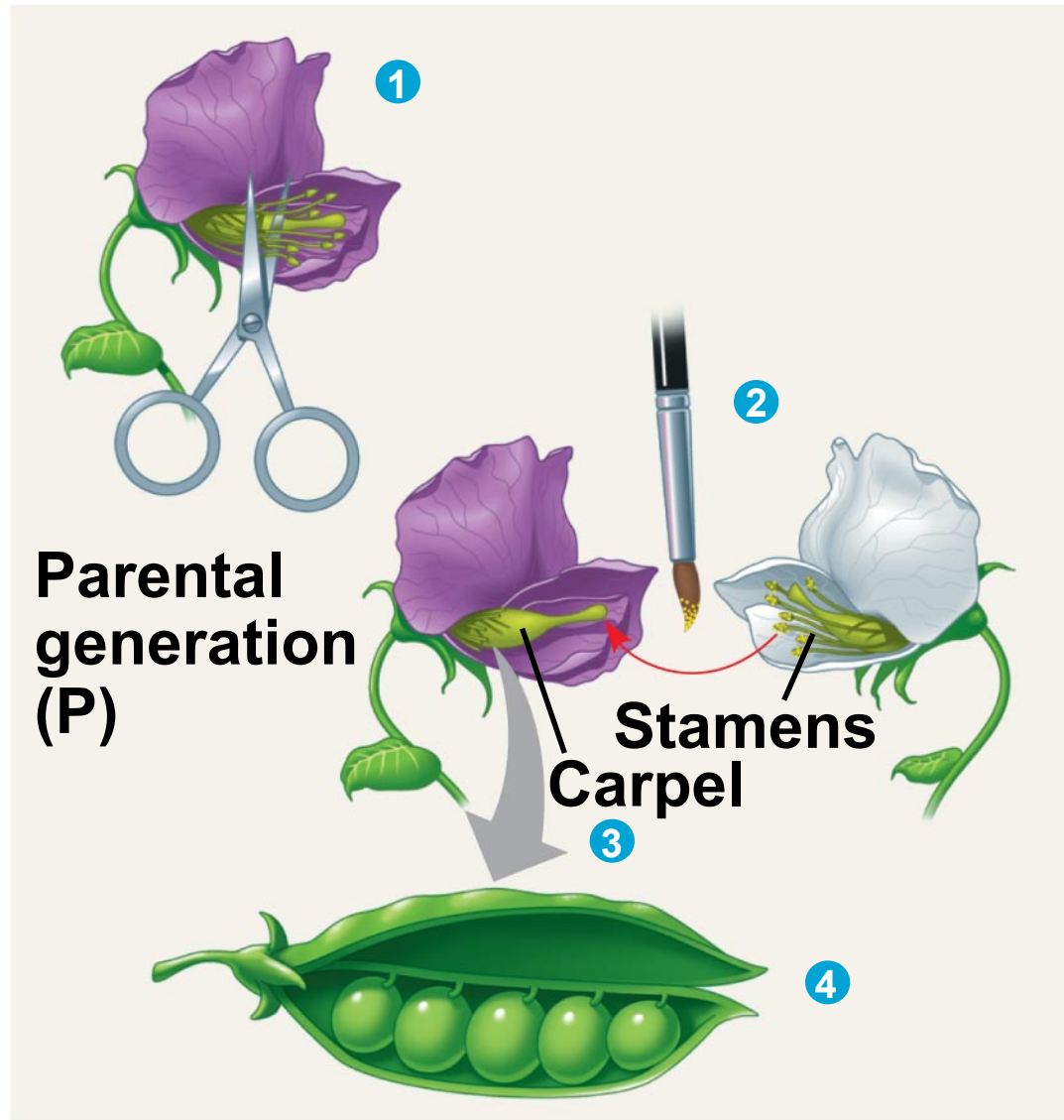


Gregor Mendel
1822 – 1884 C.E.



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TECHNIQUE



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RESULTS

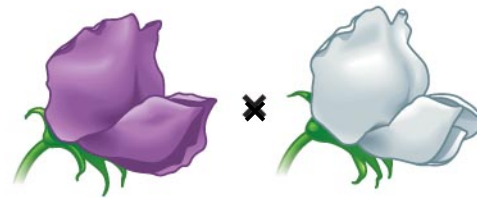
**First
filial
gener-
ation
offspring
(F₁)**



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EXPERIMENT

P Generation
(true-breeding
parents)

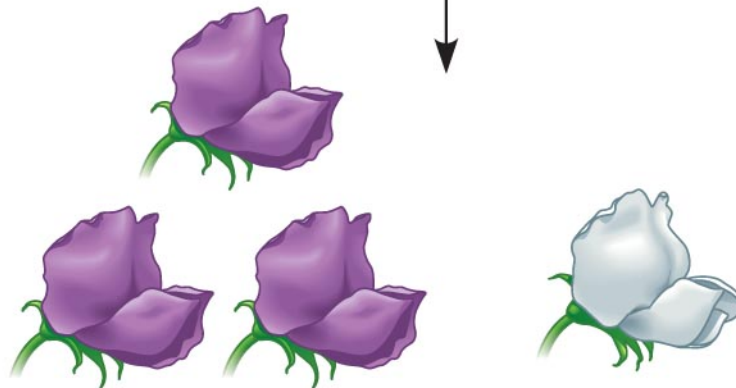


F₁ Generation
(hybrids)



