# HEREDITY WORKSHEET--KEY

OBJECTIVES: 1. To explain how traits are inherited 2. To identify inheritance-linked differences 3. To understand some genetic-linked diseases.

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

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

3. The genetic coding in both males and females is made up of chemical compounds.
   a. What are these called?
   CHROMOSOMES

   b. How many are there in each body cell?
   23 PAIR/46

   c. What do they look like?
   ROD-SHAPED CHEMICALS, ORGANIZED STRINGS OF GENES

   d. What is their purpose?
   TRANSMIT CHARACTERISTICS FROM PARENTS

4. What are genes? How many are there in a human cell? How many are there in a chromosome?
CARRY INDIVIDUAL/SPECIFIC CHARACTERISTICS AND MAKE UP CHROMOSOMES.
1 MILLION IN CELL/20,000 IN CHROMOSOME

5. Explain how the union of an ovum and sperm creates a human being with unique traits.
EACH GERM CELL DIVIDES AND PAIRS UP DIFFERENTLY, WITH EACH NEW UNION CREATING A NEW BEING WITH COMPLETELY DIFFERENT INFORMATION.

10. Discuss the terms listed below in relation to their function(s)/purpose, composition/structure, and/or number of each.

   a. Amniocentesis
   A TEST DONE IN PREGNANCY TO CHECK FOR GENETIC ABNORMALITIES. A NEEDLE IS INSERTED INTO THE ABDOMEN TO REMOVE AMNIOTIC FLUID.

   b. Body cell
   MAKES UP BONES, NERVES, MUSCLES, AND ORGANS; CONTAINS 46 CHROMOSOMES

   c. Carrier
   PERSON CARRIES THE TRAIT BUT DOES NOT HAVE THE CHARACTERISTIC EXPRESSED IN HIM/HER.

   d. Chorion
   MEMBRANE THAT SURROUNDS THE BABY IN PREGNANCY

   e. Chromosomal error
   TOO MANY OR TOO FEW CHROMOSOMES MATCH UP AND CAUSE PROBLEMS: PART MISSING, PAIR BREAK OFF

   f. Conception
   UNION OF 1 OVUM AND 1 SPERM TO CREATE A CHILD

   g. Congenital malformation
   DEFECTS PASSED FROM PARENTS THROUGH HEREDITY AND ARE PRESENT AT BIRTH

   h. Dizygotic pregnancy/fraternal twins
   DEVELOP FROM 2 OVA WITH DIFFERENT GENETIC INFORMATION

   i. Dominant gene
   STRONG GENE THAT IS EXPRESSED (SHOWS UP) IN INDIVIDUAL

   j. Dominant inheritance
   AN INFECTED CHILD MUST HAVE ONE PARENT WITH PROBLEM (50-50 CHANCE).

OPTION 4, page 4--GENETICS, HEREDITY, AND BIRTH DEFECTS KEY

6. Sometimes two or more babies develop in the same pregnancy. What is the likelihood of multiple pregnancies in the United States in the following areas:

a. twin blacks--7 IN 73
b. twin whites--1 IN 93
c. triplets--1 IN 10,000
d. quadruplets--1 IN 620,000

7. Explain why a brown-eyed mother and a blue-eyed father will probably have a brown-eyed child.
BECAUSE BROWN IS DOMINANT

8. Which parents determines the sex of the child? Explain how this happens.
FATHER CARRIES BOTH X AND Y CHROMOSOME

9. Certain women are more likely to have dizygotic children than others. List the four factors that increase these chances.
1-INCREASED HORMONES (NATURALLY)
2-HISTORY IN FAMILY
3-AGE 32-36
4-USE OF ARTIFICIAL HORMONE

k. Germ/sex cell
SPERM OR OVA; BASIS FOR GROWTH TO CREATE NEW BEING; 23 CHROMOSOMES.

l. Monozygotic pregnancy/identical twins
DEVELOP FROM 1 OVUM AND CARRY SAME GENETIC BACKGROUND.

m. Multifactoral defects
SEVERAL FACTORS INVOLVED IN CREATING THE PROBLEM.

n. Nucleus
CENTER OF CELL THAT CARRIES DNA--GENETIC BLUEPRINT INFORMATION.

o. Recessive gene
WEAKER GENE THAT REMAINS IN BACKGROUND TO PASS ON TO CHILD.

p. Recessive inheritance
IF BOTH PARENTS CARRY RECESSIVE, THE CHILD COULD INHERIT 1 FROM EACH AND HAVE CHARACTERISTIC EXPRESSED.

q. Sex-linked/X-linked defects
X GENE TRANSMITTED TO CHILD--MOST COMMON FROM MOTHER--IF SON GETS IT, HE HAS PROBLEMS; IF DAUGHTER GETS IT, SHE CARRIES IT.

r. Siamese twins
MONOZYGOTIC PREGNANCY WHERE SEPARATION WAS NOT COMPLETE. CAN SEPARATE IF MAJOR VITAL ORGANS ARE NOT SHARED.

s. Syndrome
A GROUP OF SIGNS OR SYMPTOMS OCCUR TOGETHER AND CHARACTERIZE A PARTICULAR PROBLEM.