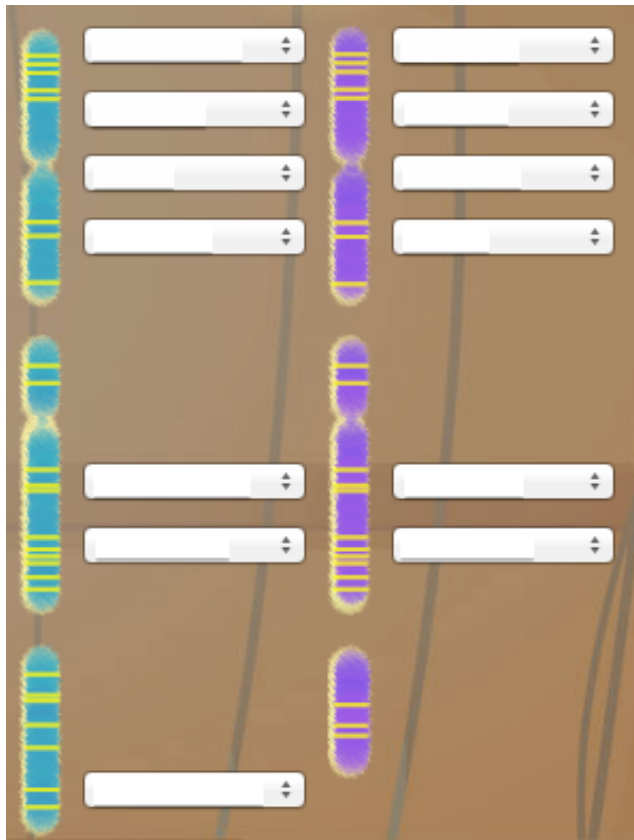


**Challenge 1: Record how you determine the unknown alleles of the female drake.**

1. For the female drake you were given, circle the version of each trait she shows.

My female drake showed the following traits:	Short tail	Kinked tail	Long tail
	Metallic	Non metallic	
	Wings	No wings	
	Horns	No horns	
	Forelimbs	No forelimbs	
	Hindlimbs	No hindlimbs	
	Nose spike	No nose spike	

2. Write in the way you set the male drake's alleles.



Case 10\_Assessment

3. Circle the allele combination you determined for the female for each trait by breeding her to the male described above.

- |    |  |    |  |
|----|--|----|--|
| a. | Kinked tail/Kinked tail<br>Kinked tail/Short tail<br>Long tail/Kinked tail<br>Long tail/Long tail<br>Long tail/Short tail<br>Short tail/Short tail | b. | Metallic/Metallic<br>Metallic/Non metallic<br>Non metallic/ Non metallic   |
| c. | No wings/No wings<br>Wings/No wings<br>Wings/Wings   | d. | Horns/Horns<br>No horns/Horns<br>No horns/No horns                         |
| e. | Forelimbs/Forelimbs<br>Forelimbs/No forelimbs<br>No forelimbs/No forelimbs   | f. | Hindlimbs/Hindlimbs<br>Hindlimbs/No hindlimbs<br>No hindlimbs/No hindlimbs |
| g. | No nose spike/No nose spike<br>Nose spike/No nose spike<br>Nose spike/Nose spike   |    |  |

4. For each of the seven traits, explain how breeding the female and male led you to make the choices you circled in #3.

**Challenge 2:** For each trial you will record what the target drake looked like and how you set the parents' alleles to match it.

**Trial 1**

1. Circle the traits the target drake shows.

Kinked tail                      Metallic                      Wings                      Horns  
Long tail                      Non-metallic                      No wings                      No horns  
Short tail

Forelimbs                      Hindlimbs                      Nose spike  
No forelimbs                      No hindlimbs                      No nose spike

2. Fill in the table with the allele combinations you set for each parent's traits before you bred them to match the target described above.

<b>Trait</b>	<b>Mother's Alleles</b>	<b>Father's Alleles</b>
Tail		
Metallic		
Wings		
Horns		
Forelimbs		
Hindlimbs		
Nose spike		

3. Give a brief, but specific explanation of why you thought this allele combination would work.

## Case 10\_Assessment

### Trial 2

1. Circle the traits the target drake shows.

Kinked tail                      Metallic                      Wings                      Horns  
Long tail                      Non-metallic                      No wings                      No horns  
Short tail

Forelimbs                      Hindlimbs                      Nose spike  
No forelimbs                      No hindlimbs                      No nose spike

2. Fill in the table with the allele combinations you set for each parent's traits before you bred them to match the target described above.

<b>Trait</b>	<b>Mother's Alleles</b>	<b>Father's Alleles</b>
Tail		
Metallic		
Wings		
Horns		
Forelimbs		
Hindlimbs		
Nose spike		

3. Give a brief, but specific explanation of why you thought this allele combination would work.

## Case 10\_Assessment

### Trial 3

1. Circle the traits the target drake shows.

Kinked tail                  Metallic                  Wings                  Horns  
Long tail                  Non-metallic                  No wings                  No horns  
Short tail

Forelimbs                  Hindlimbs                  Nose spike  
No forelimbs                  No hindlimbs                  No nose spike

2. Fill in the table with the allele combinations you set for each parent's traits before you bred them to match the target described above.

<b>Trait</b>	<b>Mother's Alleles</b>	<b>Father's Alleles</b>
Tail		
Metallic		
Wings		
Horns		
Forelimbs		
Hindlimbs		
Nose spike		

3. Give a brief, but specific explanation of why you thought this allele combination would work.

Case 10\_Assessment

**Trial 4**

1. Circle the traits the target drake shows.

- |              |              |               |          |
|--------------|--------------|---------------|----------|
| Kinked tail  | Metallic     | Wings         | Horns    |
| Long tail    | Non-metallic | No wings      | No horns |
| Short tail   |              |               |          |
| Forelimbs    | Hindlimbs    | Nose spike    |          |
| No forelimbs | No hindlimbs | No nose spike |          |

2. Fill in the table with the allele combinations you set for each parent's traits before you bred them to match the target described above.

<b>Trait</b>	<b>Mother's Alleles</b>	<b>Father's Alleles</b>
Tail		
Metallic		
Wings		
Horns		
Forelimbs		
Hindlimbs		
Nose spike		

3. Give a brief, but specific explanation of why you thought this allele combination would work.