All plants had
purple flowers

F₂ Generation

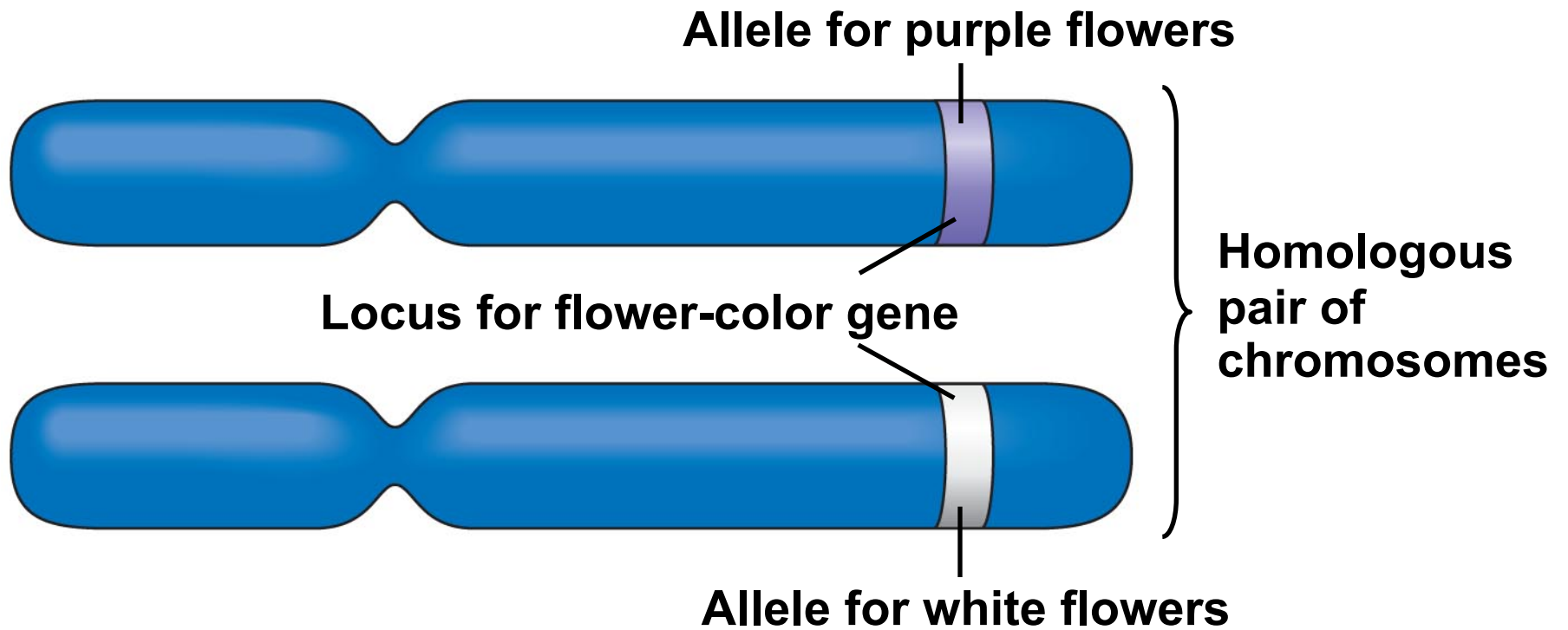


705 purple-flowered
plants

224 white-flowered
plants

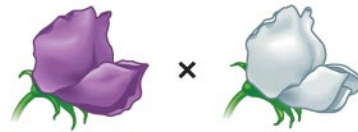
Table 14.1 The Results of Mendel's F₁ Crosses for Seven Characters in Pea Plants

Character	Dominant Trait	x	Recessive Trait	F ₂ Generation Dominant:Recessive	Ratio
Flower color	Purple	×	White	705:224	3.15:1
					
Flower position	Axial	×	Terminal	651:207	3.14:1
					
Seed color	Yellow	×	Green	6,022:2,001	3.01:1
					
Seed shape	Round	×	Wrinkled	5,474:1,850	2.96:1
					
Pod shape	Inflated	×	Constricted	882:299	2.95:1
					
Pod color	Green	×	Yellow	428:152	2.82:1
					
Stem length	Tall	×	Dwarf	787:277	2.84:1
					



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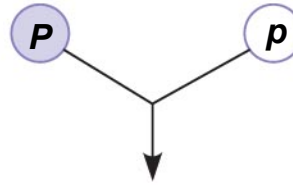
P Generation



Appearance: Purple flowers White flowers

Genetic makeup: *PP* *pp*

Gametes:



