

# Polygenic Inheritance Activity



Image captured from [www.mayoclinic.com/health/medical/IM01495](http://www.mayoclinic.com/health/medical/IM01495)

# Background Information

- Simple dominance is inheritance based on two alleles, or forms of a trait, determined by one gene.
- Polygenic inheritance includes traits that are controlled by two or more genes. Skin, eye, and hair color are all traits that are controlled by at least three genes.
- Variations in the allele combinations from the genes cause variations in pigmentation.

# Flipping Coins

Determine the varieties of skin color for six individuals. To do this activity, you need three pennies. Each penny represents one gene. Heads is the dominant allele and tails is recessive. Flip each penny twice for each of the three genes controlling skin pigmentation. Record the results.

## Key

- AABBCc – Dark brown
- AaBBCC
- AABbCC } Medium browns
- AABBCc
- aaBBCC
- AAbbCC } Light browns
- AABBcc
- AaBbCC
- AABbCc } Dark tans
- AaBBCCc

- AaBbCc
- aaBbCC
- AabbCC } Medium tans
- AABbcc
- aaBBCCc
- AAbbccc
- aaBBcc
- aabbCC } Light tans
- aaBbCc
- AaBbcc
- AabbCc

- Aabbcc
- aaBbcc } Fair
- aabbCc
- aabbcc – Albino



Image captured from [www.devbio.biology.gatech.edu](http://www.devbio.biology.gatech.edu).

# Example of Data Chart

Polygenic Inheritance Data Table Skin Pigmentation		
Trial	Genotype	Phenotype
1		
2		
3		
4		
5		
6		