Phenotypes

= Physical traits that you can observe

Example:

Height

Blood type

Eye colour

Animal fur patterns

Genotypes

= symbols that represent phenotypes
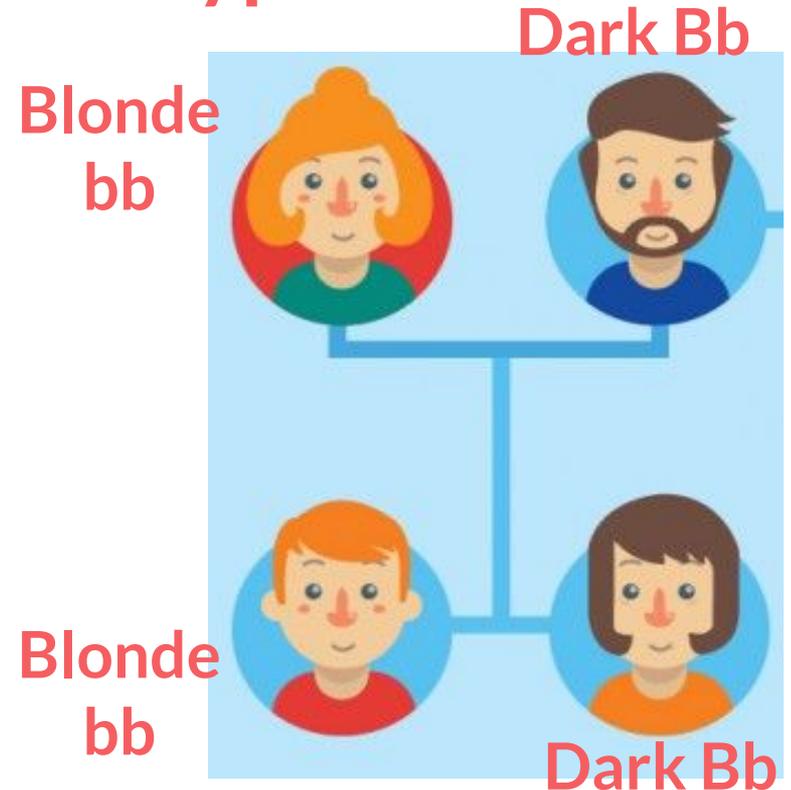
Tall
TT
Tt

Short
tt

Spotted
Ss

Type A blood
I^A i

Type O blood
ii

Writing and interpreting Genotypes

1. Figure out which allele is **dominant** and which one is **recessive**
2. Assign symbols for each trait: use a **capital letter** for dominant and a **lower case** for recessive
3. If the phenotype is purebred or **homozygous**, write **two identical** letter symbols.
4. If the phenotype is hybrid or **heterozygous**, write **one large and one small** letter symbol

Blonde bb

Dark Bb

Blonde bb

Dark Bb

The Goal:

By the end of this practice drill, you should be able to figure out genotypes for different traits, and interpret phenotypes from given genotypes.

Let's go!

What are the genotypes here?

Brown eyes   B

Blue eyes   b

Freckles   F

No freckles   f

Red hair   r

Not red hair   R

bb

Ff or FF

rr

What are the genotypes here?

