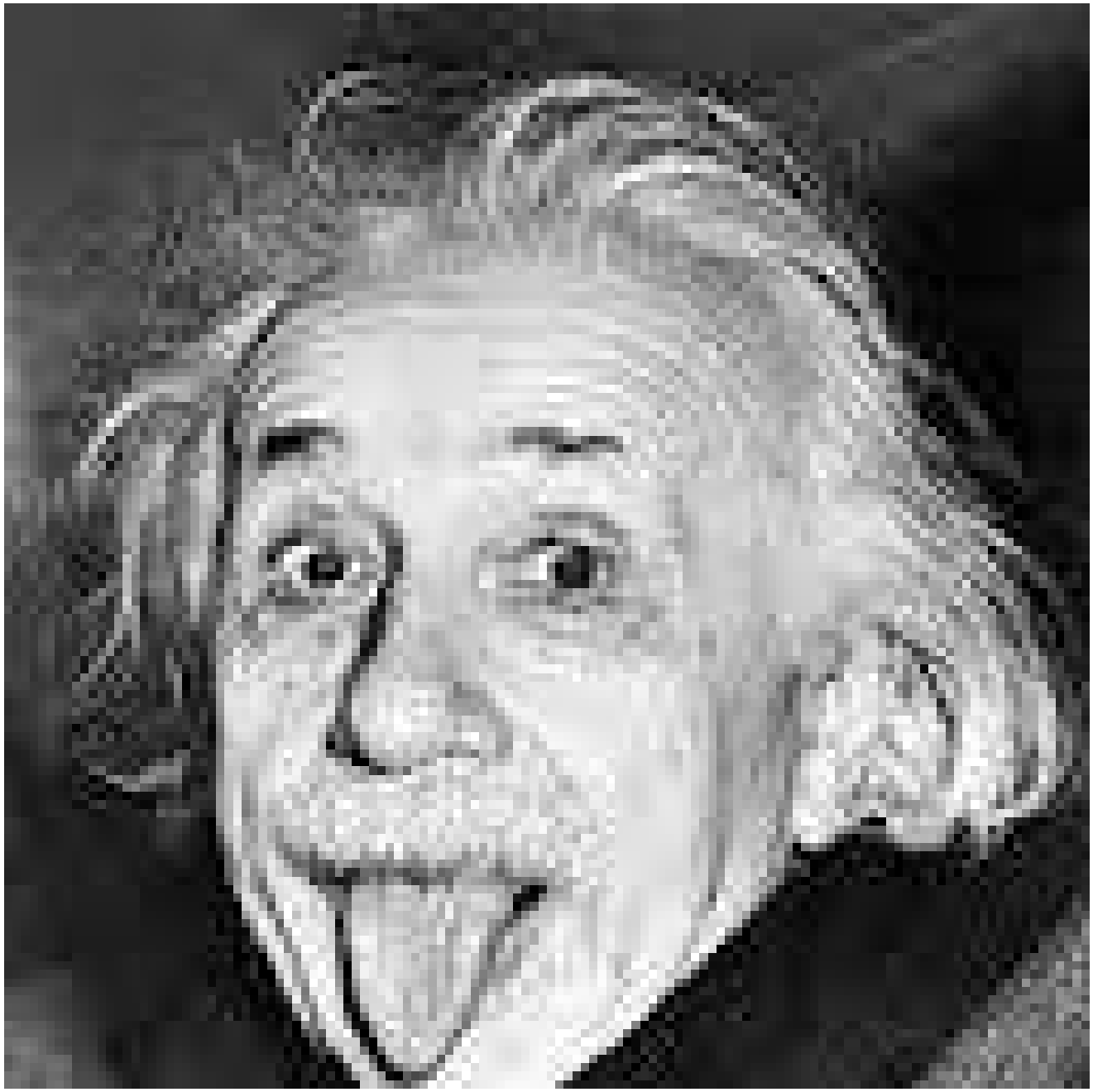
Genetics

Mr. Skirbst

What makes you, *you*?

What makes you, *you*?



What makes you, *you*?

What makes you, *you*?

Can Roll Tongue

Can't Roll Tongue

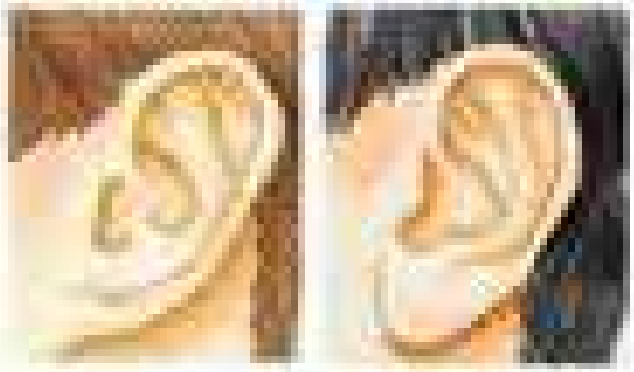
What makes you, *you*?