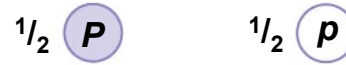
F₁ Generation



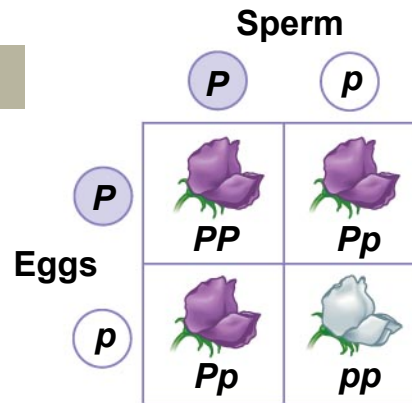
Appearance: Purple flowers

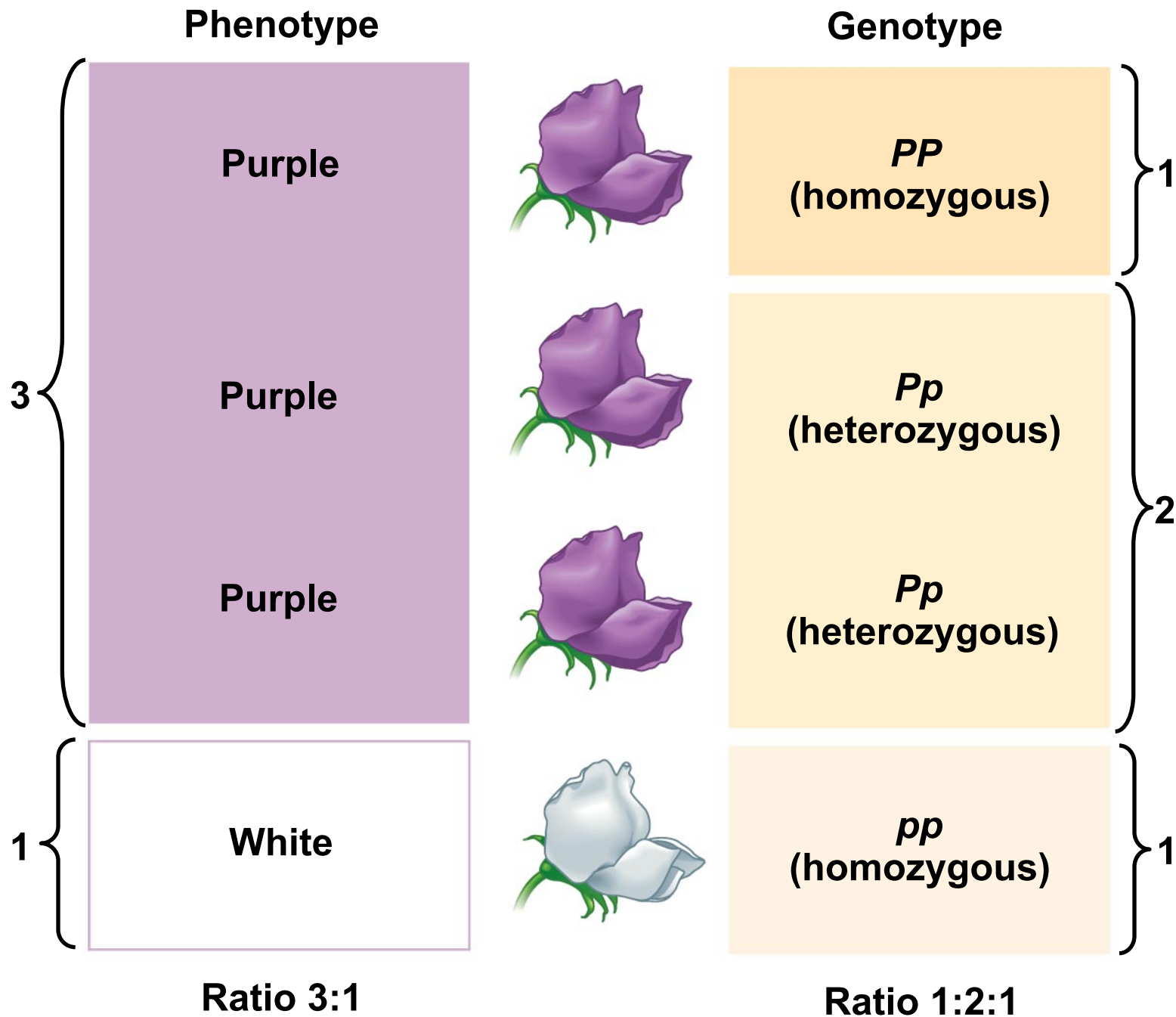
Genetic makeup: *Pp*

Gametes:

