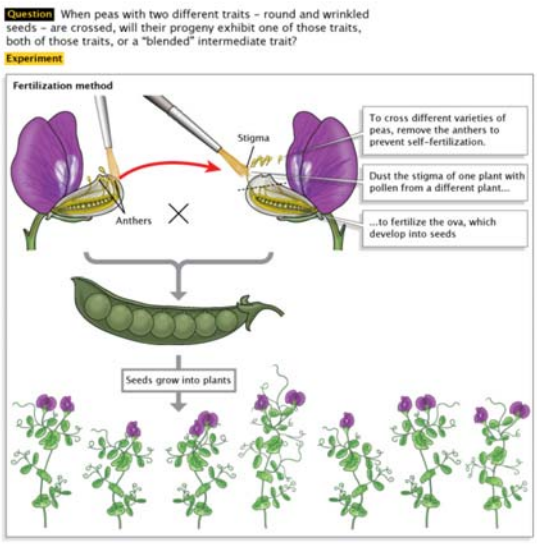
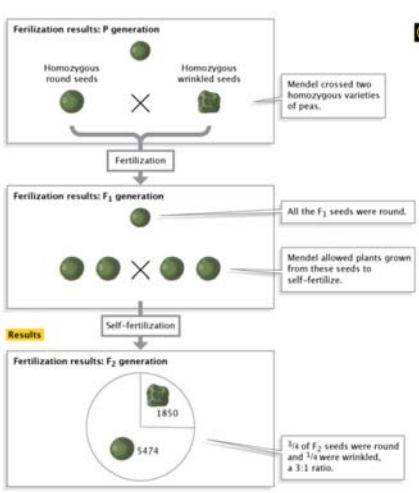




Monohybrid Example

- If the color Red is dominant to White in flowers. What would the offspring of a Homozygous dominant flower crossed with a heterozygous flower?

Determine Phenotype & Genotype

- Genotype:
  - 2/4 = Rr (Red flowers)
  - 2/4 = RR (Red flowers)
- Phenotype:
  - **100% Red flowers**
  - (4 out of 4 will be red if the color red is dominant)

	R	r
R	RR	Rr
R	RR	Rr

What is the ratio if 2 hybrids are crossed together?

Rr x Rr

	R	r
R	RR	Rr
r	Rr	rr

3:1

75% 25%

R r

Question 2 (5)

If you crossed two heterozygous organisms, what percentage of the offspring would be homozygous recessive?

1) 25%
2) 50%
3) 75%
4) 100%

Question 4 (5)

If you cross two heterozygous brown-eyed people, what percentage of the offspring would have brown eyes?

1) 25%
2) 50%
3) 75%
4) 100%

Question 5 (5)

In a Punnett square, what do the letters in the inner boxes represent?

1) the mom
2) the dad
3) the actual offspring
4) the expected offspring

Incomplete Dominance

- Phenotype of a Heterozygous is a blend of the dominant and recessive alleles
  - Neither allele is completely dominant over the other
- Ex: A Red flower (RR) crossed with a white flower (rr)

	R	R
r	Rr	Rr
r	Rr	Rr

Genotype: 100% **Rr** (4/4)

Phenotype: 100% **Pink**

CODOMINANCE

Occurs when both alleles are expressed in a Heterozygous offspring

Neither allele is dominant; alleles do not blend in phenotype, they appear together, co-exist

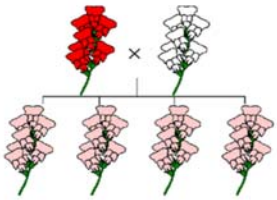
Example: A homozygous dominant brown rat (BB) crosses with a homozygous recessive white rat (bb). What are the offspring probabilities?