Attached Earlobes

Detached Earlobes

What makes you, *you*?

What makes you, *you*?



Attached ear lobe Free ear lobe

Widow's peak

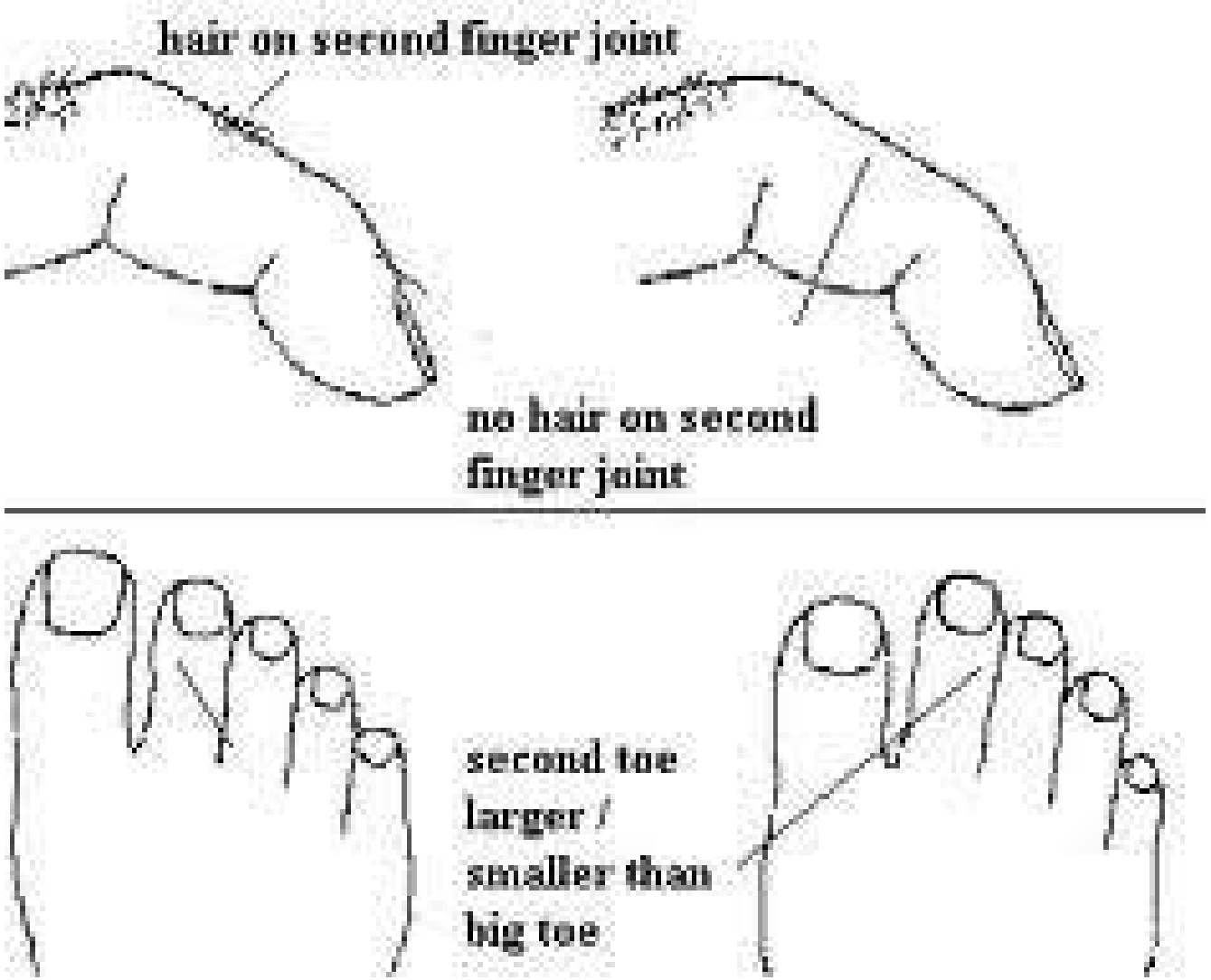
No widow's peak

Cleft chin

No cleft chin

What makes you, *you*?

What makes you, *you*?



