

We start by identifying and crossing the parental genotypes:

PARENTAL GENOTYPES

A/a; B/B; c/c

A/a; B/b; C/c

We then find the ratios for each gene:

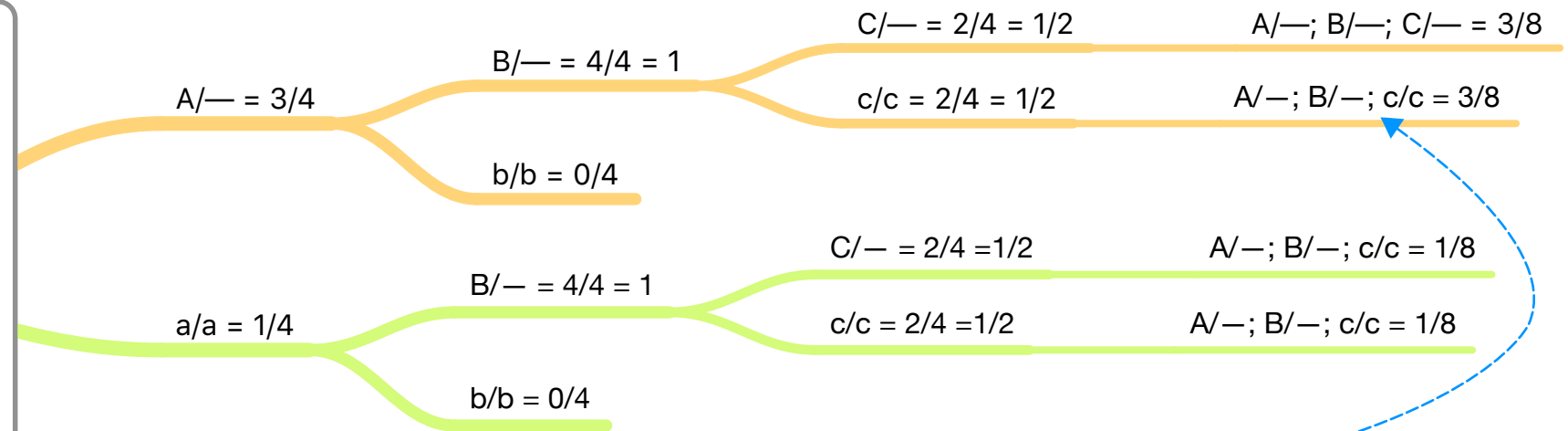
		MALE	
		A	a
FEMALE	A	A/A	A/a
	a	A/a	a/a

		MALE	
		B	B
FEMALE	B	B/B	B/B
	b	B/b	B/b

		MALE	
		C	c
FEMALE	c	C/c	c/c
	c	C/c	c/c

Punnett squares reveal parental gamete genotype, offspring genotype, and offspring phenotype probabilities for each gene.

Line branch method Depicts all possible probabilities per gene (get these from 1-gene Punnett squares), then multiplies each probability for the final probability. This example focuses on offspring phenotype probabilities, but the line-branch method can also be used to assess offspring genotypes, or even just the gamete genotypes that a single parent can produce.



DESIRED OFFSPRING PHENOTYPE

A/-; B/-; c/c

Last we use the line-branch method:

What is the probability of getting this desired offspring Phenotype?
Answer = 3/8