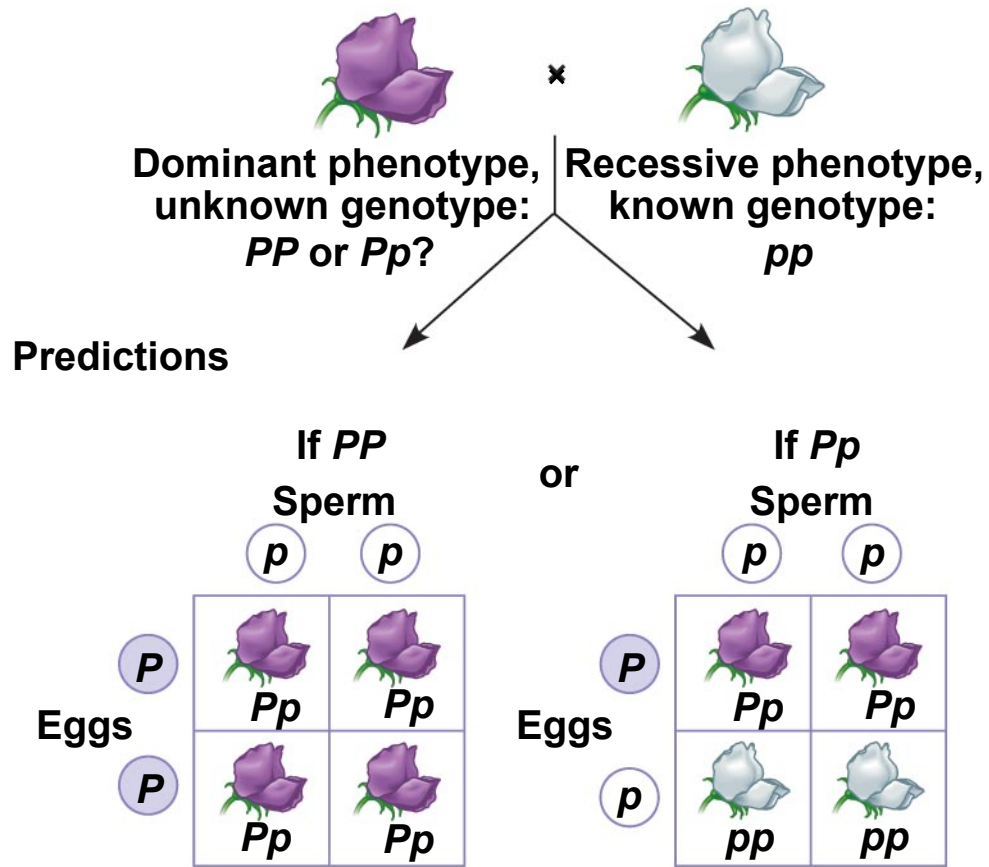


F₂ Generation





TECHNIQUE



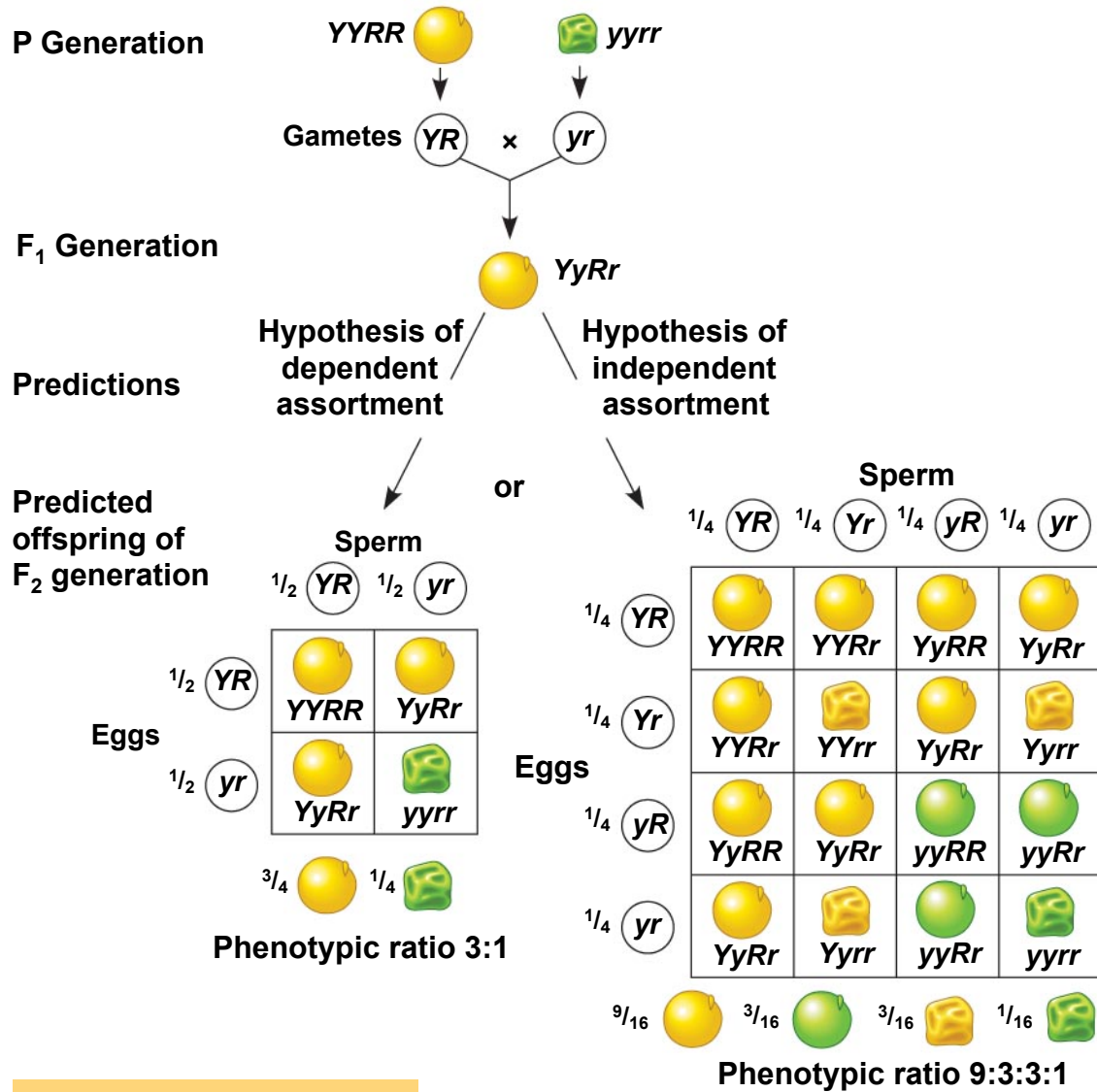
RESULTS



or

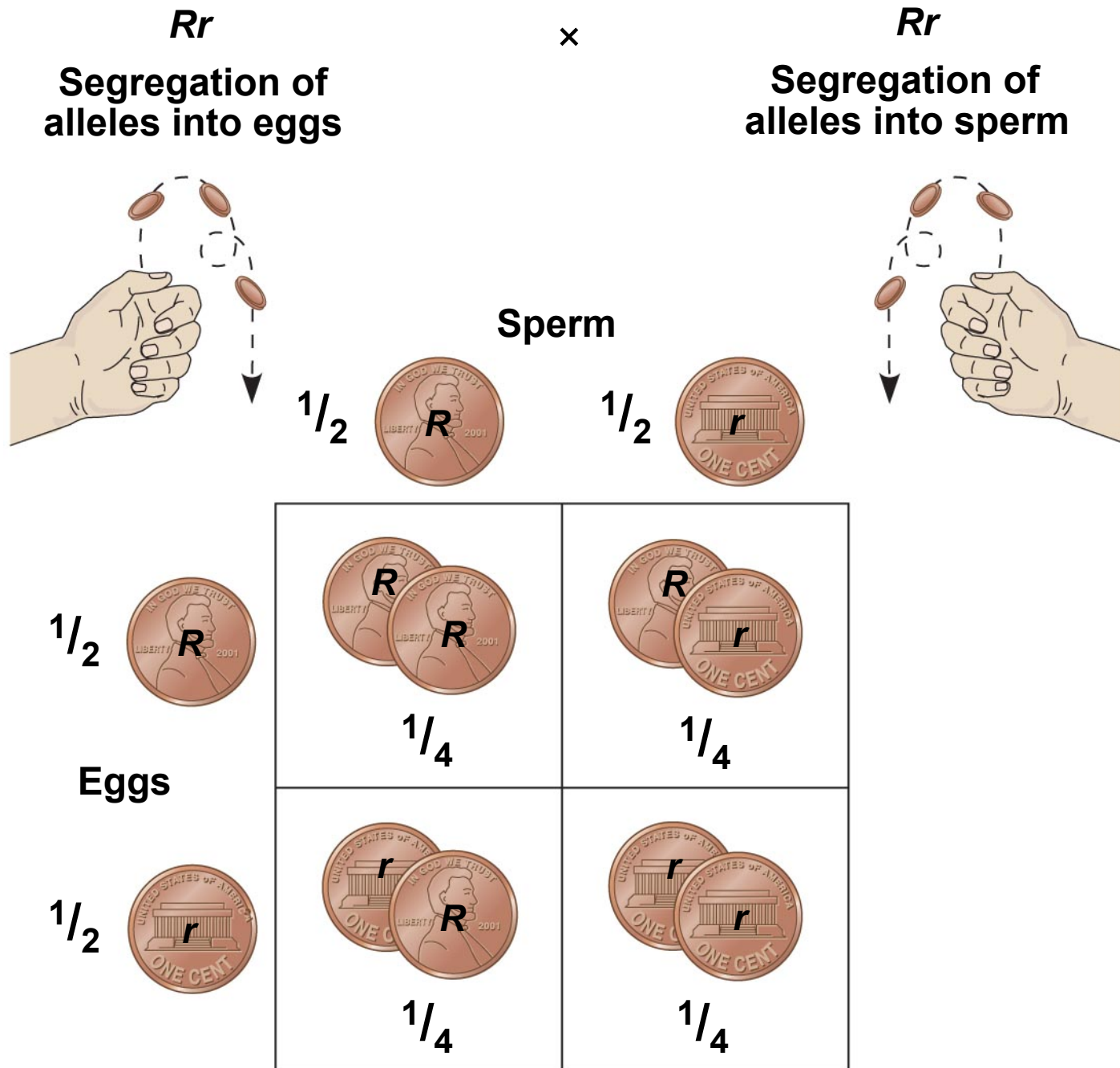


EXPERIMENT

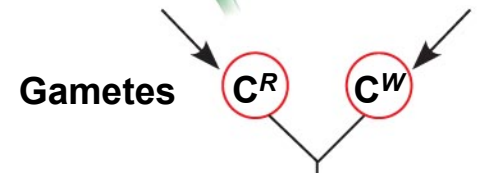
