

## Mendelian Genetics - real life application

### **Goals:**

- Make mendelian genetics relevant
- predict multiple offspring probability
- explain dynamic between sickle cell anemia and malaria

### **Mission:**

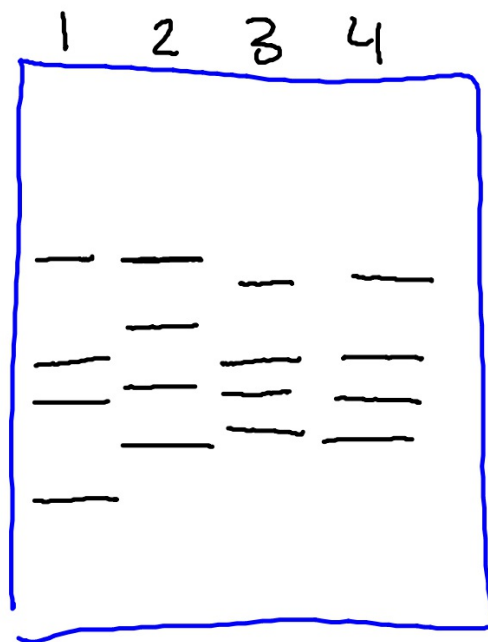
- Complete pg's. 1-4 working as a team

1 - Mr. Redi

2 - Mr. Sutton

3 - Mr. Jensen

4 - Crime  
Scene  
DNA



## materials

- 1 cup

- 10 mL salt solution / saline

- 1 toothpick

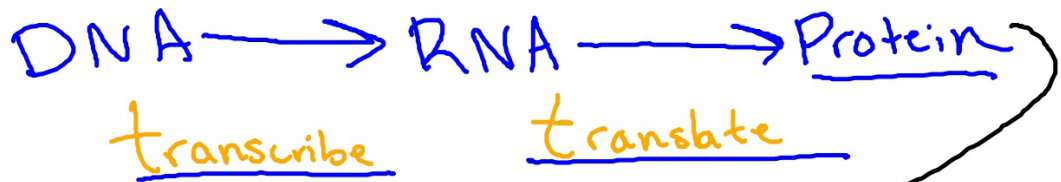
- 1 test tube)

- 1 beaker of soap solution (apple)

- 1 beaker of ethanol

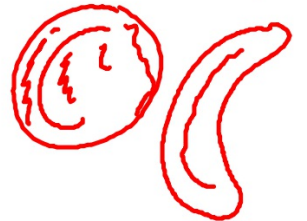
- 2 stir rods

each person needs



- hemoglobin - protein - transports O<sub>2</sub>.

↓  
Don't work so good



$Aa$  - Blue hair       $aa$  - pink

$A$  - Blue hair (dom)

$a$  - pink hair (rec)

$AS$

$A$  - Normal Allele

$S$  - mutated allele

$AA$  - Normal  
blood

\*  $AS$  - Carrier

don't have sickle cell

$SS$  - Sickle  
cell  
anem.

AA - mom

A	AA	AA	AA - 50% (1/2)
S	AS	AS	<u>AS</u> - 50% (1/2)

dad

$\frac{1}{4} + \frac{1}{4}$   
 $= \frac{2}{4} = \frac{1}{2}$

$\frac{1}{2} \cdot \frac{1}{4} \cdot \frac{1}{2}$

Chance 4 kids w/ AS?

$$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16}$$