Genetic Survey

Trait	*Yes*	*No*	*Dominant trait*
Dark Hair	_____	_____	_____
Dark Eyes	_____	_____	_____
Roll Tongue	_____	_____	_____
Ear lobe attached	_____	_____	_____
Left thumb top	_____	_____	_____
Hairy knuckle	_____	_____	_____
Longer second toe	_____	_____	_____
Widows peak	_____	_____	_____
Chin cleft	_____	_____	_____

Genetics

PROPERTY OF THE
XXL
SKIRBST
FAMILY
XXL
FAMILY

Genetics

the study of heredity

Genetics

the study of **heredity**

Heredity is the passing of traits to offspring

Genetics

the study of **heredity**

Heredity is the passing of **traits** to offspring

Traits are characteristics of an organism (ex. *Hair color, eye color, skin color, etc.*)

GENES

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- units of heredity

GENES

- units of heredity

Dominant – stronger trait "T"

GENES

- units of heredity

Dominant – stronger trait “T”

Recessive – weaker trait “t”

Genetics

Zygote

Genetics

Zygote

Genetics

Zygote – fertilized egg

Genetics

Zygote – fertilized egg

Homozygous (purebred) – Contains all one trait (ex. TT or tt)

1
1

Genetics

Zygote – fertilized egg

Heterozygous (hybrid) – Contains mixed traits (ex. Tt)

WHO'S AWESOME?

You're awesome!

Genetics

Phenotype –

physical appearance

(ex. Hair color)

Genetics

Phenotype –

physical appearance

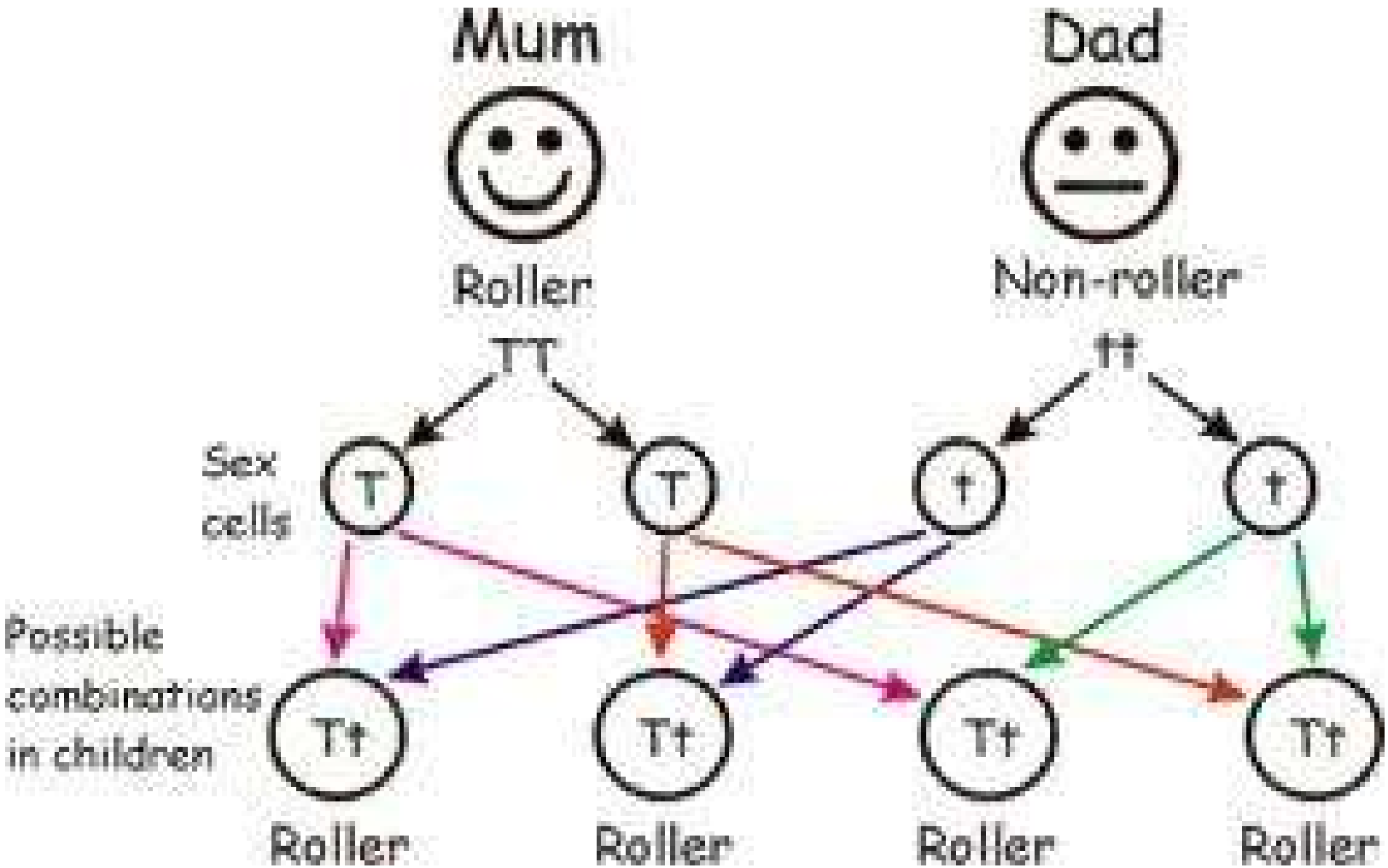
(ex. Hair color)

Genotype –

Genetic makeup

(ex. Tt or TT)

What makes you, *you*?



