TITLE

Venn Diagrams & UK Basketball

Cube Fellow: Amy Heilman **Teacher Mentor: Mark Hewson**

Goal: To learn how to apply venn diagrams to real-world situations.

Grade and Course: 8th grade - Algebra

KY Standards:

1. MA-08-4.1.1 Students will analyze and make inferences from data displays (drawings, table/charts, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs, stem-and-leaf plots, scatter plots, histograms, box-and-whisker plots.
2. MA -08-4.1.4 Students will construct data displays (Venn diagrams, tables, line graphs, stem-and-leaf plots, circle graphs, scatter plots); explain why the type of display is appropriate for the data and explain how misleading representations affect interpretations and conclusions about data.

Objectives:

1. Students will be able to collect data and display it in a Venn Diagram.
2. Students will be able to make inferences and conclusions from the data in a Venn diagram.
3. Students will be able to locate the correct region on a venn diagram representing a specific piece of data.

Resources/materials needed:

1. Handouts
2. calculators

Description of Plan

1. Start class with the UK Basketball activity. Draw a large Venn Diagram on the board and record the class data. Now, figure out who could be a suspect in the crime.
2. Next, start a discussion about sets and elements, focusing heavily on the importance of definitions. Go over the definition of set and elements. Do several class examples…using student input.
3. Next, have students work in pairs to find the correct shaded region for each question on the handout.
4. Go over the problems in class.
5. In closing, discuss all findings and hand out venn diagram questions for homework.

Lesson Source:

Instructional Mode: Large group activity, teacher lead examples, partner work

Date Given: 11/9/06 **Estimated Time**: 45-50minutes

Date Submitted to Algebra^3: 10/9/07

11/9/04

VENN DIAGRAM LESSON

1. UK activity
    a. Make sure everyone's name is written down only one time!
    b. Draw venn diagram on the board and fill in those names who have brown & straight hair
    c. We will come back to our diagram in a few moments….

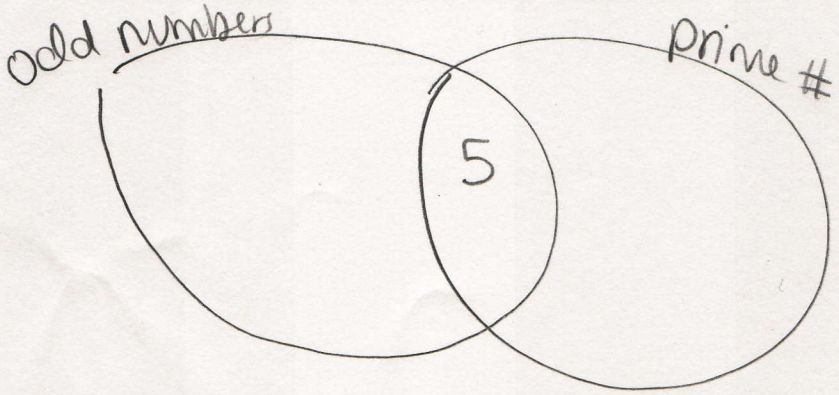
But first

2. Discussion about sets & elements
    a. Can anyone tell me what an integer is? (have a student explain it to the class)
        i. Give example
    b. Can anyone tell me what whole numbers are? (have a student explain it to the class)
        i. Give example
    c. So _____ is an *element* of the set of integers and it _____(is or is not) an *element* of the set of whole numbers.
    d. Does anyone know what I mean by this?
        i. *Set is like a group of numbers that are the same type of thing (something in common)*
        ii. *Element is one of the numbers in a set*
    e. Can anyone think of an example of this?
        i. IS 5 an element of the set of odd numbers?

    F. Can someone name an element of the set of prime numbers?
        I. 13 is an element of the prime numbers

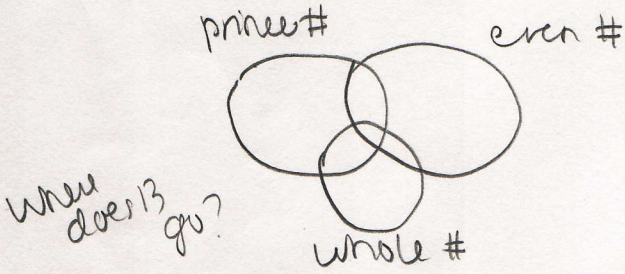
    G. you learn very fast….
        Element of….. even numbers, round fruit, members of the class (relating back to UK activity)

