

Biological Systems and Processes

Lesson 14 - Inheritance

KS3 Biology

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Quick Recap...

1. State the names of the male and female sex cells...

S..... and E.....

2. How many chromosomes in a sex cell?

3. How many chromosomes does each parent pass on to their offspring?

4. How many chromosomes would be found in the body cell of the offspring?

5. What is a small section of DNA that codes for a specific protein called?



Quick Task...

For each genotype, state whether the combination is homozygous or heterozygous and then identify the phenotype.

Brown eyes (B) are dominant to blue eyes (b)

Genotype	Homozygous or heterozygous?	Phenotype
BB		
Bb		
bb		



Quick Task...

For each phenotype given below, list the possible genotypes.

Curly hair (S) is dominant to straight (s)

Phenotype	Homozygous or heterozygous?	Genotype
Curly hair	homozygous	
Curly hair	heterozygous	
Straight hair	homozygous	



Quick Task...

For each genotype, state whether the combination is homozygous or heterozygous and then identify the phenotype.

Purple flowers (P) are dominant to white flowers (p)

Genotype	Homozygous or heterozygous?	Phenotype
BB		
Bb		
bb		



Punnett Squares

If a **male** with brown eyes (BB) has babies with a female with blue eyes (bb), what is the probability of their child having blue eyes?

B – brown eyes (dominant) b – blue eyes (recessive)

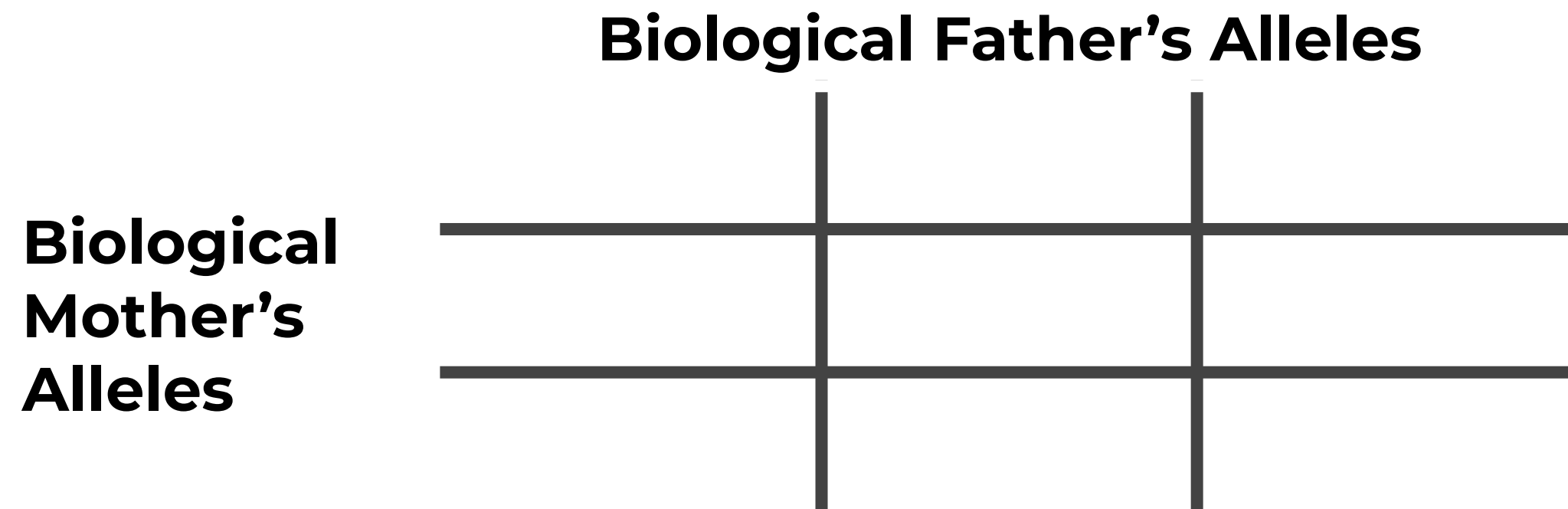
	Biological Father's Alleles	
	B	B
Biological Mother's Alleles	b	
	b	



Punnett Squares

A male grey (**Gg**) rabbit has babies with a female cream rabbit (**gg**).

