

## Hi there!

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I spend countless hours writing, researching, editing and generating graphics/charts for each question. I want to continue creating useful content for you to use - however, I also want to ensure my work is fairly compensated.

Therefore, below are the terms and conditions for use of our materials.

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- Distributing and/or posting our content online (for example, on social media or a blog).

Thank you for supporting us. And, we look forward to helping you with your teaching practice. Please feel free to reach out to us if you have any questions or suggestions.

Sincerely,

Kent  
REAL Science Challenge Founder  
Science Department Head (Burnaby South Secondary)

Mr. Lui

Name: \_\_\_\_\_

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Block: \_\_\_\_\_

### Quiz - Inheritance

| Curricular Skill  | Emerging | Developing | Proficient | Extending |
|-------------------|----------|------------|------------|-----------|
| Process & Analyze |          |            |            |           |

#### Emerging Question: Most basic info

|              | Dominant Allele | Symbol | Recessive Allele | Symbol |
|--------------|-----------------|--------|------------------|--------|
| Seed length  | Long            | L      | Short            | l      |
| Seed texture | Wrinkled        | W      | Smooth           | w      |
| Seed color   | Yellow          | Y      | White            | y      |
| Seed pattern | Ribbed          | R      | Grooved          | r      |

| Description                           | Phenotype | Genotype |
|---------------------------------------|-----------|----------|
| Heterozygous for seed length          |           |          |
|                                       |           | YY       |
|                                       |           | Rr       |
| Homozygous recessive for seed texture |           |          |

Developing Question: Standard problem

In guinea pigs, the allele for short hair (H) is dominant while the allele for long hair is recessive (h). A heterozygous short haired guinea pig has babies with a long haired guinea pig. Assuming the fur length is not sex-linked and demonstrates complete dominance, answer the following questions. SHOW YOUR WORK in the form of a punnett square.

|  |  |
|--|--|
|  |  |
|  |  |

- (a) What is the percentage of possible genotypes for the babies?
  
- (b) What is the percentage of possible phenotypes for the babies?

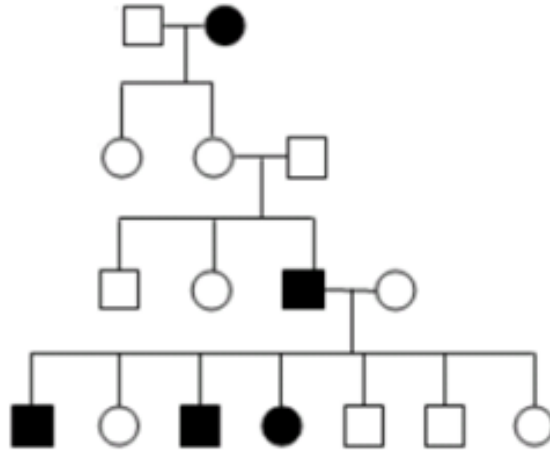
Proficient Question: Standard problem with some advanced details

Based on the information in the table below, which men (or man) could not be the father of the baby? Justify your answer with a Punnett square.

| Name   | Blood Type |
|--------|------------|
| Mother | Type A     |
| Baby   | Type B     |
| Brad   | Type O     |
| Matt   | Type AB    |
| Ryan   | Type A     |
| George | Type B     |

Excelling Question: Relevant application based on standard problems

Consider the following pedigree:



Is this trait recessive or dominant? \_\_\_\_\_

Is this trait autosomal or sex-linked? \_\_\_\_\_

Show your work above (write in genotypes for individuals on the pedigree) and provide an explanation below.

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