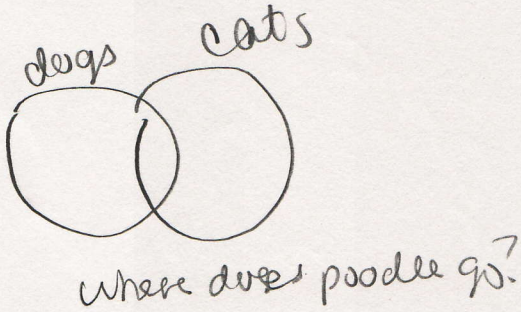
3. Today we will be talking more about sets and what it means to be an element of a set.
    a. What if I have two sets of numbers, is it possible for the sets to have elements in common? Can an element be in both sets?
        i. Yes….5 is an odd and prime number
    b. Great…so elements can be part of two sets at once. We can draw a picture to help me visualize two sets that share elements.



c. I put the 5 where the two circles overlap. Why do you think I did that?
    i. So it could be in both circles at the same time
d. What should we call these circles?
    i. Sets
e. can anyone think of another number that I could put in this diagram? What about an odd number that isn't prime?
    i. 9 – odd, but not prime b/c divisble by 3
f. GREAT… what we have here is called a VENN DIAGRAM.
    i. Sometimes they have two sets(circles) like ours, and sometimes they have more.
    ii. Let's try and create a venn diagram w/ three circles.

Now – venn diagram worksheet
Goal: shade in the section of the venn diagram the element belongs in.
Examples:



