

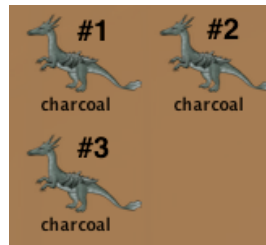
Case 8: Predict-Explain-Observe (A)

**Challenge 2: High Tail It...**

You must determine the tail allele combination of each mother drake. If your teacher has you submit your answer in the journal (DJG+ button in Geniverse), type “Case 8: Challenge 2” in the claim box and type your answers in the reasoning box.

Determine the tail allele combination of each mother drake.

The mothers are numbered in this picture so you can refer to them easily.



1. What type of tail does each mother have? \_\_\_\_\_
2. List the possible allele combinations that would result in this type of tail.  
\_\_\_\_\_
3. The father drake has a short tail. What is his allele combination? \_\_\_\_\_  
How do you know this is the father’s allele combination?

4. **Predict & Explain.** Predict how you will know the tail allele combination of each mother by breeding her to the father and observing the offspring.

- a. If I breed a mother drake with the father and see offspring with \_\_\_\_\_ tails, I’ll know the mother’s tail allele combination is \_\_\_\_\_, because  
\_\_\_\_\_  
\_\_\_\_\_.
- b. If I breed a mother drake with the father and see offspring with \_\_\_\_\_ tails, I’ll know the mother’s tail allele combination is \_\_\_\_\_, because  
\_\_\_\_\_  
\_\_\_\_\_.

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- c. If I breed a mother drake with the father and see offspring with \_\_\_\_\_ tails, I'll know the mother's tail allele combination is \_\_\_\_\_, because

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5. **Observe.**

- a. Breed each mother drake one at a time to the father drake and record the results in the table.
- b. Examine the data for each breed and determine the tail allele combination for each mother, and record them in this table.

Mother Drake	Offspring Tail Types	Mother's Allele Combination
#1		
#2		
#3		

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After you find out whether or not your answers are correct, complete the next question.

6. **Did your predictions lead you to the correct answers?**    Yes            No
- a. If yes, congratulations!
- b. If no, then in the space below explain why your predictions were wrong and how you would answer differently now.