TEACHER: JORDAN SCI. 7

Date: 3-12-18 MONDAY

Hour: 1

Homework:

- TEST WEDNESDAY
- STUDY VOCABULARY & NOTES

Today In Class:

✓ VIDEO: Sex Linked Traits
2 HANDOUTS (ATTACHED)

✓ Practice & Notes on HANDOUT

JORDAN SCH
3-12-18

Name: _____ Row: HANDOUT

Date: _____ Period: _____

NOT ON X or Y chromosome

Sex-Linked Traits Worksheet

1) Albinism is a recessive autosomal genetic disorder that causes the complete or partial absence of pigments in the skin, hair and eyes. Fill in the Punnett square and determine the expected genotypic ratios from crossing homozygous recessive and heterozygous dominant parents.

	a	a
A	Aa	Aa
a	aa	aa

Genotypes: 50% Aa 50% aa Genotypic Ratio: 1:1

Phenotypes: 50% albinism 50% w/o

% of kids with disorder: 50 % of carrier kids: 50

2) Red-Green color blindness is a recessive sex-linked (X chromosome) genetic disorder where the middle (green) or long (red-yellow) wavelength cones in the eyes have a partial or complete loss of function. Fill in the Punnett square and determine the expected genotypes and phenotypes from crossing a normal male and a female who is a carrier for colorblindness.

	X^H	X^h
X^H	X^HX^H	X^HX^h
Y	X^hY	X^hY

Genotypes: X^HX^H X^HX^h X^HY X^hY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 25% Circle their gender(s) male / female

3) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male with color blindness and a normal female.

	X^H	X^H
X^h	X^HX^h	X^HX^h
Y	X^HY	X^HY

Genotypes: X^HX^h X^HY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 0 Circle their gender(s) male / female

4) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male who is color blind and a female who is a carrier for color blindness.

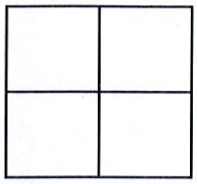
	X^H	X^h
X^h	X^HX^h	X^hX^h
Y	X^HY	X^hY

Genotypes: X^HX^h X^hX^h X^HY X^hY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 50 Circle their gender(s) male / female

5) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a normal male and a female who is color blind.



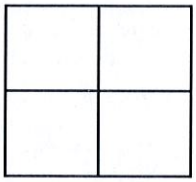
Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness,

normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s) male / female

6) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a color blind male and a color blind female.



Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness,

normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s) male / female

7) Explain how sex-linked traits are different than autosomal traits.

Autosomal traits are not carried on the X Y chromosome.

8) Explain why males have more sex-linked disorders than females. _____

They have the Y chromosome that is not covered as ~~Females~~ have two X chromosomes.
Females

3-12-18
HANDOUT

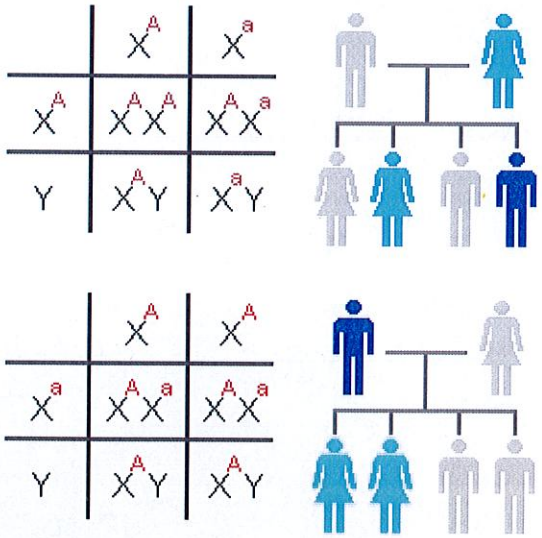
Sex-linked Traits Notes: Humans have 23 chromosome pairs or 46 chromosomes
Genes on the X & Y Chromosome are often called sex-linked genes because their alleles are passed from parent to child on the sex chromosome.
Traits controlled by sex-linked genes are called sex linked traits.

Sex linked traits also have dominant and recessive alleles

Females have two X chromosomes
Males have one X chromosome and one Y chromosome
In females a dominant allele on one X chromosome will mask a recessive allele on the other chromosome. This isn't the case for males who only have one X chromosome.
So … any allele on the X chromosome in males will result in the trait.

Because males have only one X chromosome, males are more likely than females to have a sex-linked trait that is controlled by a recessive allele.

There are about 1,098 human X-linked genes. Many are responsible for abnormal conditions such as hemophilia, Duchenne muscular dystrophy, fragile-X syndrome, some high blood pressure, congenital night blindness, G6PD deficiency, and the most common human genetic disorder, red-green color blindness. X-linked genes are also responsible for a common form of baldness referred to as "male pattern baldness".



If a father has an X linked trait he will pass it on to all of his daughters, but none of his sons
Sons receive X linked traits from their mothers

Autosome: a chromosome that is not a sex chromosome (the other 22 chromosomes)

Karyotype: picture of chromosomes in pairs

Pedigree: a chart that helps trace traits in families, allows you to make predictions on future generations.