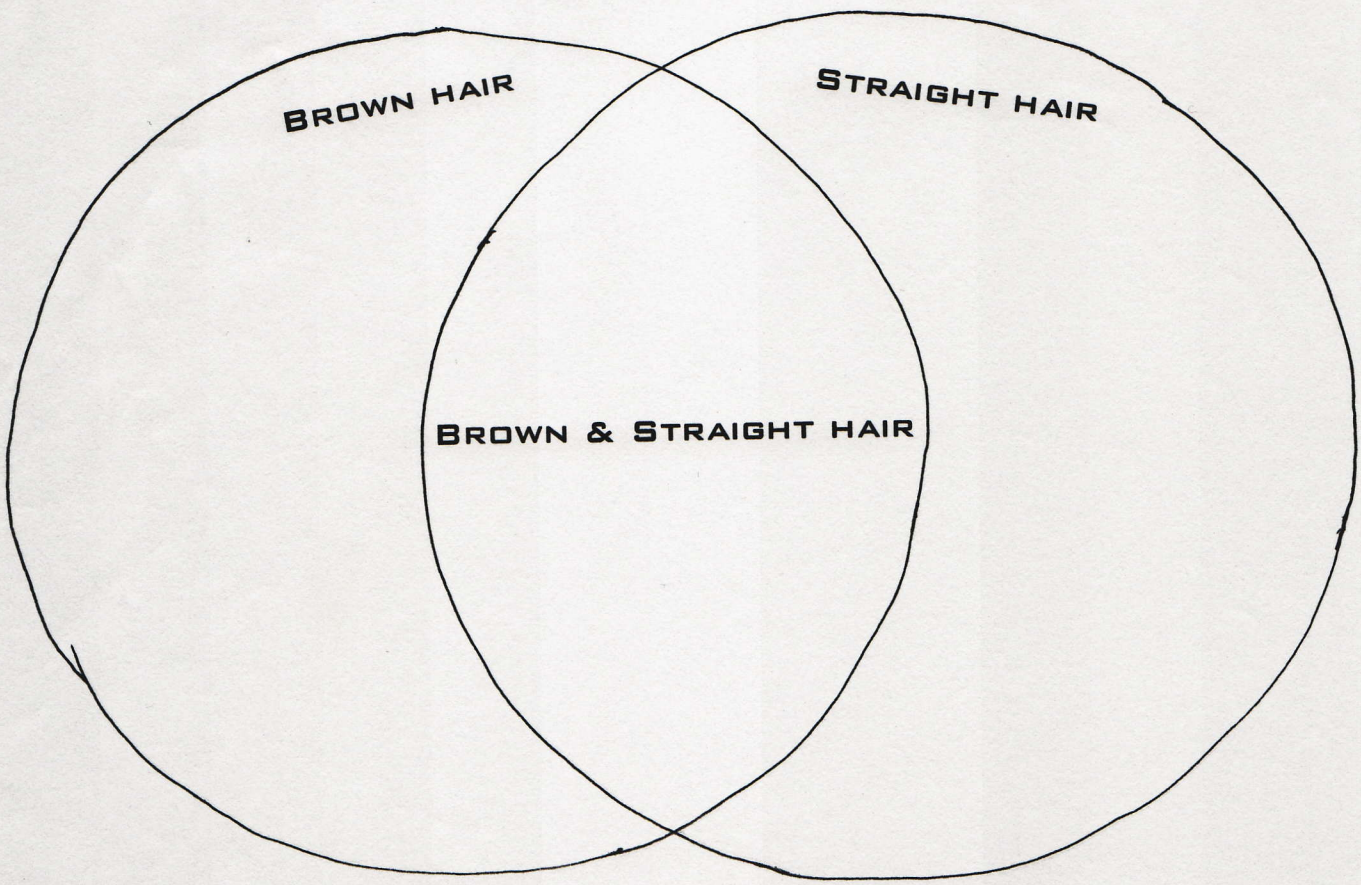


Closure: Discuss all findings
Go over vocab of set, element, and venn diagram
Set = a set is a collection of things, without regard to their order
Element = a member or an object in a set
Venn diagram = a diagram where sets are represented as simple geometric figures, with overlapping sets represented by intersections and unions of the figures.

Help the UK basketball team recover their NCAA championship trophy from 1998.

Last week PCMS took a field trip to the UK basketball headquarters. During this visit, the 1998 NCAA championship trophy disappeared. The police need our help in narrowing down the suspect list. They know that the suspect had straight brown hair because they found a few pieces in the broken trophy case.

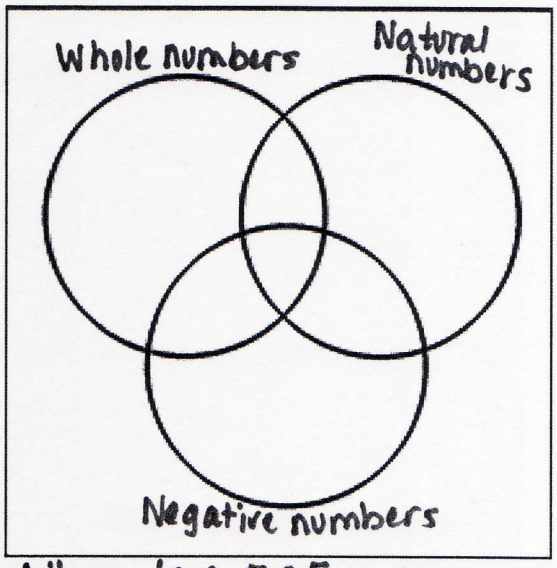
- We need to interview members of the class to find out who might be a suspect.
- Interview every member of the class and record their names in the appropriate region in the diagram below.
- If they do not have either brown or straight hair, their name belongs outside the diagram, but inside the square.
- Everyone's name *must* appear in the diagram, and only once. Good luck!!



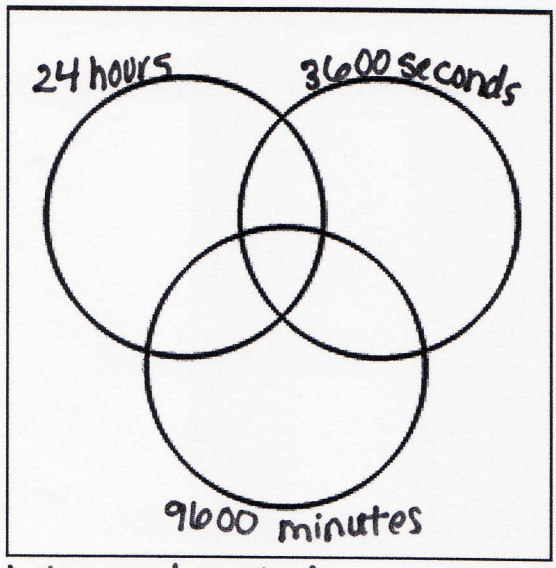
Mr. Hewson's 1st period class

NAME _____

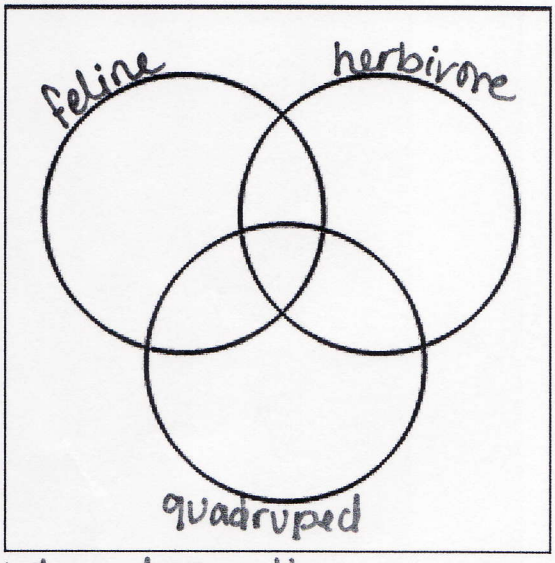
Shade in correct region.



