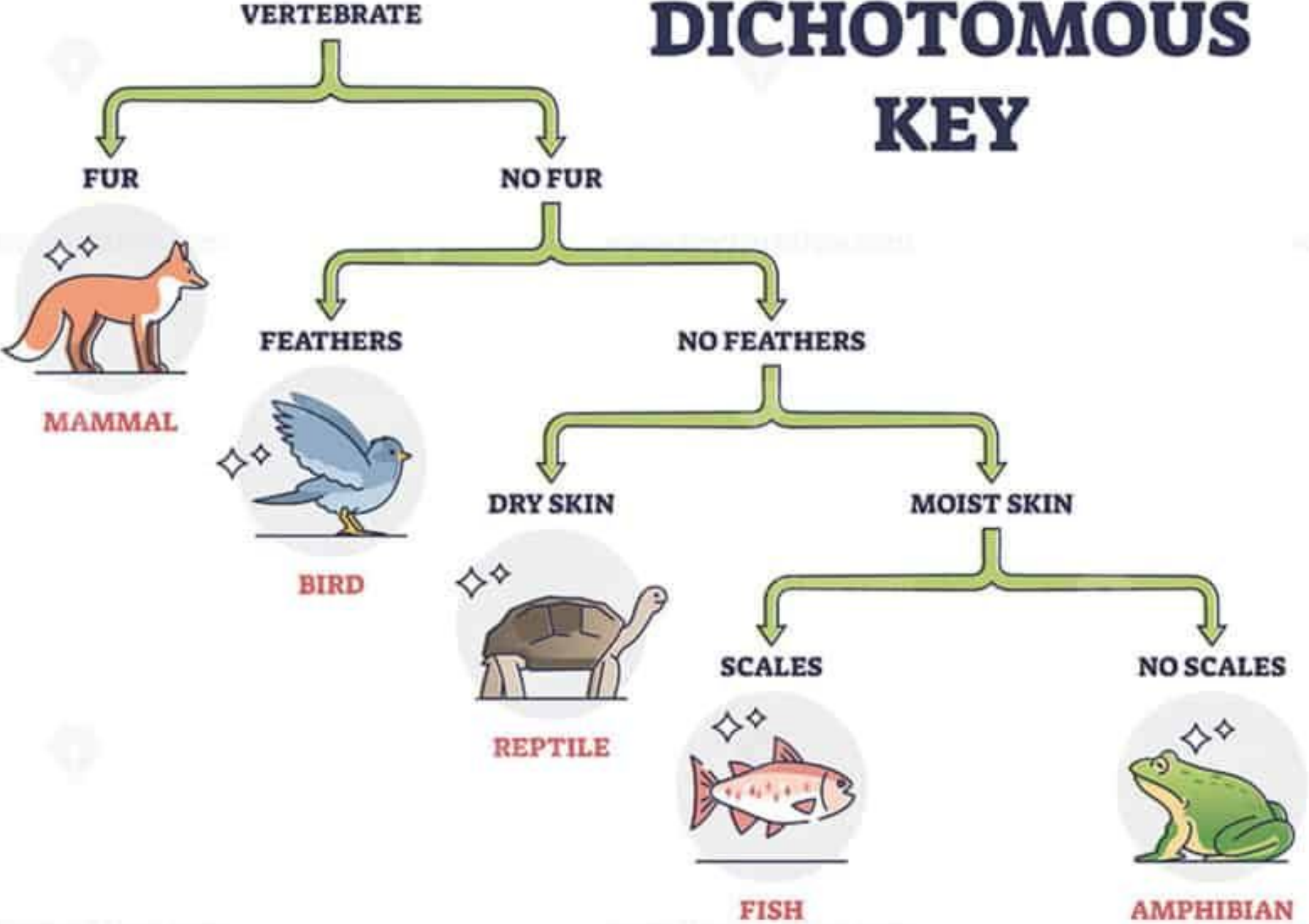


DICHOTOMOUS KEY



What is a Dichotomous Key?



