Dihybrid Crosses

-means to look at TWO traits
(eg) what are the chances of getting a black haired, green eyed baby?
-Involves now TWO SETS of letters
(eg) if $T = tall$ $t = short$
Y = yellow $y=green$
What possible combinations from the above legend can we make
TtYy, TTYY , + others?????
Punnett Squares with Dihybrid Crosses
(eg) What if we crossed the following?
parent genotype: TtYy X TTYY
parent genotype: Itty X ITT
parent phenotype.
STEP 1 – Create Legend from text (the hardest part)
STEP 2 – Create Genotypes and GAMETES
TtYy = TTYY =
gamets gametes
STEP 3 – Use Wisniewski "EXTREME SHORTCUT"
STEP 4 – produce punnet square

Most complex dihybrid cross is where BOTH parents are HETEROZYGOUS in both traits

(eg) RrBb X RrBb = 16 combinations

has that 9:3:3:1 ratio in offspring

Lethal Alleles- what are they?

Mexican Hairless dog example:

If a Hh and Hh are crossed, (HH = lethal), one of the offspring does not survive which gets the HH alleles. Draw this punnett square and see...

Polygenic Inheritance

What is this...

-in regards to skin tone...if 3 gene pairs determine colour, the more "capital letters"(which are incompletely dominant) provided by the genes makes the skin darker

(ie) AABBCC is dark and aabbcc is the light

-in other organisms a gene can "MASK" another gene

if... B = black b = brown

W = will mask colour gene

w = will NOT mask colour gene

(eg) wwBb = _____ colour (phenotyoe) wwbb = _____ colour (phenotype)

however....

WwBb = _____ phenotype

Environment

- can affect phenotype of organism
- -(eg) temp can change colour of certain flowers
- (eg) leaves underwater different than leaves above water on sme plant
- (eg) lighten of hair, darker freckles from sunlight