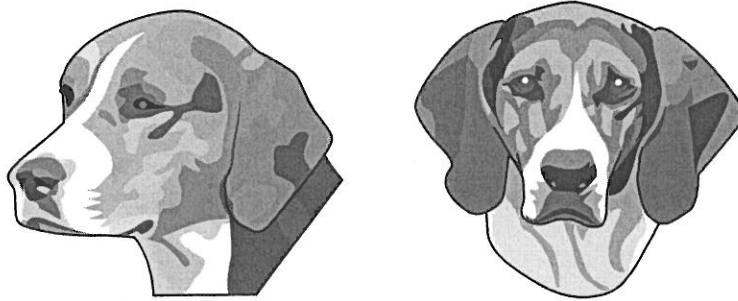


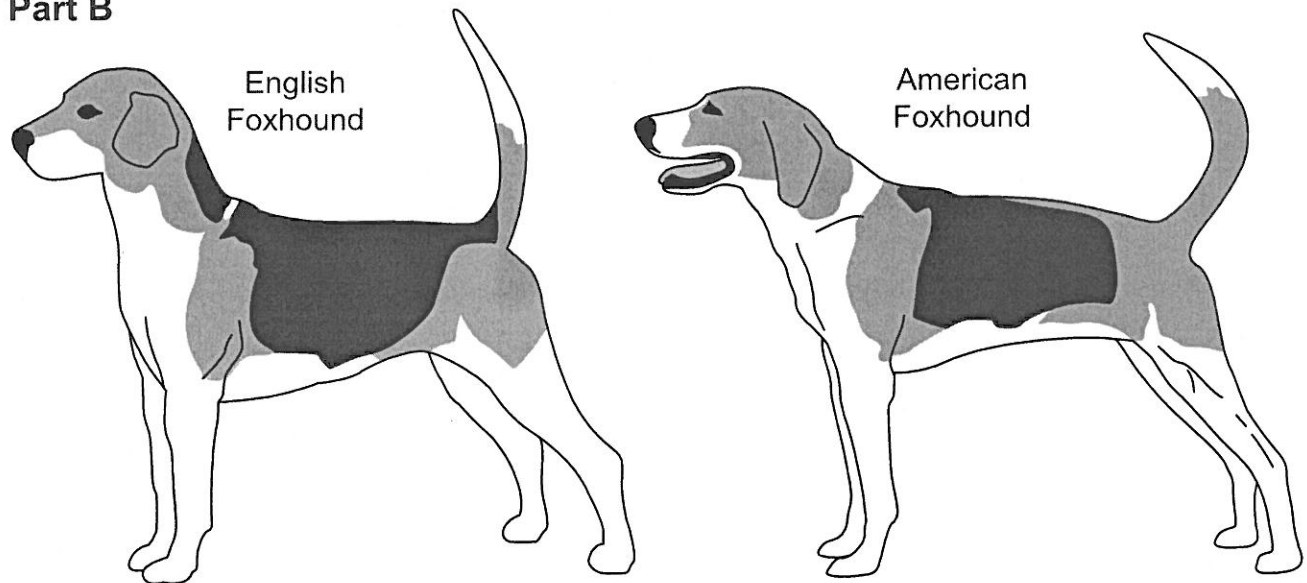
# How to Get an American Foxhound and Why

## Part A

400 years ago there was no such thing as a foxhound! How did they get here?



## Part B



## Part C

- Dogs are part of a single species, *Canis familiaris*.
- There are over 400 different breeds of dogs.
- A breed is a subspecies. It takes many generations to get a new breed.
- Many breeds today are a result of *artificial selection / selective breeding*.

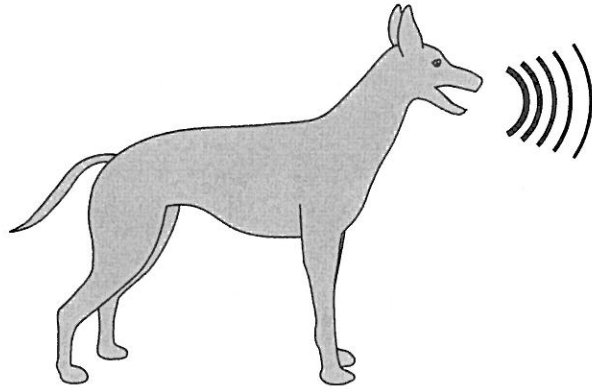
# Dog Breeding Example

You want a dog that can hear a polar bear approaching and alarm the bear so that it will turn back.

Which of the following dogs would you selectively breed to produce offspring that would be most effective in scaring away a polar bear?

