

TAKE A SPLASH INTO THE GENE POOL

NAME _____ DATE _____

All people have genetic characteristics that are passed down to their children. The actual process is a lot more complicated than the simulated lab below. Using the following rules we can simulate how genes mix to create a human being.

Question:

What happens when we combine dominant genes with recessive genes?

Hypothesis:

1. Now let's do our experiment!

Let's gather information about genes.

There are dominant genes. Define _____.

Then there are recessive genes. Define _____.

In our experiment, Dominant and recessive genes will be written:

Dominant Gene = A

Recessive Gene = a

2. Let's study some possible outcomes of what will happen when we combine dominant characteristics with recessive characteristics.

$A+A = AA$ the offspring will have the dominant characteristic

$A+a = Aa$ or aA the offspring will have the dominant characteristic

$a+a = aa$ the offspring will have the recessive trait

CHARACTERISTICS

A = attached ear lobe

B = big nose

C = cleft chin

D = droopy eyes

E = not an ear wiggler

F = freckles

T = tongue roller

W = widow's peak

a = not attached ear lobe

b = not a big nose

c = not a cleft chin

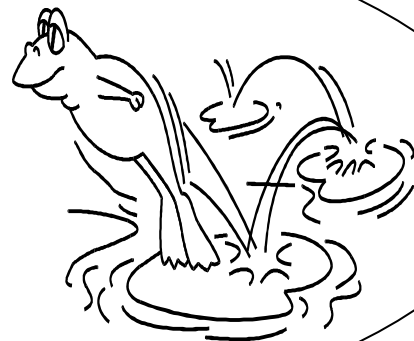
d = not droopy eyes

e = ear wiggler

f = not freckles

t = not a tongue roller

w = not a widow's peak



3. We need to look at our genetic donors. Who are some of your genetic donors? _____

SAMPLE GENETIC DONORS	
<u>FEMALE</u>	<u>MALE</u>
1. A b C d e F t W	1. a b c D e F T w
2. a B C d E f T w	2. A B C d E f T w
3. A b c D e f T w	3. A b c d e F t w

4. Using the genetic donors above, create *five* people. A sample has been done for you.

1. (Sample)	Female 1 + Male 2	AA	bB	CC	dd	eE	Ff	tT	Ww
2.									
3.									
4.									
5.									

5. List the possible outcomes for two of your people. (Use back of paper if needed)

6. Sort your information from the created people in number four.

How many have....

_____ = attached ear lobe

_____ = not attached ear lobe

_____ = big nose

_____ = not a big nose

_____ = cleft chin

_____ = not a cleft chin

_____ = droopy eyes

_____ = not droopy eyes

_____ = not an ear wiggler

_____ = ear wiggler

_____ = freckles

_____ = not freckles

_____ = tongue roller

_____ = not a tongue roller

_____ = widow's peak

_____ = not a widow's peak

7. Graph your results.



Now, we will DRAW our created person.

First, gather your materials:

Construction paper
Crayons or drawing pencils

Second, look at your hand out, "Take a Splash in the Gene Pool". Find the fourth step where you created four people.

Third, find ONE person you want to draw.

Fourth, draw your person on your construction paper and color the drawing.

Fifth, present your drawing to the class. Be prepared to tell which male and female figure you combined and point out the outcomes you discovered (big nose, ear wiggler, etc)





For fun!



Now, let's take the idea of dominant and recessive genes one step further to create a monster that may look a little different than the human being you created before.

Dominant	Recessive
A=Twenty Arms	a=no arms
B=Big giant bones	b=no bones
E=Big bat ears	e=no ears
F=Furry	f=not furry
G=Green hair	g=not green hair
L=Four legs	l=not four legs
M=Many extra teeth	m=no teeth
N=Nose with extra nostril	n=no nose
R=Red striped skin	r=not red striped skin
S-Slimy skin	s=not slimy skin
T=Third eye	t=not a third eye
W=Wings	w=no wings

Genetic Donors

Female A	A	b	E	f	g	L	M	n	R	S	t	W
Female B	a	b	E	F	G	l	m	N	r	S	T	w
Male A	A	B	e	f	g	L	M	N	R	s	T	W
Male B	A	B	E	F	G	L	M	N	R	s	T	W

Let's Create!

Using the genetic donors above, combine one female and one male in the table below. Then, do it again.

Female ___												
Male ___												
Female ___												
Male ___												

Now that you have two monsters created, let's draw them! Use a piece of paper or construction paper to draw your created monsters.