REEBOP GENETICS

BODY SEGMENTS:

3 body segments = BB or Bb

2 body segments = bb

TAIL:

Curly tail = TT or Tt

Straight tail = tt

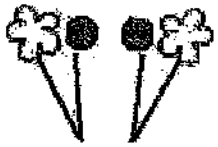
EYES:

2 eyes = EE or Ee

No eyes = ee

ANTENNAE:

2 Round antennae = AA



2 round and 2 flowered = Aa

2 Flowered antennae = aa

HOVER WINGS:

2 hoverwings = HH or Hh

No hoverwings = hh

LEGS:

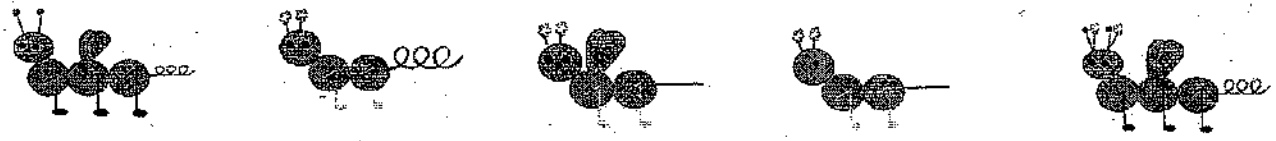
BLUE legs = L L

GREEN legs = L l

YELLOW legs = l l

NAME _____

REEBOP GENETICS



The GENOTYPE for your parent Reebop is:

Bb Tt Ll Aa Hh Ee

This parent is _____ for all of its alleles.
homozygous heterozygous

What is its PHENOTYPE ?

_____

Draw a picture of what your parent Reebop looks like:

LAY your parent chromosomes FACE DOWN on your desk.

1. MATCH up your chromosomes BY SIZE (homologous pairs)
2. Do MEIOSIS TO MAKE GAMETES WITH YOUR CHROMOSOMES.
3. Use INDEPENDENT ASSORTMENT to separate chromosomes (one of each kind of chromosome) to make gametes
4. Choose one set of chromosomes to make a baby with your neighbor.

WRITE DOWN the GENOTYPE for your baby.

_____

Use the code to DRAW A PICTURE OF WHAT THIS BABY WILL LOOK LIKE below:

Does this baby have the same GENOTYPE as its parents? *YES* *NO*

Does this baby have the same PHENOTYPE as its parents? *YES* *NO*

USE THE CHROMOSOMES YOU DIDN'T USE THE FIRST TIME TO MAKE A BABY BROTHER.

BABY BROTHER GENOTYPE _____

DRAW A PICTURE BELOW OF WHAT THE 2nd BABY LOOKS LIKE:

Does the new baby have the same genotype as the parents? YES NO

Does the new baby look exactly like the 1st baby? YES NO

Name Mendel's TWO LAWS that explain why brothers and sisters are not identical even though they come from the same parents?

LAW OF _____

LAW OF _____

* * * * * * * * * * * * * * *

When 2 alleles BLEND to show an INTERMEDIATE PHENOTYPE (like crossing red and white flowered plants and producing PINK flowered offspring) the gene is said to be INCOMPLETELY DOMINANT.

If a trait shows INCOMPLETE DOMINANCE which genotype must an organism have to show the intermediate blended phenotype?

A. PURE DOMINANT
B. PURE RECESSIVE
C. HETEROZYGOUS
D. HOMOZYGOUS RECESSIVE

Which trait in REEBOPS appears to blend and show INCOMPLETE DOMINANCE? _____

If pea plants showed INCOMPLETE DOMINANCE for HEIGHT,
what would a plant look like that had BOTH a tall allele and a short allele? _____

* * * * * * * * * * * * * * *

When neither of two alleles is dominant over the other, they don't blend but BOTH APPEAR TOGETHER AT THE SAME TIME (like A and B blood type alleles). The gene is said to be CODOMINANT.

Which trait in REEBOPS appears to be CODOMINANT? _____

Why do you think so? _____

If pea plants showed CODOMINANCE for flower color,
what would a plant look like that had BOTH a red flowered allele
and a white flowered allele? _____

A Reebop with the genotype T t is _____ for tail genes.
homozygous heterozygous

A Reebop with the genotype L L is _____ for leg genes.
homozygous heterozygous

A Reebop with the genotype e e is _____ for eye genes.
pure hybrid

A Reebop with the genotype A a is _____ for antenna genes.
pure hybrid

What has to be true about the Reebop parents that show a DOMINANT allele for a trait, but have a baby that shows the RECESSIVE trait?

A. both parents are HOMOZYGOUS for the trait
B. both parents are HETEROZYGOUS for the trait
C. both parents are PURE for the trait
D. IMPOSSIBLE: Dominant looking parents can't have a recessive looking offspring

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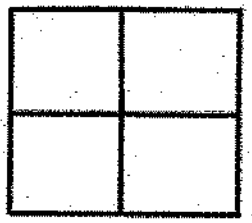
MAKE SOME REEBOP CROSSES:

Curly tails (T) is dominant over straight tails (t)

Cross a HOMOZYGOUS CURLY TAILED MOM with a STRAIGHT TAILED DAD



GENOTYPE of offspring = _____

PHENOTYPE of offspring = _____

Could these parents ever have a straight tailed baby? YES NO

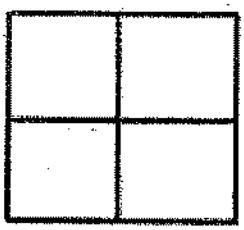
Explain why or why not? _____

This cross is a _____ cross.
MONOHYBRID DIHYBRID

* * * * * * * * * * * * * * *

MAKE A CROSS BETWEEN

Cross a PURE STRAIGHT TAILED MOM with a HYBRID CURLY TAILED DAD



What is the probability the offspring will:

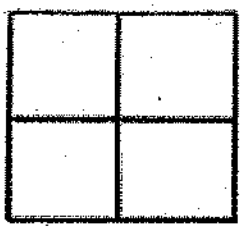
Have Curly tails: _____ out of 4 OR _____%

Have Straight tails: _____ out of 4 OR _____%

Be hybrids: _____ out of 4 OR _____%

Be homozygous: _____ out of 4 OR _____%

MAKE A CROSS BETWEEN TWO REEBOPS THAT ARE HETEROZYGOUS FOR EYE GENES.



PROBABILITY	GENOTYPE	PHENOTYPE
____ out of 4 OR _____ % will be	_____	_____
____ out of 4 OR _____ % will be	_____	_____
____ out of 4 OR _____ % will be	_____	_____

What is the probability that the offspring from this cross will be able to see? _____ %
You are given a Reebop WITH EYES that can see. You would like to start a Reebop ranch and breed this Reebop to populate your ranch, however having blind Reebops is an added expense because they can't find food on their own and you will need to hire more Reebop wranglers to watch them.

What could you do to find out whether this Reebop is EE or Ee ? _____

What kind of Reebop would you breed this one with to find out its genotype?

_____

* * * * * * * * * * * * * * *

REEBOPS HAVE THE SAME A, B, O BLOOD TYPE ALLELES AS HUMANS.

Tell two different GENOTYPES a Reebop could have if it had TYPE A blood. _____ _____

If one of your Reebops WITH AB TYPE blood was injured and needed a blood transfusion, tell all the possible blood types that could act as donors. _____ _____ _____

Which blood type is considered to be the "universal donor"? _____