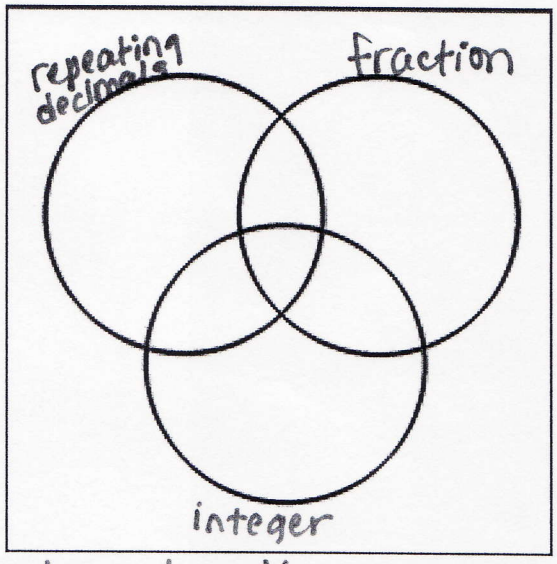
Where does 5.25 go?



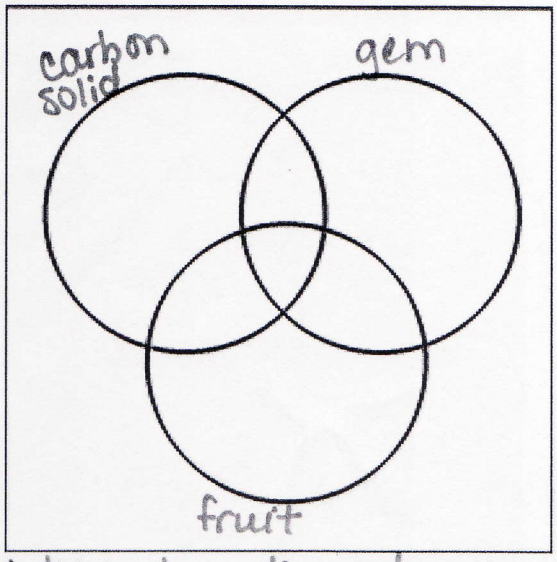
Where does 1 day go?



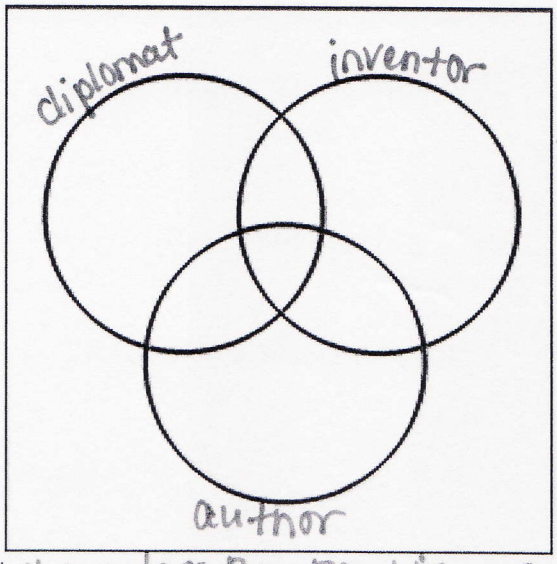
Where does a tiger go?



Where does 1/7 go?



Where does diamond go?



Where does Ben Franklin go?

Venn Diagram Questions Name_____

Date _____

Please answer the following questions about sets and Venn diagrams.

1. What is the difference between a Venn diagram with 2 circles and one with 3 circles?

2. How could you use a Venn diagram to describe/classify the people in your class?

3. In your own words, describe a set. What is an element?

4. Did you have any trouble with the Venn diagrams? If so, describe the problem and explain what information allowed you to be able to complete the problem. If not, then write a few words describing what information is necessary to do such problems accurately.