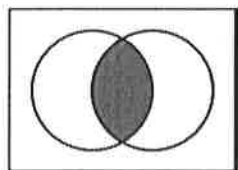


### VENN DIAGRAMS—MATHEMATICAL CULTURALLY EMBEDDED LESSON

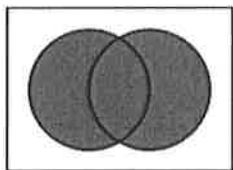
**Descriptor:** A Venn diagram (or set diagram) is a diagram that shows all possible logical relations between a finite collection of sets. Venn diagrams are used to teach elementary set theory, as well as illustrate simple set relationships used in mathematical disciplines such as probability, logic, and statistics.

Sample illustrations of Venn Diagram principles are as follows:



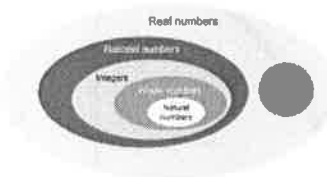
$$A \cap B$$

*Intersection of two sets*



$$A \cup B$$

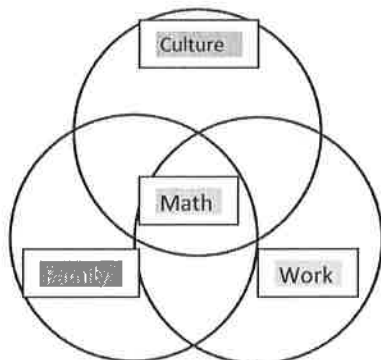
*Union of two sets*



*Venn Diagram of the hierarchy of real numbers.*

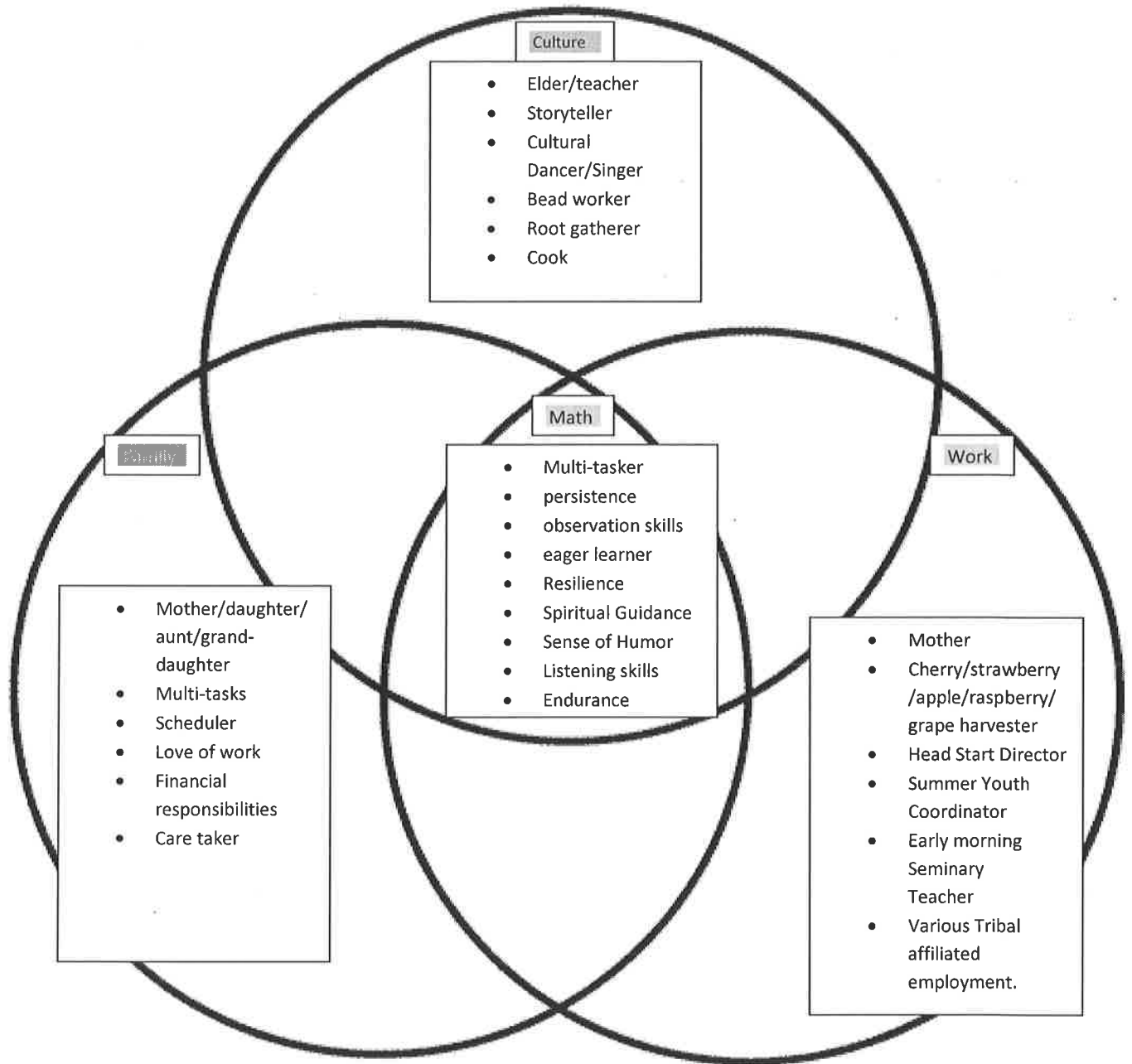
Initially, students do not have connection with mathematical principles and due to prior experience separate themselves from math. This activity help students re-identity attributes they possess as strengths that will contribute to mathematical learning as well as the principles of the Venn Diagram.