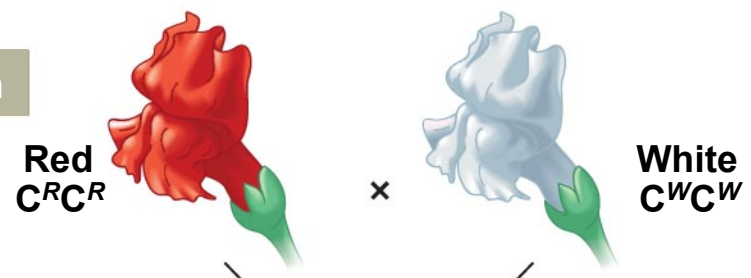


RESULTS

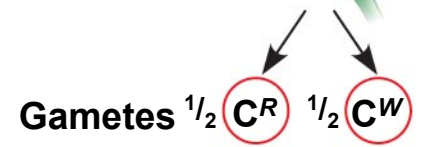
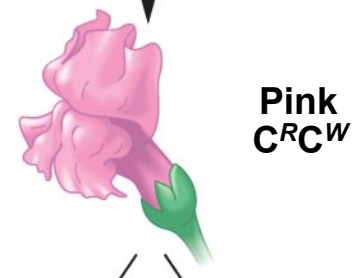
315 108 101 32 Phenotypic ratio approximately 9:3:3:1