## Existing breeds

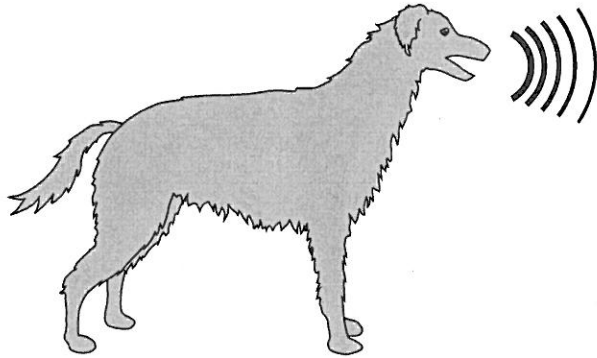
Breed 1:



## Traits

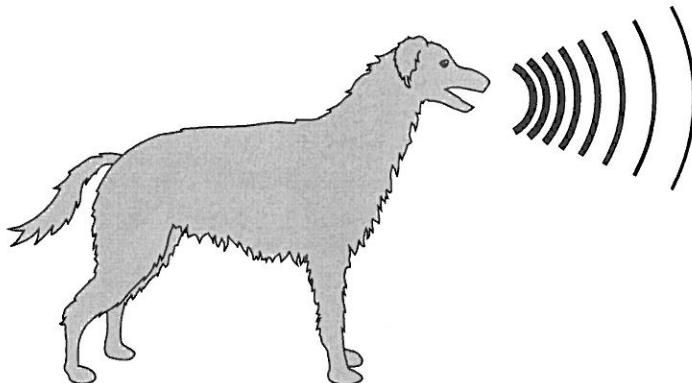
pointed ears  
green eyes  
short coat  
medium bark

Breed 2:



floppy ears  
blue eyes  
long coat  
medium bark

Breed 3:



floppy ears  
blue eyes  
long coat  
loud bark

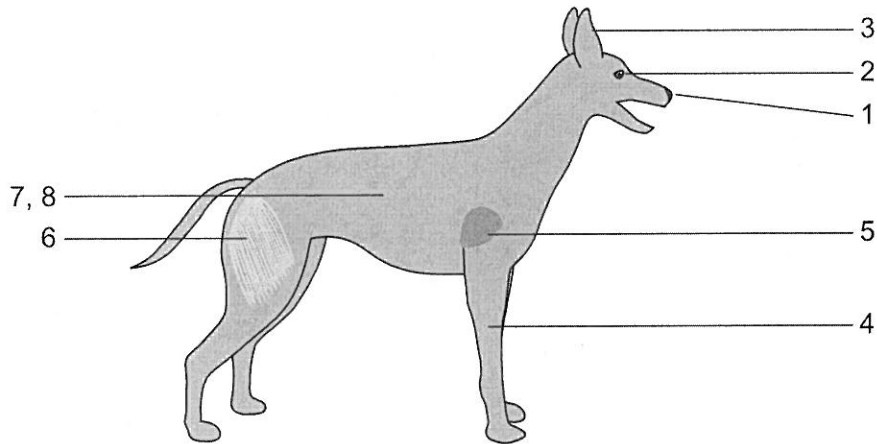
# Dog Traits

## Physical traits

- 1) Smell
- 2) Sight
- 3) Hearing
- 4) Speed
- 5) Endurance
- 6) Strength
- 7) Coat color
- 8) Hair length

## Function/significance

- Above average olfactory receptors =
- Above average number of rods =
- Long pointed ears =
- Long legs =
- Large heart =
- Large muscles =
- long hair =
- short hair =



## Behavioral traits

Trainability:

Disposition:

Bark:

## Function/significance

- High trainability =
- low trainability =
- Vicious =
- Compatible =
- Loud bark =
- Quiet bark =

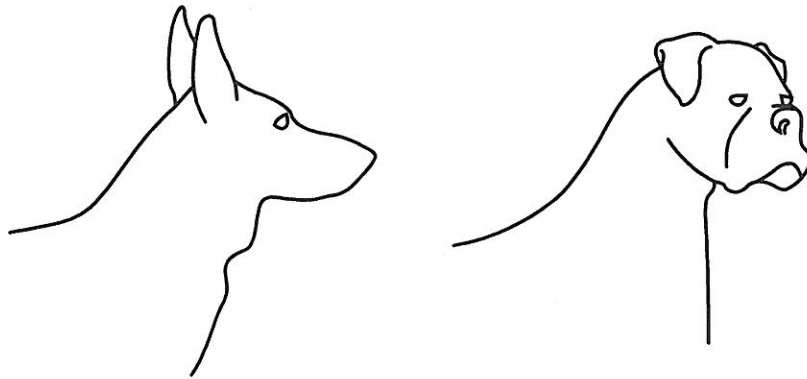
# Artificial Selection

*Artificial selection* happens when people select individuals to mate that have features they hope the offspring will inherit. This is also called selective breeding.

