

BACKGROUND:

- ▶ Genetics is the study of how _____ are passed from _____ to _____ through _____ and _____
- ▶ Sperm and egg: _____
- ▶ All other cells: _____

FERTILIZATION AND SEX DETERMINATION:

- ▶ _____ of the _____ chromosomes is the _____ chromosomes
- ▶ Mom gives _____ and _____, Dad gives _____ and _____, Male determines _____
- ▶ If sperm Y joins with X from egg → _____
- ▶ If sperm X joins with X from egg → _____

GENES:

- ▶ Each chromosome carries _____
- ▶ Some traits have _____ gene (ie. _____)
- ▶ Some traits are the result of _____ together:
 - ▶ Ex. _____
- ▶ Genes can either be _____ or _____
 - ▶ Dominant:

 - ▶ Ex. Brown eye colour is _____ over blue
 - ▶ Recessive:

 - ▶ Ex. Both parents have blue eyes → child will have blue eyes

PUNNETT SQUARE:

- ▶ Used to _____ the possible _____ (_____) of a _____ or cross
- ▶ Steps to construct a Punnett Square:
 1. Determine _____ genotypes
 2. Determine the possible _____ of the _____ of each _____
 3. Write these _____ in the _____ of the squares
 4. Fill in the _____ and _____ the _____ and _____ of the next generation
- ▶ Same genes (tt): _____
- ▶ Different genes (Tt): _____

EXAMPLE:

▶ Consider the cross between a _____ tall plant
(_____) and a purebred _____ plant (_____)

1. Determine parental genotypes:

▶ _____

2. Determine the possible genotypes of the gametes of each parent

▶ _____

3. Write these genotypes in the exterior of the squares

4. Fill in the interior and interpret the genotype and phenotype of the next generation

Genotypes: _____

Phenotypes: _____

EXAMPLE 2:

► Consider the cross of 2 F1 plants from the last cross

1. Parental genotypes:

► _____

2. Gametes:

► _____

3. Construct and fill in the table:

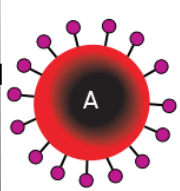
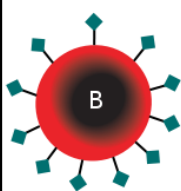
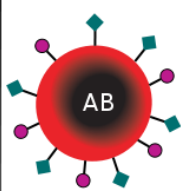
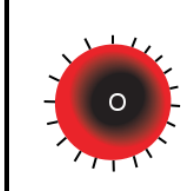


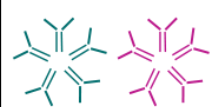



4. Complete the cross:

Genotypic Ratio: _____

Phenotypic Ratio: _____

BLOOD TYPES:

- ▶ There are _____ different blood types: _____
- ▶ Blood type is based on the _____ or _____
_____ present on your _____
- ▶ Have _____ against other blood types
(_____) so you cannot receive other blood types

	Group A	Group B	Group AB	Group O
Red blood cell type				
Antibodies present	 Anti-B	 Anti-A	None	 Anti-A and Anti-B
Antigens present	A antigen 	B antigen 	A and B antigens 	None

- ▶ A, B, AB, and O are the _____
- ▶ The _____ are as follows:
 - ▶ Blood type A:
 - ▶ Either _____
 - ▶ Therefore, A is _____ over O
 - ▶ Blood type B:
 - ▶ Either _____
 - ▶ Therefore, B is _____ over O
 - ▶ Blood type O:
 - ▶ _____
 - ▶ Type O is _____ so you must have 2 copies of the O gene
 - ▶ Blood type AB:
 - ▶ _____
 - ▶ These are equally expressed so we call this _____
- ▶ Blood types are also either _____ or _____ due to the Rh factor
- ▶ Rh factor is a _____ on red blood cells
 - ▶ + : _____
 - ▶ - : _____
- ▶ Mothers that are _____ can create _____ against _____ babies if their blood mixes