Answer each question of this workshop with the sources of information that are in the last page of this file.

EXERCISES TO PRACTICE

Let's practice Mendel's Laws of inheritance:

1. Drag and drop the appropriate traits on Jenna's face based on the traits denoted by the white circles in the Punnett squares.

2. In the Punnett squares, the horizontal parental genes are Jenna's mother's, while the vertical ones are her father's. Which of Jenna's parent's traits are heterozygous? Select all that apply:

A. Father's eye color _____

B. Mother's nose shape _____

C. Mother's hair color _____

D. Father's nose shape _____

E. Mother's eye color _____

F. Father's hair color _____

3. Fill in the appropriate name (either dominance, segregation, or independent assortment) for each law based on their descriptions:

Law of _____: Each parental allele pair is separated during the formation of gametes.

Law of _____: Each trait is passed down separately. The inheritance of one trait will not affect the inheritance of another trait.

Law of _____: Recessive alleles will always be masked in the presence of a dominant allele.

Law of _____: Genetic linkage violates this law.

Law of _____: A heterozygous genotype will have a dominant phenotype.

Law of _____: Offspring has an equal probability of receiving either one of the two alleles from each parent.

4. Two parents that both have green eyes have a child with blue eyes, what must the parents' genotypes be? Complete the Punnett square to find the answer:

G: green eyes
g: blue eyes

GG	Gg
Gg	gg

5. Identify the genetic combinations where the dominant or recessive traits will appear in the phenotype:

	R	r
r	Rr	rr
r	Rr	rr

	P	P
p	Pp	Pp
p	Pp	Pp

	S	S
S	SS	SS
s	Ss	Ss

6. Look at the following Punnett square and answer the questions of phenotype and genotype:

B: Brown fur
b: white fur

	B	B
b	Bb	Bb
b	Bb	Bb

What percentage of the offspring will be homozygous?

_____

What percentage of the offspring will be heterozygous?

_____

What percentage of the offspring will have brown fur? _____

What percentage of the offspring will have white fur? _____

7. Mr. Johnson was creating a Punnett square, but he didn't check his work. Below, check his answers and figure out where he made his mistake. Choose Mr. Johnson's mistake in the Punnett square:

A: long tails

a: short tails

	A	a
a	Aa	aa
a	aa	aa

He said: "I figured out that 25% will have long tails and 75% will have short tails"

If solved correctly, what SHOULD Mr. Johnson's real results be? "I figured out that _____ will have long tails and _____ will have short tails"

SOURCES OF INFORMATION

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4. Punnett squares, (online). Taken from: http://www.sbs.utexas.edu/sanders/bio309/Lectures/2006/Punnet.htm Retrieved on: 17/06/2020

5. Exercise of Mendel's Laws https://www.ck12.org/assessment/tools/geometry-tool/plix.html?eId=SCI.BIO.208&questionId=5762e1099616aa1e00d6b43f&artifactID=2664116&plix_redirect=1 Retrieved on: 17/06/2020