

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 also has sickle cell trait (is heterozygous).

a. What is Sonia's genotype?

☐ AA

☐ AS

☐ SS

b. What is Sonia's husband's 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 trait

%

c. Sickle cell anemia

%

REMINDER:

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