ACTIVITY 6: PREDICT THE PHENOTYPES & GENOTYPES OF SONIA'S CHILDREN

Directions: Work individually or with a partner to complete the Punnett square and answer the questions in writing. Then, debrief as a class.

1. ***When Sonia grew up, she married a man who <u>also</u> has sickle cell trait (is heterozygous).***

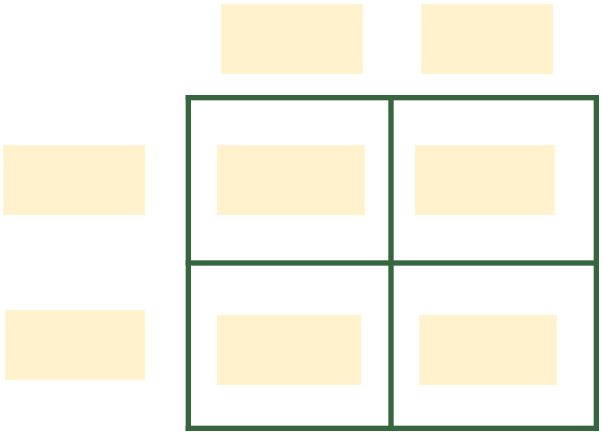
   a. ***What is <u>Sonia's</u> genotype?***

   ☐ AA ☐ AS ☐ SS

   b. ***What is <u>Sonia's husband's</u> genotype?***

   ☐ AA ☐ AS ☐ SS

2. ***Complete the Punnett square using Sonia and her husband's genotypes.***



→ ***heterozygous:*** *having two different alleles for a certain gene*

→ ***genotype:*** *the combination of alleles for a certain trait; for example AA or Aa*

→ ***phenotype:*** *an expressed trait (shown characteristic)*

REMINDER:

$\frac{1}{4}$ = 25%

$\frac{2}{4}$ = 50%

$\frac{3}{4}$ = 75%

$\frac{4}{4}$ = 100%

3. ***Determine** (figure out) **the probability** (chance) **of Sonia's child having each phenotype** (shown trait).*

   → *Hint: Look at the phenotype and genotype table on page 3.*

   a. ***Normal blood cells*** ____ %

   b. ***Sickle cell <u>trait</u>*** ____ %

   c. ***Sickle cell <u>anemia</u>*** ____ %

REMINDER:
- AA = normal blood cells
- AS = sickle cell trait
- AA = sickle cell anemia