P Generation



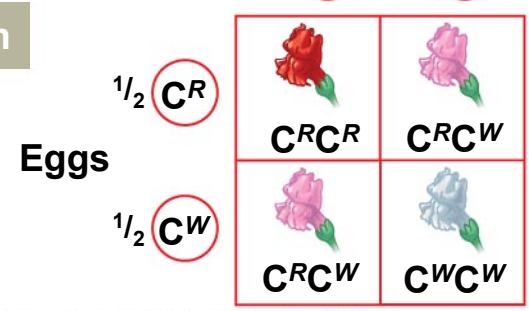
F₁ Generation





Sperm







F₂ Generation



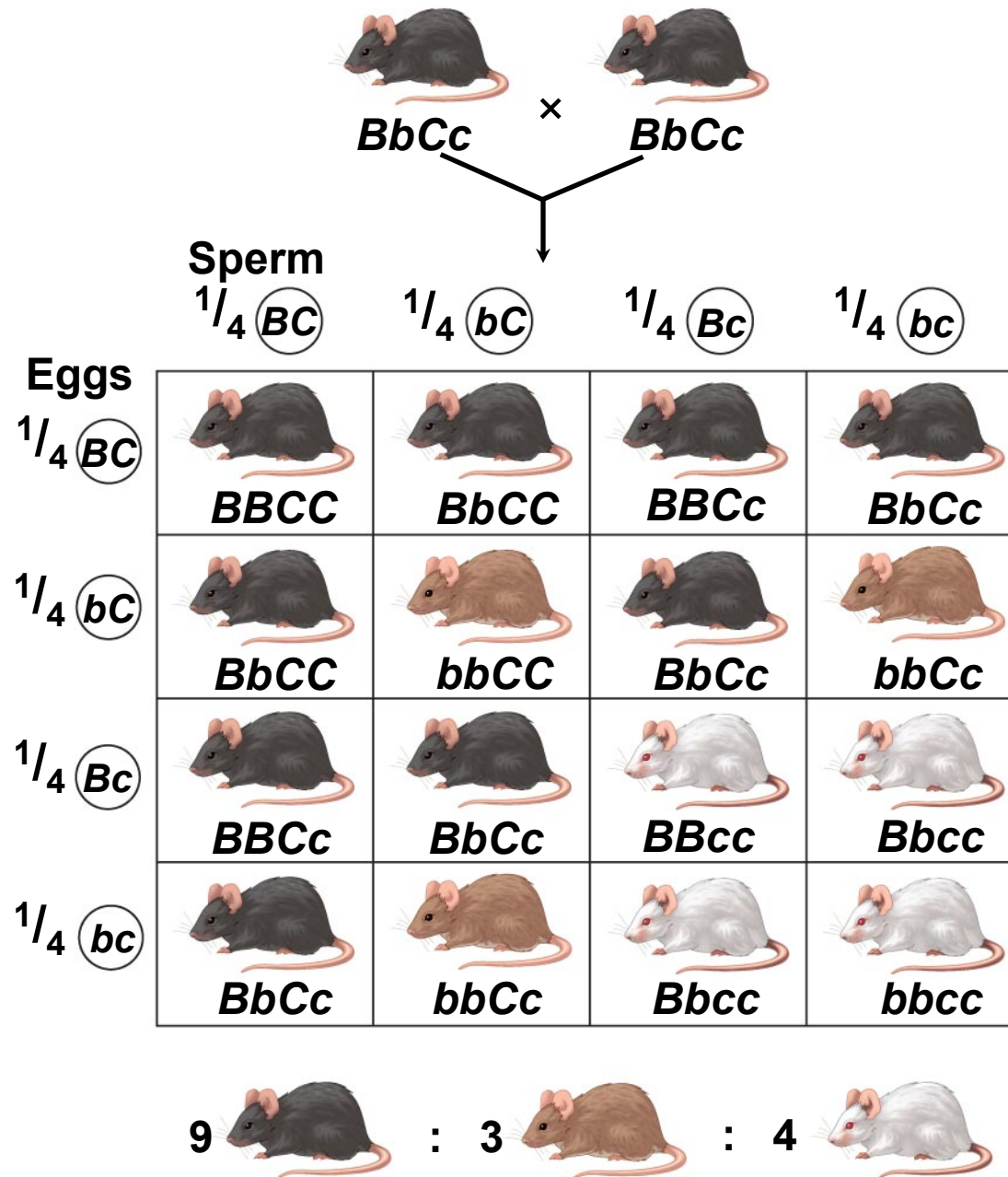