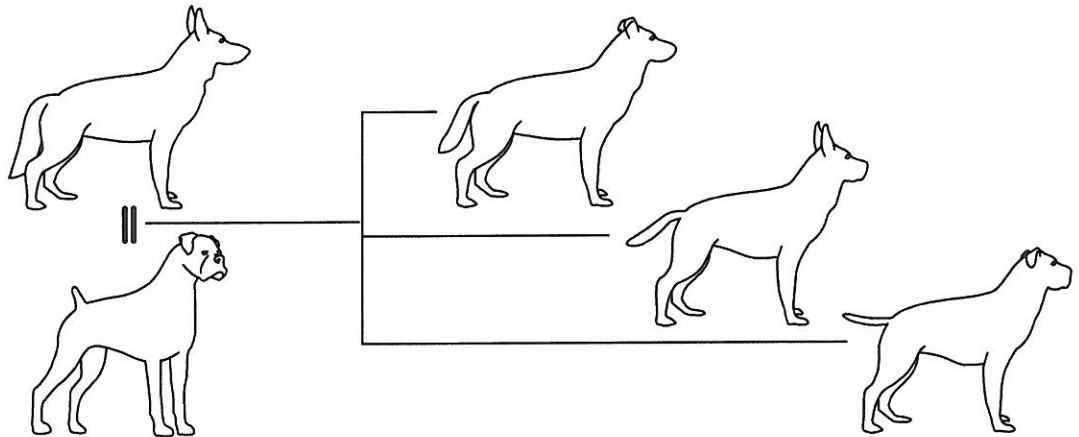
Here is what is required:



**V = Variation:** The differences that exist among individuals. Many of these differences are determined by their genes.

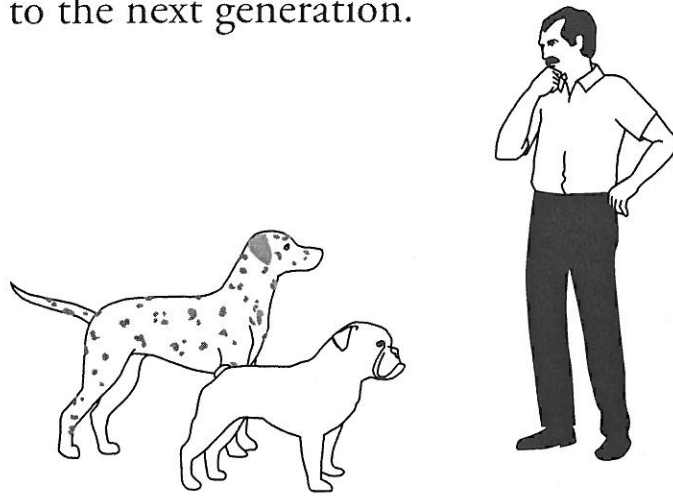


**I = Inheritance:** Genetic traits are inherited from parents and are passed on to offspring.

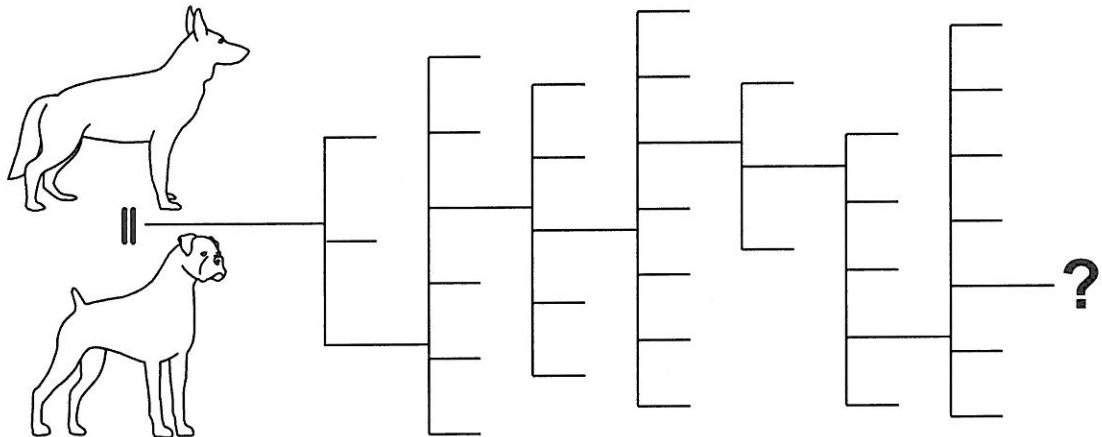




**S = Selection:** In artificial selection, individuals with favorable traits are bred in the hopes that those traits will be passed on to the next generation.



