Topic: Sex Linked Traits Worksheet

Summary: Students will learn about genetic disorders by completing Punnett squares for autosomal and sex-linked traits.

Goals & Objectives: Students will be able to determine the probability of different genetic disorders. Students will be able to recognize the differences between inheritance patterns.

Standards: CA Biology *2g. Students know* how to predict the possible combinations of alleles in a zygote from the genetic makeup of the parents.

Time Length: 20 minutes

Prerequisite Knowledge: Students know how to complete a Punnett square for dominant and recessive traits. Students know vocabulary words like homozygous, heterozygous, dominant, recessive, genotype and phenotype. Students know how to calculate ratios.

Materials:

- Textbook for reference
- Handouts and pencils

Procedures:
1. Students work on the handout by themselves.

Accommodations: Students with an IEP can take the handout home if they need extra time, and/or do the even number questions.

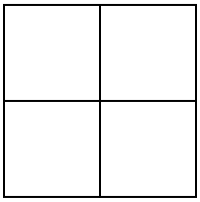
Evaluation:
Each Punnett square is worth 1 point, for a total of 6 points. Each question with a genotype, phenotype, ratio, or possible kids question is worth 1 point for a total of 6 points. The last two complete sentence questions are worth 3 points each, for a total of 6 points. This assignment is worth a total of 18 points.

Name: _____ Row: _____

Date:_____ Period:_____

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.



Genotypes: _____ Genotypic Ratio: _____

Phenotypes: _____

% of kids with disorder: _____ % of carrier kids: _____

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		
Y		

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

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		
Y		

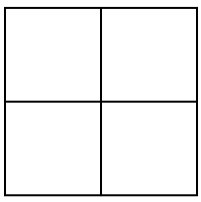
Genotypes: _____

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

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.



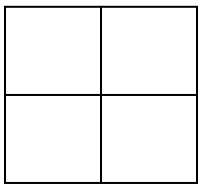
Genotypes: _____

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

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.



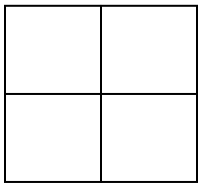
Genotypes: _____

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.

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

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