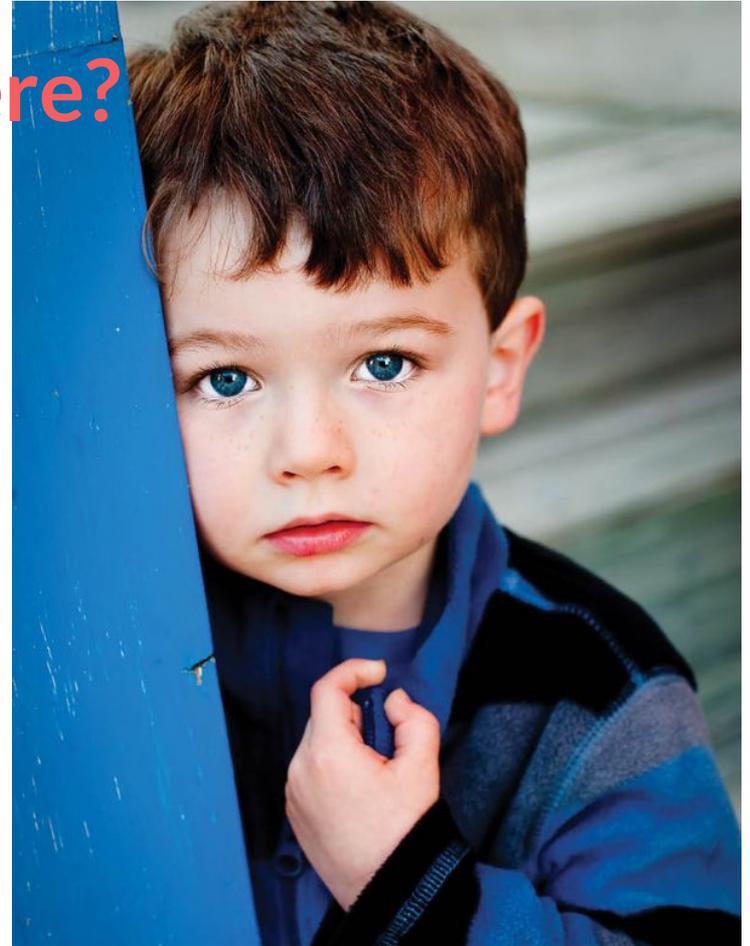Brown eyes   B   **bb**

Blue eyes   b

Freckles   F   **ff**

No freckles   f

Red hair   r   **Rr or RR**

Not red hair   R

What are the genotypes here?

Brown eyes	B
Blue eyes	b

bb

Freckles	F
No freckles	f

ff

Red hair	r
Not red hair	R

Rr or RR

What are the genotypes here?

Floppy ears E
Erect ears e

Ee or EE

Dun markings D
White markings d

Dd or DD

Dark coat C
Pale coat c

Cc or CC

What are the genotypes here?

Floppy ears   E

Erect ears   e

Dun markings   D

White markings d

Dark coat   C

Pale coat   c

Ee or EE

dd

cc

What are the genotypes here?