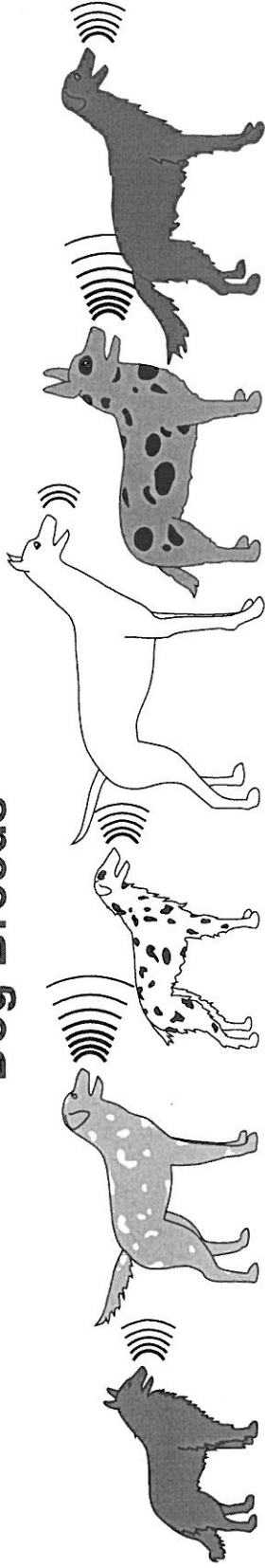
**T = Time:** Getting the desirable features does not usually happen in just one try. Often, you have to breed many generations to get a new breed established.



Remember **VIST** (use the puzzle pieces to write out “**VIST**”) to remember how selection works!

VIST puzzle pieces courtesy of the *Understanding Evolution* website, <http://evolution.berkeley.edu>, of the University of California Museum of Paleontology.

# Dog Breeds



Breed A  
**Tally Collie**

Breed B  
**Floxich**

Breed C  
**Gootagan**

Breed D  
**Spalling**

Breed E  
**Cruxtic**

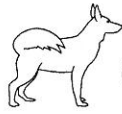
Breed F  
**Horvisianer**

## Physical features

Smell:	above average	average	above average	below average	average	above average
Sight:	average	average	average	above average	average	above average
Hearing:	above average	average	average	above average	above average	average
Speed:	average	above average	above average	above average	below average	average
Endurance:	below average	average	above average	average	above average	below average
Strength:	above average	above average	average	below average	average	below average
Coat color:	black	brown	white	white	brown	black
Hair length:	long	medium	long	short	medium	long

## Behavioral features

Trainability:	average	average	high	high	low	high
Disposition:	meek	meek	vicious	meek	compatible	vicious
Bark:	average	very loud	average	very quiet	very loud	average



# Ownership Card

Breeders' names: \_\_\_\_\_

Date: \_\_\_\_\_

**Assignment:** "You are a dog breeder. You have been contacted by a scientist who wants dogs that could be used to see and retrieve waterfowl (ducks and geese) from lakes in the area so the birds can be tagged and re-released. The birds are very skittish (scare easily) and must be retrieved unharmed and with a minimum amount of stress."

## Part I: Desired features of the new breed

For each feature below, circle the desired form you ideally want your dogs to have. For features that you do not think will affect your breed's ability to perform the given task, circle "any."

### Physical features

### Desired form

Smell:	above average	average	below average	any
Sight:	above average	average	below average	any
Hearing:	above average	average	below average	any
Speed:	above average	average	below average	any
Endurance:	above average	average	below average	any
Strength:	above average	average	below average	any
Coat color:	very dark	average	very light	any
Hair length:	long	average	short	any

### Behavioral features

Trainability:	high	average	low	any
Disposition:	vicious	compatible	mEEK	any
Bark:	very loud	average	very quiet	any

**Part II:** Dog breeds chosen to mate: \_\_\_\_\_ X \_\_\_\_\_

Reason:

Which two traits do you think are most important for your new breed to inherit?

# Puppy Traits

	Puppy #1	Puppy #2	Puppy #3
<b>Physical features</b>			
Smell:			
Sight:			
Hearing:			
Speed:			
Endurance:			
Strength:			
Coat color:			
Hair length:			
<b>Behavioral features</b>			
Trainability:			
Disposition:			
Bark:			