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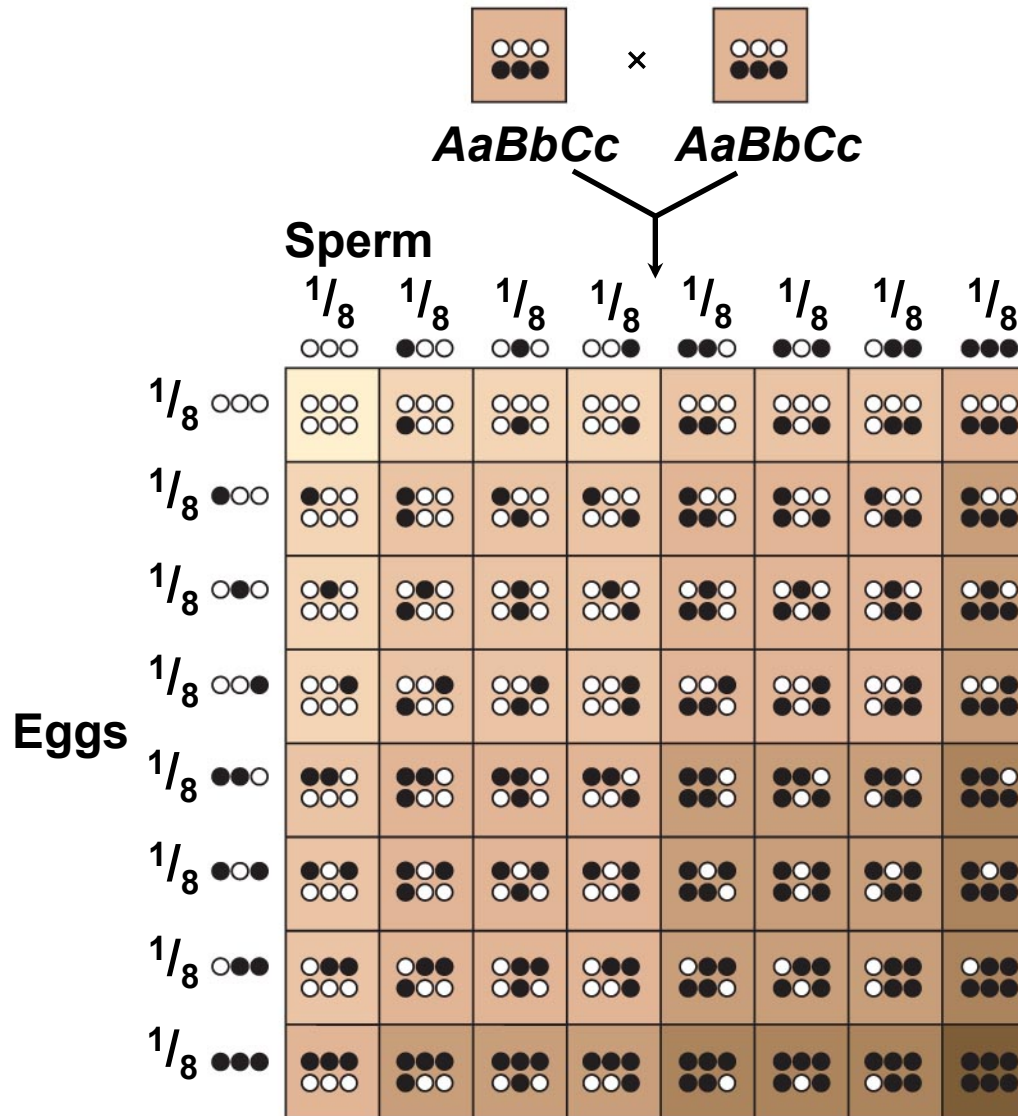
<u>Allele</u>	<u>Carbohydrate</u>
I^A	A 
I^B	B 
i	none

