

Emoji Genetics

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Your task is to breed emojis to study patterns of inheritance, just like Gregor Mendel did by breeding pea plants. Complete the Punnett squares, predict the probability of the offspring inheriting each trait, and then create a baby emoji using the emoji parts. The Emoji Traits table shows the dominant and recessive traits for emojis. The Punnett square and Phenotype Probability chart will turn green when they have both been filled in correctly. When building an emoji, make sure to give them traits that could be inherited from their parents. There are multiple correct answers.

EMOJI BREEDING EXPERIMENT #1



Emoji Traits

Dominant:	Yellow color (Y)	Normal eyes (E)	Tongue (T)	Hand (H)
Recessive:	Blue color (y)	Heart eyes (e)	No tongue (t)	No hand (h)

Dr. GATACAT created Spooner and Wendy in a lab for you to breed and study patterns of inheritance, just like Gregor Mendel did with peas. To get started, complete the Punnett squares and then determine the probability of the offspring inheriting each trait.

1. **Color**

Spooner is homozygous dominant for his yellow color (YY). Wendy has the recessive trait, blue color (yy).

	Y	Y
Wendy y		
y		

Phenotype Probability (%)

Yellow color: _____

Blue color: _____

2. **Eyes**

Spooner and Wendy both have normal eyes and heterozygous genotypes (Ee).

	E	e
Wendy E		
e		

Phenotype Probability (%)

Normal eyes: _____

Heart eyes: _____

3. **Tongue**

Spooner has a heterozygous genotype for his tongue (Tt), but Wendy has the recessive trait of no tongue (tt).

	T	t
Wendy t		
t		

Phenotype Probability (%)

Tongue: _____

No tongue: _____

4. **Hand**

Spooner and Wendy both have a hand with heterozygous genotypes (Hh).

	H	h
Wendy H		
h		

Phenotype Probability (%)

Hand: _____

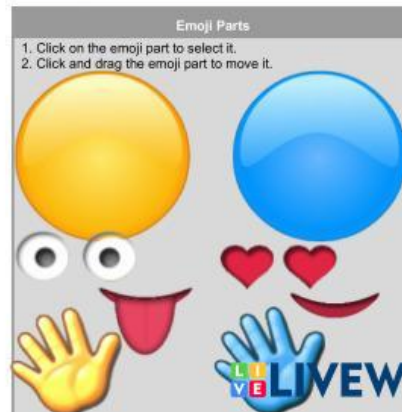
No hand: _____

Spooner and Wendy are excited to become parents! Use the emoji parts on the right to create one of their offspring. For each characteristic, list baby emoji's phenotype and the probability of inheriting that phenotype.

Name the Baby Emoji Here...

Build an emoji baby by moving emoji parts here

Phenotype	Phenotype Probability



LIVEWORKSHEETS

EMOJI BREEDING EXPERIMENT #2



Emoji Traits

Dominant:	Yellow color (Y)	Normal eyes (E)	Tongue (T)	Hand (H)
Recessive:	Blue color (y)	Heart eyes (e)	No tongue (t)	No hand (h)

Dr. GATACAT wanted you to see what happens when you breed two yellow emoji offspring from the first experiment. Clyde and Amelia were selected for you to breed. Complete the Punnett squares and determine the probability of their offspring inheriting each trait.

6. **Face Color**

Clyde and Amelia both have heterozygous genotypes for color (Yy).

	Clyde	
Amelia		

Phenotype Probability (%)

Yellow color: _____

Blue color: _____

7. **Eyes**

Clyde is heterozygous for his normal eyes (Ee). Amelia has the recessive trait, heart eyes (ee).

	Clyde	
Amelia		

Phenotype Probability (%)

Normal eyes: _____

Heart eyes: _____

8. **Tongue**

Clyde has the recessive, no tongue (tt) trait. Amelia has a heterozygous genotype for her tongue (Tt).

	Clyde	
Amelia		

Phenotype Probability (%)

Tongue: _____

No tongue: _____

9. **Hand**

Clyde has a homozygous dominant genotype for his hand (HH), and Amelia has the recessive trait of no hand (hh).

	Clyde	
Amelia		

Phenotype Probability (%)

Hand: _____

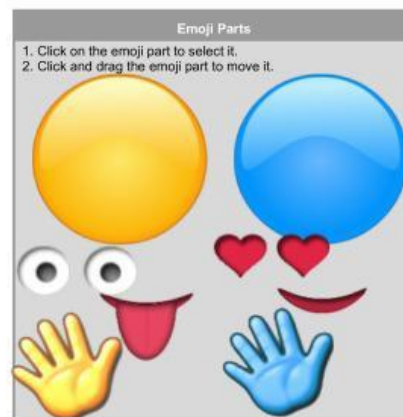
No hand: _____

Clyde and Amelia are thrilled to become parents, and Spooner and Wendy are over the moon about having a grandchild! Create an offspring of Chaz and Bev. For each characteristic, list baby emoji's phenotype and the probability of inheriting that phenotype.

Name the Baby Emoji Here...

Build an emoji baby by moving emoji parts here

Phenotype	Phenotype Probability



EMOJI BREEDING EXPERIMENT #3



Emoji Traits

Dominant:	Yellow color (Y)	Normal eyes (E)	Tongue (T)	Hand (H)
Recessive:	Blue color (y)	Heart eyes (e)	No tongue (t)	No hand (h)

Most of the emojis born in Dr. GATACAT's lab have been yellow. Chaz and Bev, however, are both blue. Dr. GATACAT selected these offspring of the second experiment for you to breed. Complete the Punnett squares and determine the probability of their offspring inheriting each trait.

11.

Face Color

Chaz and Bev both have homozygous recessive genotypes for their color.

	Chaz	
Bev		

Phenotype Probability (%)

Yellow color: _____

Blue color: _____

12.

Eyes

Chaz is homozygous recessive and Bev has a heterozygous genotype for eyes.

	Chaz	
Bev		

Phenotype Probability (%)

Normal eyes: _____

Heart eyes: _____

13.

Tongue

Chaz and Bev both have heterozygous genotypes for their tongues.

	Chaz	
Bev		

Phenotype Probability (%)

Tongue: _____

No tongue: _____

14.

Hand

Chaz and Bev have one child that is homozygous dominant and one child that is homozygous recessive.

	Chaz	
Bev		

Phenotype Probability (%)

Hand: _____

No hand: _____

Chaz and Bev are ready to have their third child (and great grandchild of Spooner and Wendy). Create an offspring of Chaz and Bev. For each characteristic, list baby emoji's phenotype and the probability of inheriting that phenotype.

Name the Baby Emoji Here...

Build an emoji baby by moving emoji parts here

Phenotype	Phenotype Probability

