Let's Make a Baby!

Congratulations on your new arrival! You and your partner will be welcoming a new addition any moment now. Instead of conceiving in the usual manner you will be tossing coins to determine the characteristics of your child. The coins will represent gametes (sperm and egg).

In all of the characteristics listed below, **heads** represents the **dominant allele**, **tails** represents the **recessive allele**. There are 3 possible genotypes for each toss. Notice that not all characteristics show complete dominance; some are examples of incomplete dominance and some characteristics are controlled by multiple genes (polygenic). You will determine polygenic traits separately.

Materials *(per group)*
3 textbooks
2 coins

Procedure

1. Place the textbooks on the laboratory table so that they form a triangular well.

2. Determine which partner will toss for the female and which will toss for the male. Remember that there are two genes per trait.

3. Have the partner who is representing the male flip a coin into the well to determine the sex of the baby. If the coin lands heads up, the baby is a female. If the coin lands tails up, the baby is a male. Record the sex of the baby in the blank at the top of the page with Table 1.

4. For all the coin tosses you will now make, **heads will represent the dominant allele and tails will represent the recessive allele**.

5. You and your partner should now flip your coins into the well at the same time to determine the phenotype of the first trait, the shape of the face. Note: *The coins should be flipped only once for each trait.*

6. Continue to flip the coins for each trait listed in the table. After each flip, record the genotype and phenotype of your baby in the corresponding row of the table. (Note: Some information on these traits has been simplified. Some listed traits are actually produced by two or more genes.)

7. Using the recorded traits, draw the facial features for your baby in the space provided.

Parents_____

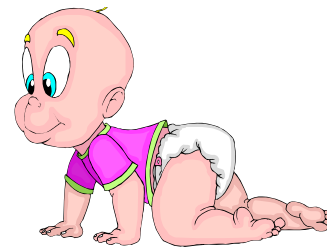**Sex of our baby_____Our baby's name_____**

Time & Date of Birth_____
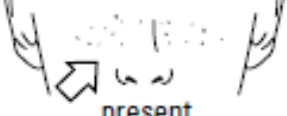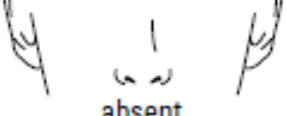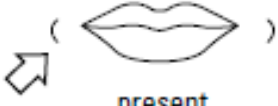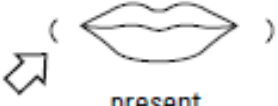
Table 1

TRAIT	OUR BABY'S GENOTYPE	OUR BABY'S PHENOTYPE
Shape of face		
Cleft in Chin		
Texture of Hair		
Widow's Peak		
Spacing of Eyes		
Shape of Eyes		
Position of Eyes		
Size of Eyes		
Length of Eyelashes		
Shape of Eyebrows		
Position of Eyebrows		
Size of Nose		
Shape of Lips		
Size of Ears		
Size of Mouth		
Freckles		
Dimples		
Eye Color		
Hair Color		
Skin Color		

Traits	Dominant (both heads)	Hybrid (one head, one tail)	Recessive (both tails)
Shape of face	round RR	round Rr	Square rr
Cleft in chin	present CC	present Cc	absent cc
Texture of hair	curly HH	wavy Hh	straight hh
Widow's peak	present WW	present Ww	absent ww
Spacing of eyes	close together EE	medium distance Ee	far apart ee
Shape of eyes	almond AA	almond Aa	round aa
Position of eyes	straight SS	straight Ss	slant upward ss
Size of eyes	large LL	medium Ll	small ll

Traits	Dominant (both heads)	Hybrid (one head, one tail)	Recessive (both tails)
Length of eyelashes	long *LL*	long *Ll*	short *ll*
Shape of eyebrows	bushy *BB*	bushy *Bb*	fine *bb*
Position of eyebrows	not connected *NN*	not connected *Nn*	connected *nn*
Size of nose	large *LL*	medium *Ll*	small *ll*
Shape of lips	thick *TT*	medium *Tt*	thin *tt*
Size of ears	large *LL*	medium *Ll*	small *ll*
Size of mouth	large *LL*	medium *Ll*	small *ll*
Freckles	present *FF*	present *Ff*	absent *ff*
Dimples	present *DD*	present *Dd*	absent *dd*

Eye color, hair color, and skin color are more complicated than the characteristics already listed. These traits are considered to be polygenic (controlled by many genes).

EYE COLOR Each of you toss your coin 3 times. Add up the total for the eye color.	6 Dominant (HHHHHH) Dark Brown	5 Dominant (HHHHHT) Brown	4 Dominant (HHHHTT) Light Brown	3 Dominant (HHHTTT) Hazel	2 Dominant (HHTTTT) Blue Green	1 Dominant (HTTTTT) Blue	0 Dominant (TTTTTT) Light Blue

HAIR COLOR Each of you toss your coin 3 times. Add up the total for the hair color.	6 Dominant (HHHHHH) Black	5 Dominant (HHHHHT) Dark Brown	4 Dominant (HHHHTT) Brown	3 Dominant (HHHTTT) Light Brown	2 Dominant (HHTTTT) Dark Blonde	1 Dominant (HTTTTT) Blonde	0 Dominant (TTTTTT) "Platinum" Blonde

SKIN COLOR Each of you toss your coin 3 times. Add up the total for the skin color.	6 Dominant (HHHHHH) Darkest Brown	5 Dominant (HHHHHT) Medium Brown	4 Dominant (HHHHTT) Dark Tan	3 Dominant (HHHTTT) Medium Tan	2 Dominant (HHTTTT) Light Tan	1 Dominant (HTTTTT) Fair Skin	0 Dominant (TTTTTT) Very Pale Skin

Parents_____

Baby's Gender:_____ **Our baby's name:**_____