(a) The three alleles for the ABO blood groups and their associated carbohydrates

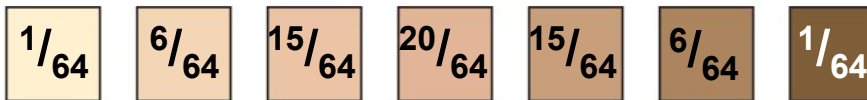
<u>Genotype</u>	<u>Red blood cell appearance</u>	<u>Phenotype (blood group)</u>
$I^A I^A$ or $I^A i$		A
$I^B I^B$ or $I^B i$		B
$I^A I^B$		AB
ii		O

(b) Blood group genotypes and phenotypes





Phenotypes:



Number of

dark-skin alleles: 0

1

2

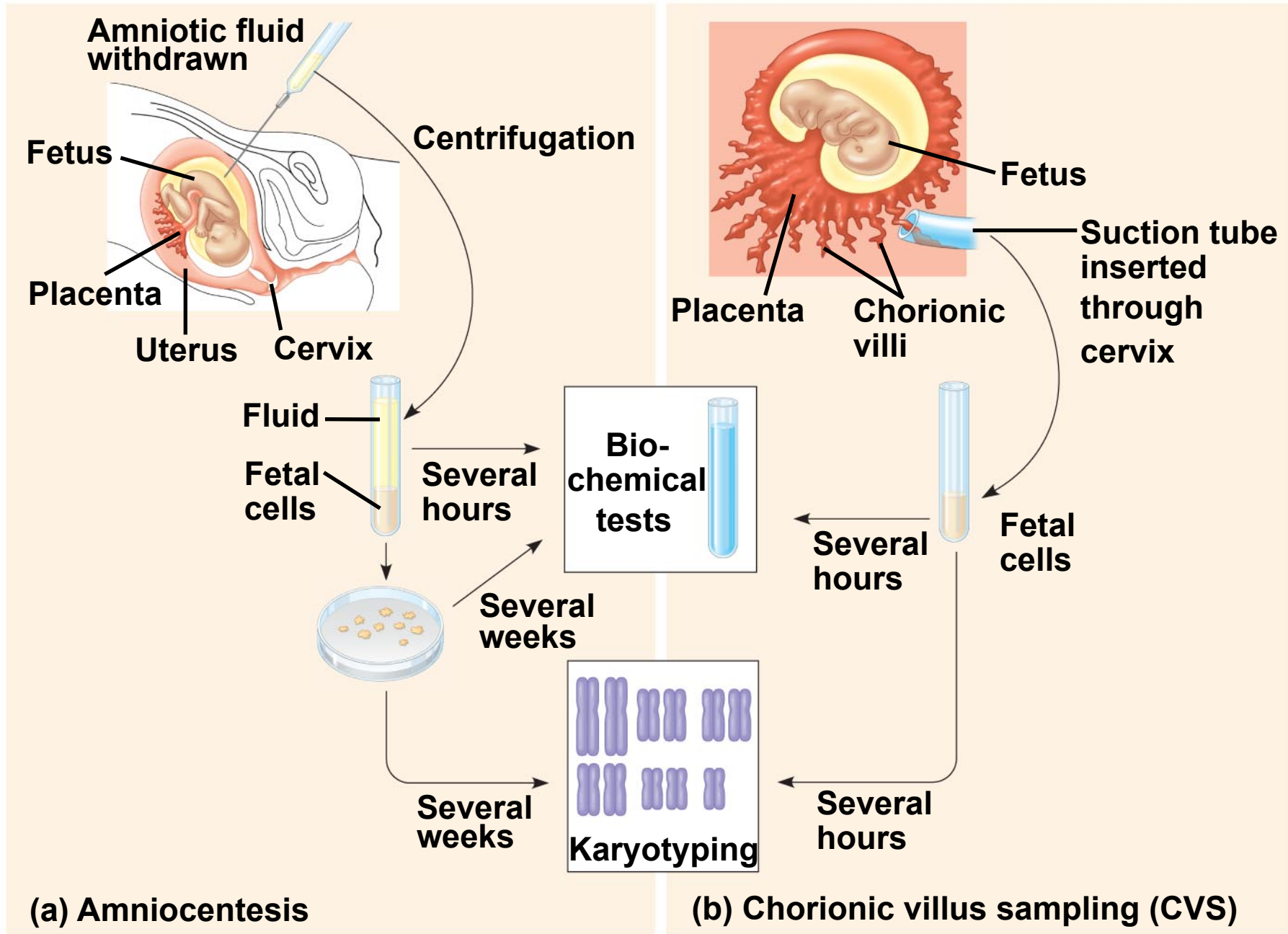
3

4

5

6

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