**Assignment:** As an introductory to Venn Diagrams, students label circles as Culture, Family, and Work\*. With the intersecting circle labeled Math. Students will self-identify attributes they have acquired in each of the three areas. After thorough examination, students will synthesize specific attributes that all three categories share that contribute to mathematical process



\*The labels can be changed to fit the demographics and needs of each class

This is an example of my Venn Diagram.



Category	1	2	3	4
Sentence structure, punctuation, grammar	Sentence structure is difficult to follow. More than 10 run on sentences. Poor use of punctuation and grammar (more than 10 punctuation errors). More than 10 spelling errors	Sentence structure is difficult to follow. Fewer than 10 run on sentences. Poor use of proper punctuation (fewer than 10 errors). Fewer than 10 spelling errors.	Sentence structure is easy to follow. Five or fewer run on sentences. Good use of punctuation and grammar (Five or fewer mistakes). Fewer than five spelling errors.	Sentence structure is easy to follow. One or fewer run on sentences. Good use of punctuation and grammar (two or fewer mistakes). Fewer than 2 spelling errors.
Introduction	Two or fewer sentences for introduction. Very little information about histones or bioinformatics tools. No evidence of background information. No stated purpose for the lab.	At least three sentences for introduction. One sentence for histones and one sentence for bioinformatics tools. No stated purpose of the lab.	At least one paragraph (two sentences for histones and one paragraph for the bioinformatics tools. A stated purpose for the lab but does not relate the tools to the purpose.	Well thought out introduction. At least two paragraphs: one for histones and one for bioinformatics tools. Evidence of background research on histones and bioinformatics tools. Stated purpose relates the tools to the purpose.
Materials and methods	Materials and methods are not written in paragraph form. At least two materials or methods are not stated.	Materials and methods are not written in paragraph format. At least one material or method is missing.	Materials and methods are not written in paragraph format. All materials and methods are present.	Materials and methods are written succinctly in paragraph form. All materials and methods are mentioned.
Results	Results are not stated in paragraph form. Figures do not have figure legends. Figures are not organized in the manner of the protocol. Figures are difficult to read or interpret. At least three pieces of data are missing. No tables representing the required information.	Results are not stated in paragraph form. At least two figures do not have figure legends. At least three figures are out of order from the protocol. Figures are difficult to read or interpret. At least two pieces of data are missing. No tables representing the required information.	Results are stated in paragraph form. Two or fewer figures do not have figure legends. Two or fewer figures are not organized in the manner of the protocol. Figures are easy to read and interpret. All pieces of data are present. At least one table is missing.	Results are stated in paragraph form. All figures have figure legends. Figures are all organized in the manner of the protocol. Figures are easy to read or interpret. All tables representing the required information are present.

Conclusion	No interpretation of the data. Two sentences or fewer.	Very little interpretation of the data. Definitive conclusions are made for only three or fewer pieces of data. Conclusions do not relate back to the stated purpose.	Very little interpretation of the data. Definitive conclusions are made for only five or fewer pieces of data. Conclusions relate back to the stated purpose.	Data interpretation is evident. Definitive conclusions are made for all pieces of data. Data interpretation relates back to the stated purpose.
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Speakers name \_\_\_\_\_

Total \_\_\_\_\_

Total \_\_\_\_\_

Total \_\_\_\_\_

Total \_\_\_\_\_

Total score: \_\_\_\_\_