	B	B
b	Bb	Bb
b	Bb	Bb

Genotype: (4/4) 100% Bb

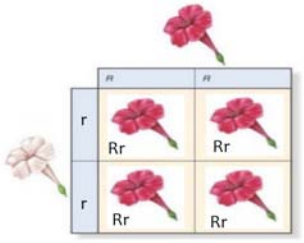
Phenotype: (4/4) 100%

Brown and white spotted



Incomplete Dominant Trait

Codominant Trait

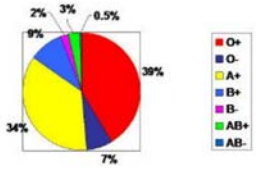


Complete Dominant Trait

BLOOD TYPES

A, B, AB, O

Multiple alleles

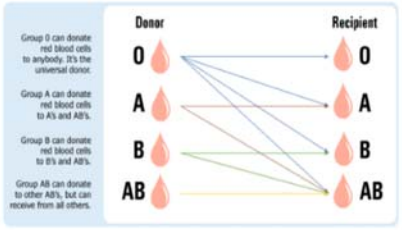


$I^A I^B$ are codominant, *i* is recessive

Rh +: dominant; Rh -: recessive

Blood Type	Genotype
A	I^AI^A or I^Ai
B	I^BI^B or I^Bi
AB	I^AI^B
O	*ii*

Universal Donor = O-



What your blood type says about you:

Eat right for your blood type

	Caucasians	African American	Hispanic	Asian
O +	37%	47%	53%	39%
O -	8%	4%	4%	1%
A +	33%	24%	29%	27%
A -	7%	2%	2%	0.5%
B +	9%	18%	9%	25%
B -	2%	1%	1%	0.4%
AB +	3%	4%	2%	7%
AB -	1%	0.3%	0.2%	0.1%

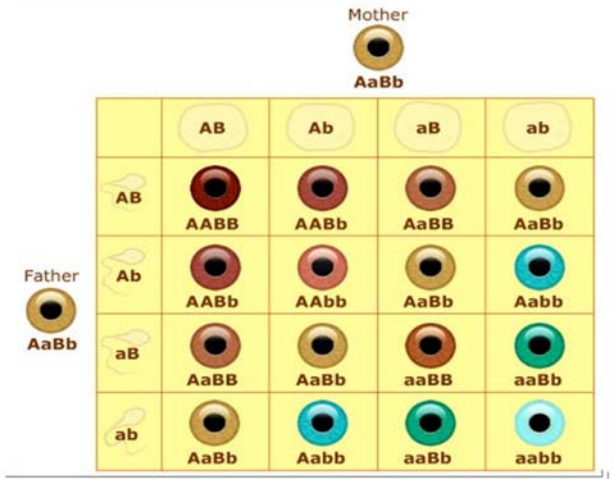
POLYGENIC

One trait governed by 2 or more sets of alleles

- Constant variation of phenotypes

Ex: Skin color, represented by alleles A and B

- **AABB** — Very dark skin
- **AAB**b or A**a**B**B** — Dark
- **Aa**B**b** or **AA**bb or aa**BB** — Medium brown
- **A**abb or aa**B**b — Light
- aabb — Very light



	ABC	ABc	AbC	Abc	aBC	aBc	abC	abc
ABC	AABBCC	AABBCc	AABbCC	AABbCc	AaBBCC	AaBBCc	AaBbCC	AaBbCc
ABc	AABBCc	AABBcc	AABbCc	AABbcc	AaBBCc	AaBBcc	AaBbCc	AaBbcc
AbC	AABbCC	AABbCc	AAbbCC	AAbbCc	AaBbCC	AaBbCc	AabbCC	AabbCc
Abc	AABbCc	AABbcc	AAbbCc	AAbbcc	AaBbCc	AaBbcc	AabbCc	Aabbcc
aBC	AaBBCC	AaBBCc	AaBbCC	AaBbCc	aaBBCC	aaBBCc	aaBbCC	aaBbCc
aBc	AaBBCc	AaBBcc	AaBbCc	AaBbcc	aaBBCc	aaBBcc	aaBbCc	aaBbcc
abC	AaBbCC	AaBbCc	AabbCC	AabbCc	aaBbCC	aaBbCc	aabbCC	aabbCc
abc	AaBbCc	AaBbcc	AabbCc	Aabbcc	aaBbCc	aaBbcc	aabbCc	aabbcc

1 : 6 : 15 : 20 : 15 : 6 : 1