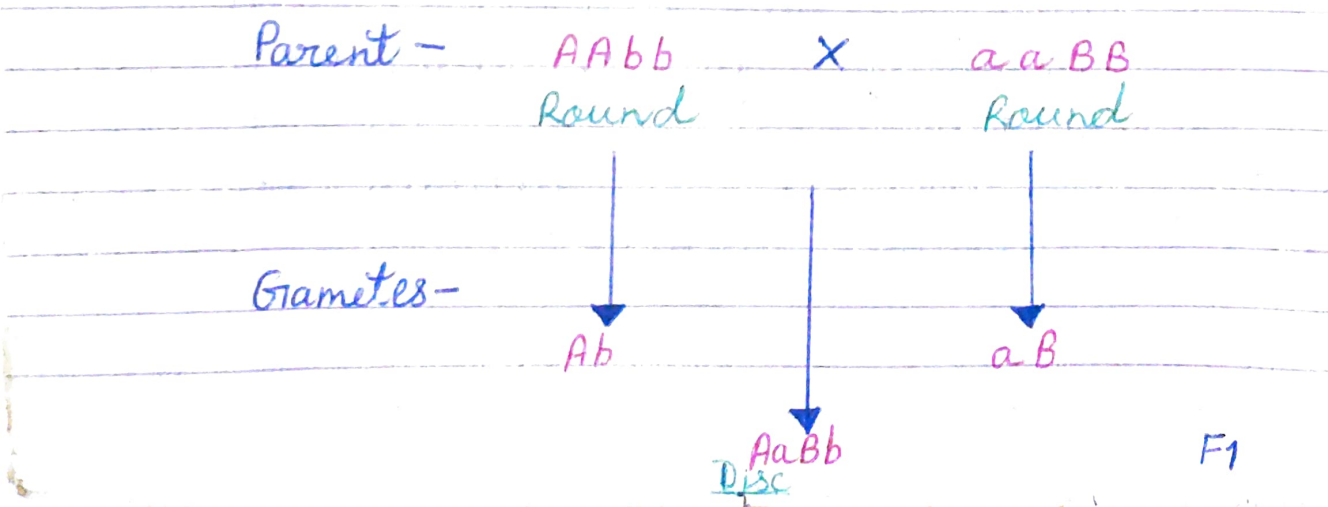
Interaction Of Genes

In the above cross, it can be said that the two independent pairs (Pq and pQ) cross in such way that one dominant gene (P) produces its effect weither the other dominant gene (Q) is present or not. But when P and Q genes are added together, Q effects in the presence of the other dominant gene (P) and hence a new type is produced in F_1 generation.

4) ADDITIVE OR POLYMERISM FACTOR (9:6:1)

Additive genes are the genes which produce an identical effect individually but when they are taken together they produce added effect i.e. doubled effect.

In cucurbita pepo, when two plants having round fruits with genotype (AAbb and aaBB) are crossed, a new type disc is produced in F_1 generation. The F_2 generation shows disc, round and elongated fruit in 9:6:1 ratio.



Intercross —

AaBb (Disc) × AaBb (Disc)

Gametes

♀ \ ♂	AB	Ab	aB	ab
AB	AABB Disc	AABb Disc	AaBB Disc	AaBb Disc
Ab	AABb Disc	AAbb Round	AaBb Disc	Aabb Round
aB	AaBB Disc	AaBb Disc	aaBB Round	aaBb Round
ab	AaBb Disc	Aabb Round	aaBb Round	aabb Elongated

— F_2

Disc – 9
Round – 6
Elongated – 1

In the above cross it can be said that the two dominant genes (AB) which when present in identical form they produce the same phenotypic effect but when they are added, the phenotypic effect is intensified and a new type disc fruit is produced in F_1 generation. The elongated fruit is the result of interaction between the to recessive alleles.