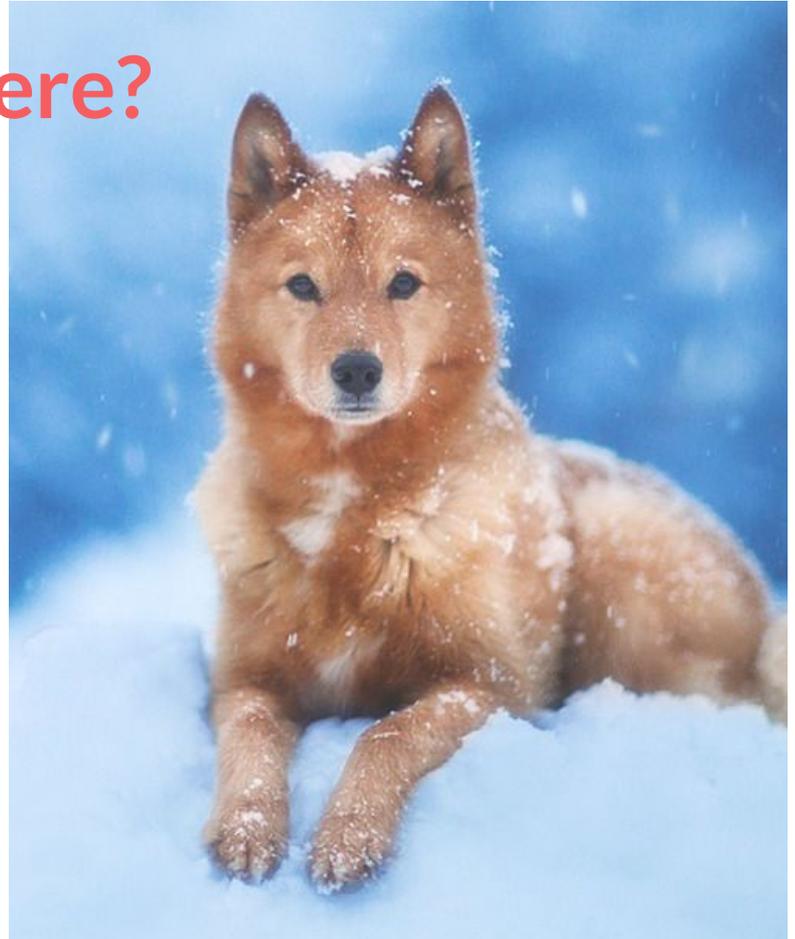Floppy ears   E

Erect ears   e

Dun markings   D

White markings   d

Dark coat   C

Pale coat   c

ee

dd

cc

What are the genotypes here?

Brown feathers B

White feathers b

BB or Bb

Black tail T

Not black tail t

TT or Tt

Brown eggs E

White eggs e

EE or Ee

What are the genotypes here?

Brown feathers B

White feathers b

bb

Black tail   T

Not black tail   t

TT or Tt

Brown eggs   E

ee

White eggs   e

What are the genotypes here?

Brown feathers B

White feathers b

Bb or bb

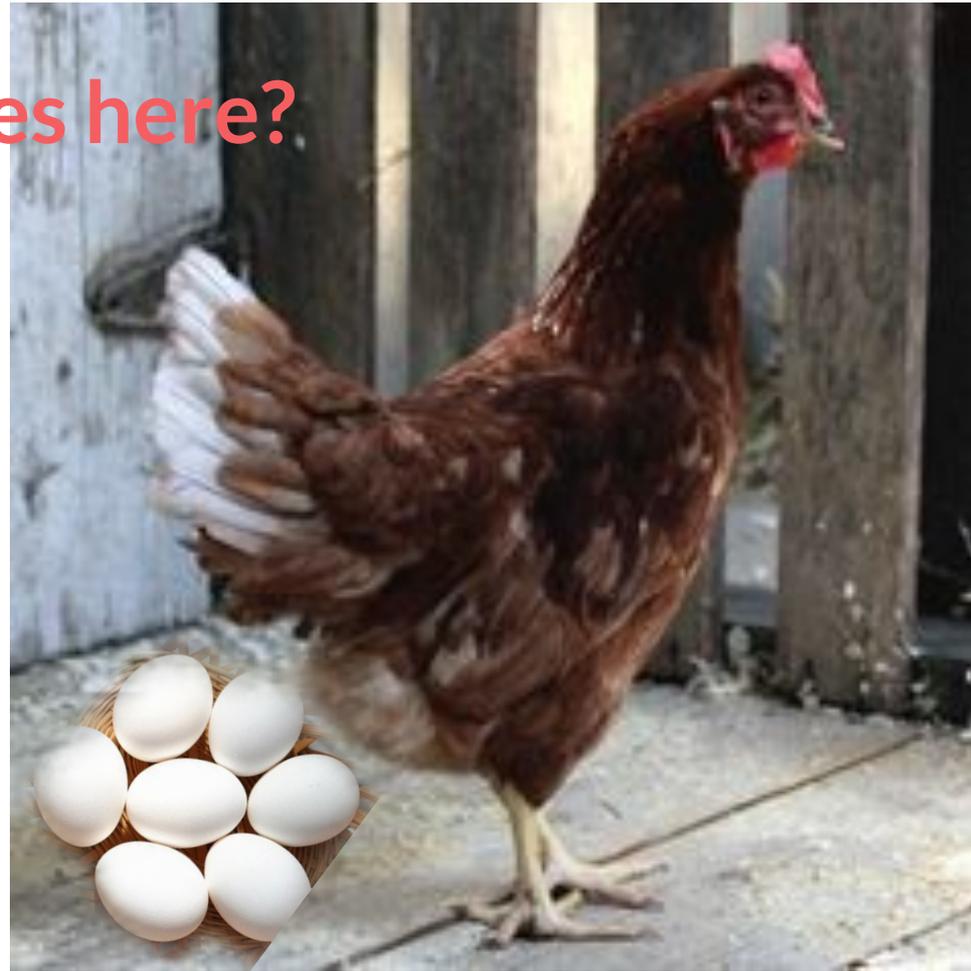Black tail   T

tt

Not black tail   t

Brown eggs   E

ee

White eggs   e

What are the genotypes here?