Probability

Probability

- the possibility (or likelihood) that an event will happen

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- the possibility (or likelihood) that an event will happen

(ex. flipping a coin, lottery, rain, characteristics of offspring)

Probability

Punnett Sc

Probability

Punnett Square:

- used to show possible gene combinations in a cross between two organisms

(shows genetic probability)

Probability

Punnett Square:

Cross between:

****Purebred recessive*** &

****Purebred dominant***

Probability

Punnett Square:

	b	b
B		
B		

Cross between:

****Purebred recessive*** &

****Purebred dominant***

Probability

Punnett Square:

	b	b
B	B b	
B		

Cross between:

*Purebred recessive &

*Purebred dominant

Probability

Punnett Square:

	b	b
B	B b	B b
B	B b	B b

Cross between:

*Purebred recessive &

*Purebred dominant

Produces:

*Offspring that are all ***hybrids***

Probability

Punnett Square:

Cross between:

****Hybrid & Hybrid***

Probability

Punnett Square:

	B	b
B		
b		

Cross between:

****Hybrid & Hybrid***

Probability

Punnett Square:

	B	b
B	BB	
b		

Cross between:

*Hybrid & Hybrid

Probability

Punnett Square:

	B	b
B	BB	Bb
b	Bb	bb

Cross between:

*Hybrid & Hybrid

Produces:

*Offspring possibilities

2 hybrids, 1 purebred dominant, and

1 purebred recessive

1. **Cross** a ***homozygous dominant*** with a ***heterozygous*** organism
2. **Cross** a ***heterozygous*** organism with a ***homozygous recessive***
3. **Cross** a ***homozygous recessive*** with a ***homozygous dominant***
4. **Cross** a ***homozygous recessive*** with a ***homozygous recessive***

Punnett Square

1. Cross a ***homozygous dominant*** with a ***heterozygous*** organism

Punnett Square

2. Cross a ***heterozygous*** organism with a ***homozygous recessive***

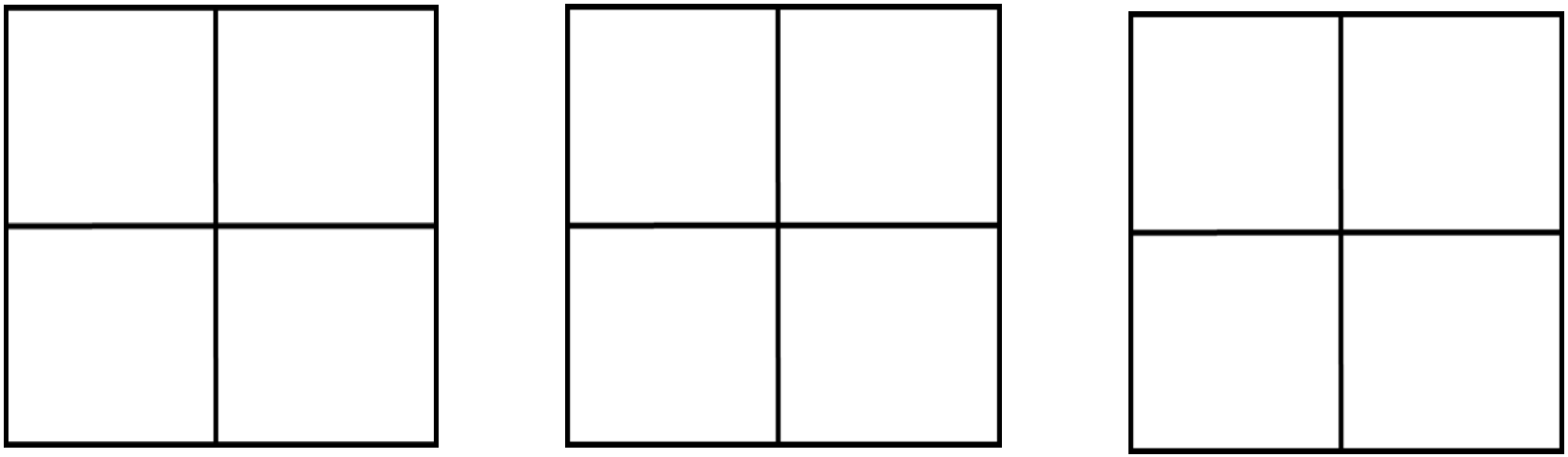
Punnett Square

3. Cross a ***homozygous recessive*** with a ***homozygous dominant***

Punnett Square

4. Cross a ***homozygous recessive*** with a ***homozygous recessive***

Tribbles



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