

# Punnett Squares Key

## Dihybrid Crosses

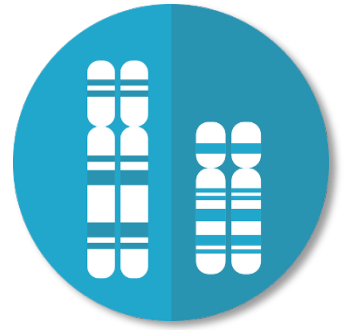


**Penguin Bay Biology**

- Biology Class, Simplified -

A Punnett square is a diagram that predicts the traits two individuals can produce when crossed.

Remember, a dihybrid cross is a cross of two traits!



1. Duchess, a brown-eyed (Bb) dog with white fur (rr), is having a litter of puppies with Dennis, a blue-eyed (bb) dog with red fur (Rr).

**Duchess:** Eye color: brown (heterozygous)  
Fur color: white

**Dennis:** Eye color: blue  
Fur color: red (heterozygous)

What are the parental alleles? **Bbrr** X **bbRr**

	Br	Br	br	br
bR	BbRR	BbRr	bbRr	bbRr
br	Bbrr	Bbrr	bbrr	bbrr
bR	BbRr	BbRr	bbRr	bbRr
br	Bbrr	Bbrr	bbrr	bbrr

Genotype: **4 : 4 : 4 : 4**

Phenotype: **4 brown eyes, red fur; 4 brown eyes, white fur; 4 blue eyes, red fur; 4 blue eyes, white fur**

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2. A botanist is crossing a red (Rr) tulip that is (Tt) tall with a blue (rr) tulip that is tall (Tt).

**Tulip 1:**     Color: red (heterozygous)  
                  Height: tall (heterozygous)

**Tulip 2:**     Color: blue  
                  Height: tall (heterozygous)

What are the parental alleles? RrTt X rrTt

	rT	rt	rT	rt
RT	RrTT	RrTt	RrTT	RrTt
Rt	RrTt	Rrtt	RrTt	Rrtt
rT	rrTT	rrTt	rrTT	rrTt
rt	rrTt	rrtt	rrTt	rrtt

Genotype: 6 : 6 : 2 : 2

Phenotype: 6 red, tall; 6 blue, tall; 2 red, short; 2 blue, short

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### Application:

1. What percentage of Duchess and Dennis' puppies have blue eyes? 50%
2. What percentage of Duchess and Dennis' puppies have red fur? 50%
3. What percentage of the tulips are blue? 50%
4. What percentage of the tulips are short? 25%