GENETICS/HEREDITY LISTENING GUIDE--KEY

1. What is the name of the sex cell in the woman?
   OVUM OR EGG

2. What is the name of the sex cell in the male?
   SPERM

3. What is contained in both of these sex cells?
   CHROMOSOMES (GENES)

4. Describe and define chromosomes.
   CHROMOSOMES ARE CONTAINED IN THE NUCLEUS OF ALL BODY CELLS. THEY ARE THE CHEMICAL COMPOUNDS IN ALL LIVING THINGS.

5. How many chromosomes are there in each cell of the human body?
   46 OR 23 PAIR

6. Explain how the union of a female ovum and male sperm creates a human being that has similarities and differences from other humans.
   EACH OVUM AND SPERM PROVIDES ONE REPRODUCTIVE CELL. THEY FORM A NEW CELL. THERE ARE MILLIONS OF WAYS THE CELLS CAN FORM. THAT IS WHAT MAKES US OF EACH UNIQUE. HOWEVER, THERE ARE SOME BASIC CHROMOSOMES THAT MAKE US HUMAN BEINGS, AND SIMILAR.

7. Define genes:
   THERE ARE HUNDREDS OF GENES IN EACH CHROMOSOME. THEY MAKE THE TRAITS IN HUMAN BEGINS. THEY ARE BEAD-LIKE STRUCTURES.

8. How many genes are there?
   HUNDREDS

9. Define the following:
   a. sex chromosomes:
      XX=FEMALE, XY=MALE, THE CHROMOSOMES DETERMINE THE SEX OF A PERSON.

   b. meiosis:
      A PROCESS THROUGH WHICH THE SEX CELLS DIVIDE TO PRODUCE TWO NEW CELLS THAT CONTAIN 23 UNPAIRED CHROMOSOMES EACH.

c. dominant genes:
THE STRONGER GENE THAT WILL PRODUCE THE CHARACTERISTIC IN THE INDIVIDUAL.

d. recessive genes:
WEAKER GENES THAT DO NOT PRODUCE THE CHARACTERISTIC IN THE INDIVIDUAL BUT ARE CARRIED BY THE PERSON.

e. sex-linked or X-linked defects:
WHEN AN X GENE FROM THE MOTHER IS FAULTY, THERE IS A 50/50 CHANCE OF THE CHILD INHERITING THE DISORDER.

f. syndrome:
A SET OF CHARACTERISTICS THAT IDENTIFY A CERTAIN CONDITION OR DISEASE.

g. congenital malformation:
A CONDITION THAT IS PRESENT AT BIRTH.

h. multifactorial defects:
INTERACTION OF MANY GENES WITH OTHER GENES OR WITH ENVIRONMENTAL FACTORS.

i. chromosomal error:
THE FERTILIZED EGG CELL THAT CONTAINS CHROMOSOMES IN AN ABNORMAL NUMBER, STRUCTURE, OR ARRANGEMENT.

j. carrier:
A PERSON THAT CARRIES AND PASSES ON A DISEASE OR CONDITION WITHOUT HAVING IT HIMSELF/HERSELF.

k. amniocentesis:
A TEST PERFORMED DURING PREGNANCY. A SMALL AMOUNT OF AMNIOTIC FLUID, WHICH SURROUNDS THE DEVELOPING FETUS, IS DRAWN AND EXAMINED. LOCAL ANESTHETIC IS ADMINISTERED. THE PURPOSE IS TO DETECT CHROMOSOMAL ABNORMALITIES.

10. What determines which characteristics a child will inherit from the parent?
GENETIC INFORMATION IS TRANSMITTED BY BOTH PARENTS AT THE MOMENT OF CONCEPTION.

11. Why is it probable that a brown-eyed mother and a blue-eyed father will have a brown-eyed child?
BROWN IS A DOMINANT TRAIT.

12. Which parent determines the sex of the child? Explain how this happens.
THE FATHER DETERMINES THE SEX OF THE CHILD BECAUSE SOME SPERM ARE X AND SOME ARE Y. THE SEX DEPENDS ON WHICH GENE IS PRESENT AT CONCEPTION.

13. How are fraternal twins, triplets and other multiple births produced?
ONE OR MORE FERTILIZED EGGS THAT ARE SPLIT=MONOZYGOTIC. SINGLE CELLS THAT ARE FERTILIZED = DIZYGOTIC.

14. How are identical twins produced?
SPLITTING OF THE SAME CELL AFTER CONCEPTION--USUALLY A HEREDITARY TRAIT.