What is the probability of their babies having cream fur?

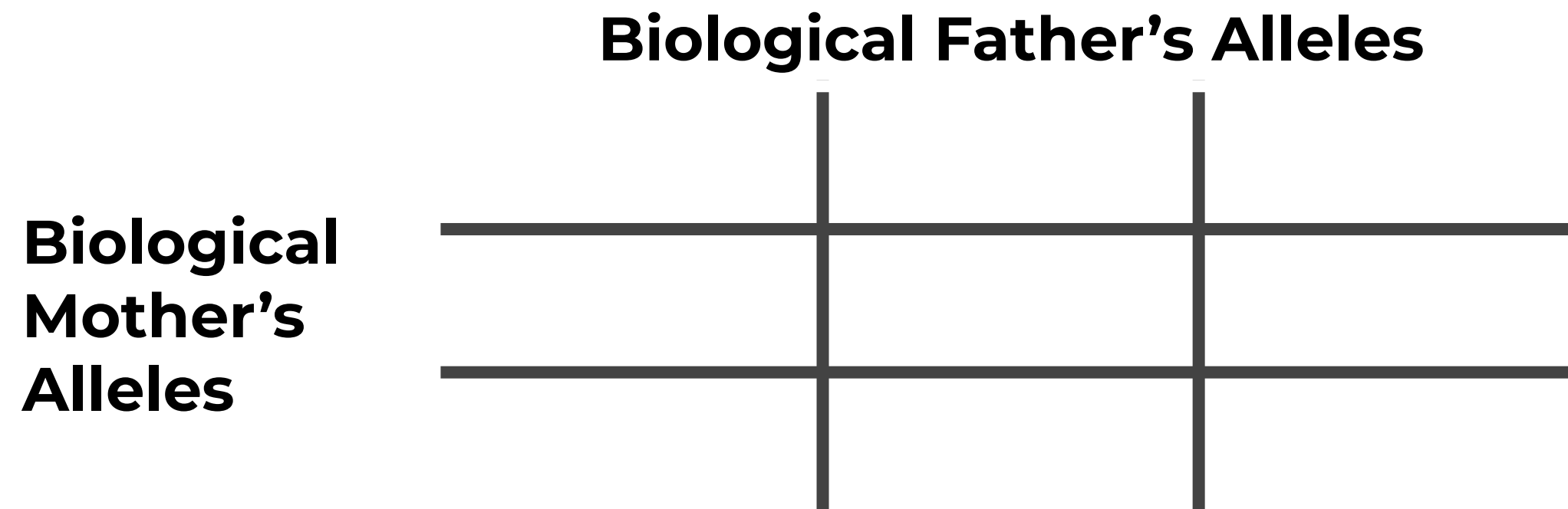


Punnett Squares

A male brown haired (BB) breeds with a red haired female dog (bb)

B = dominant b = recessive

How many will have brown fur?



Definitions match up!

- Match up the keywords to their definitions

1. Allele

2. Homozygous

3. Heterozygous

4. Genotype

5. Phenotype

a) The physical characteristic that is displayed.

b) Alleles for a characteristic are the DIFFERENT

c) Alleles for a characteristic are the SAME

d) Different versions of the same gene

e) The genetic make up - the pair of alleles



Try these on your own

1. Complete the diagram to show the chance of the baby mouse inheriting black fur (black is dominant - B)
2. Draw a diagram to show the chance of the baby mouse inheriting black fur if the mother has brown fur (bb) and the dad has black fur (Bb)
3. Draw a diagram to show the chance of the baby mouse inheriting black fur if both parents have black fur (Bb)

	Mother	
	b	b
Father	B	
	B	



Exam Style Question Practise...

In cats, a single gene controls tail length.

T= long tail, t=short tail.

- 1) If a heterozygous cat is crossed with a homozygous short tailed cat, show the probable offspring.
- 2) If they had a litter of 12 kittens, how many would you expect to have short tails?
- 3) Explain why this may not be the case
- 4) Explain, with the aid of a punnett square, how two long tailed cats could have short tailed offspring.

