____.
5. Name a start that is hot and dim: _____ temp _____ lum _____.
6. Name a start that is hot and bright: _____ temp _____ lum _____.
7. What do you think color tells us about temperature? _____

8. What do you think temperature tells us about luminosity? _____

9. What do you think size tells us about luminosity? _____

10. Tomorrow we will plot 100 stars on a large wall graph and learn how to use a H-Z diagram for star classification.

Conclusion: 2-3 sentences on what you learned by doing this activity.