Tongue curling   **C**   **CC or Cc**

Unable to curl   **c**

Not blonde   **B**

Blonde   **b**   **bb**

What are the genotypes here?

Tongue curling   C

cc

Unable to curl   c

Not blonde   B

BB or Bb

Blonde   b
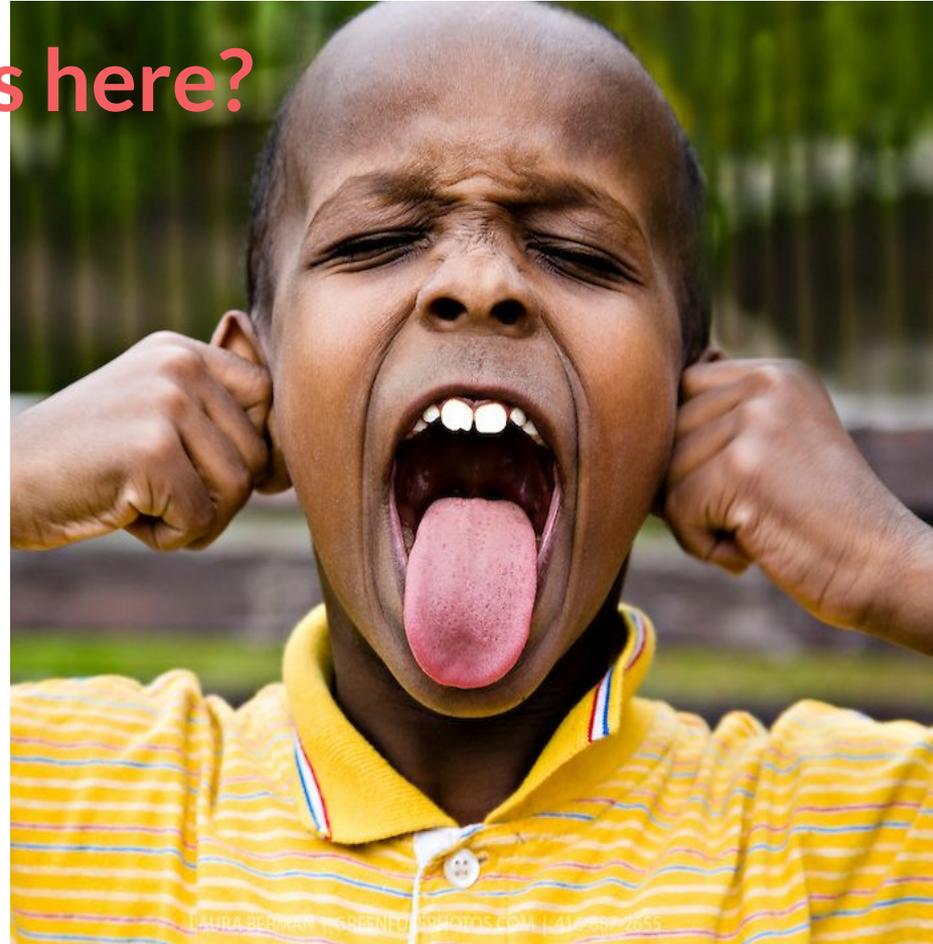
What are the genotypes here?

Tongue curling C **cc**

Unable to curl c

Not blonde B **BB or Bb**

Blonde b

What are the genotypes here?

Parallel Stripes P

Uneven stripes p   **pp**

White spots S

No white spots s   **ss**

Not tortoiseshell T

tortoiseshell t   **TT or Tt**

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What are the genotypes here?

Parallel Stripes P

Uneven stripes p

PP or Pp

White spots S

No white spots s

SS or Ss

Not tortoiseshell T

tortoiseshell t

tt