

Name: _____ Date: _____ Period: _____

LET'S MAKE A FACE: EPIGENETICS QUESTIONS

For each scenario, record the environmental factors and lifestyle choices that cause changes the health and appearance of your child as an adult.

Mom's Pregnancy Diet

Whole Food:

Junk Food/Starvation:

Mom's Stress During Pregnancy

Win the Lottery:

Job Loss:

Child's Life Choices and Environment

Nutrition

Whole Food:

Junk Food:

Smoking

Non-smoking parents:

Parent smokes:

Air Quality

Country:

City:

Sleep

Regular Work Schedule:

Shift Work:

Exercise

Athlete:

Couch Potato:

Chronic Stress

Works at Disneyland:

Air-Traffic Controller:

Your Baby's Environment and Epigenome*

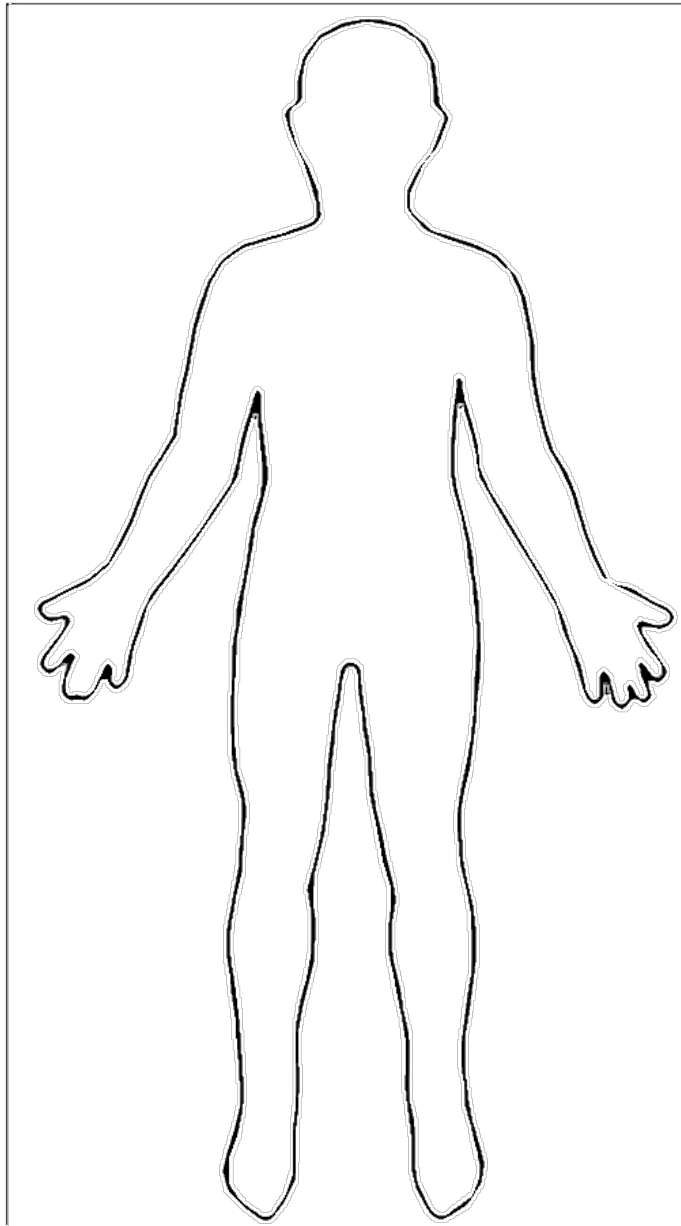
Drop each Scenario Card 3 times and circle the number of times it landed on the negative-side. Circle the child's epigenetic result.

Environmental Factor	# of (-) Results out of 3 Drops	Lifestyle	Child's Epigenetic Result
Mom's Diet During Pregnancy	0 - 1	Whole Food	Healthy
	2		At Risk
	3	Junk Food/Starvation	Obesity Small Organs
Mom's Stress During Pregnancy	0 - 1	Win the Lottery	Healthy
	2		At Risk
	3	Husband's Job Loss	Malformed and Inefficient Organs
Nutrition	0 - 1	Whole Food	Healthy
	2		At Risk
	3	Junk Food	Obesity
Smoking	0 - 1	Non-smoking Parents	Healthy
	2		At Risk
	3	Parent Smokes	Asthma
Air Pollution	0 - 1	Country	Healthy
	2		At Risk
	3	City	Cancer
Sleep	0 - 1	Regular Schedule	Healthy
	2		At Risk
	3	Shift Work	Breast Cancer
Exercise	0 - 1	Athlete	Healthy
	2		At Risk
	3	Couch Potato	Heart Disease Depression
Chronic Stress	0 - 1	Works at Disneyland	Healthy
	2		At Risk
	3	Air-Traffic Controller	Heart Disease Hair Loss

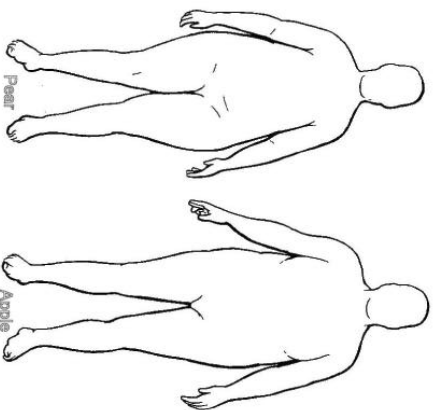
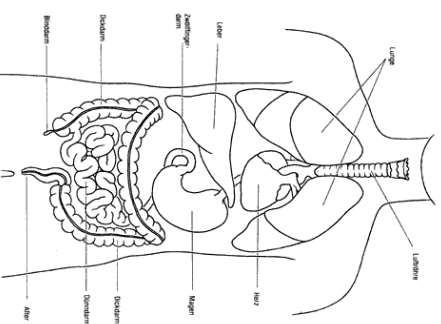
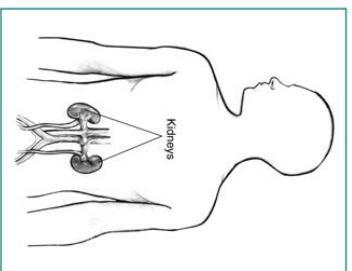
Child in Adulthood

Your child's name _____

Draw your child's organs, body shape, and face below taking into account the epigenetics they have acquired over a lifetime. For instance if they have become obese be sure to add the weight to the body outlined below and if they have smaller organs or cancer be sure to show the effects inside the body.



Drawing Aids



LET'S MAKE A FACE: POST-QUESTIONS

Answer the following questions now that you have completed this project.

1. What are polygenic traits? Give an example of how they work.
2. What is epigenetics? Give an example of how a person's physical traits are not determined by DNA alone.
3. This assignment was a simulation, but how much like real human genetics do you think this was? Why?
4. "Nature vs. Nurture" is a debate that is still ongoing – how much of what makes us who we are is determined by our genes or by our environment? After having completed this assignment, what is your opinion on this issue? How much influence does each hold over our traits? Explain your stance.