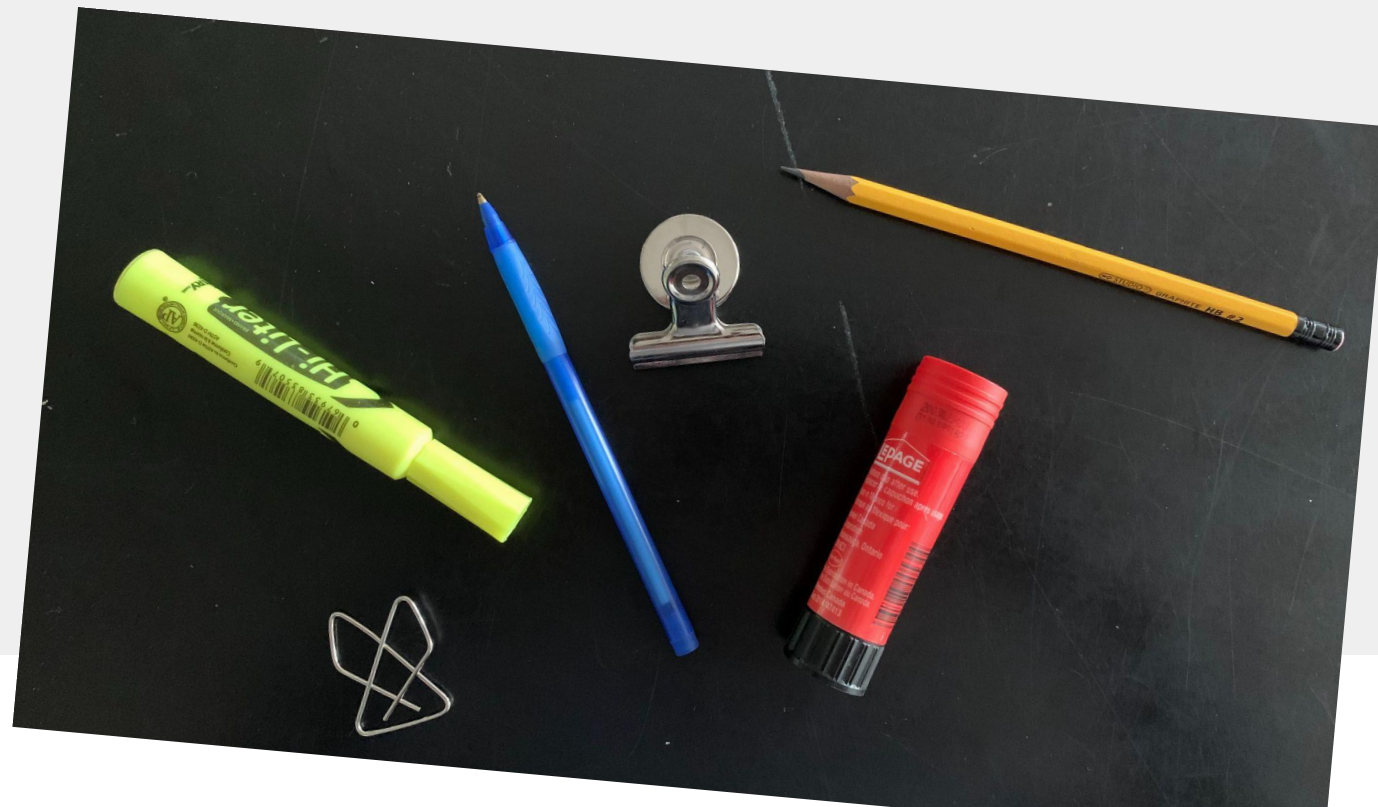
- A dichotomous key is used to identify, by species name, unknown organisms.
- "Dichotomous" means "divided into two parts" (Greek origin)
- A key uses a series of descriptions arranged in pairs, which leads the user to the identification of an unknown organism.
 - The chosen description leads to either another pair of statements or the identification of the organism.
 - Choices continue until the organism is identified.

Let's Construct a Dichotomous Key.....

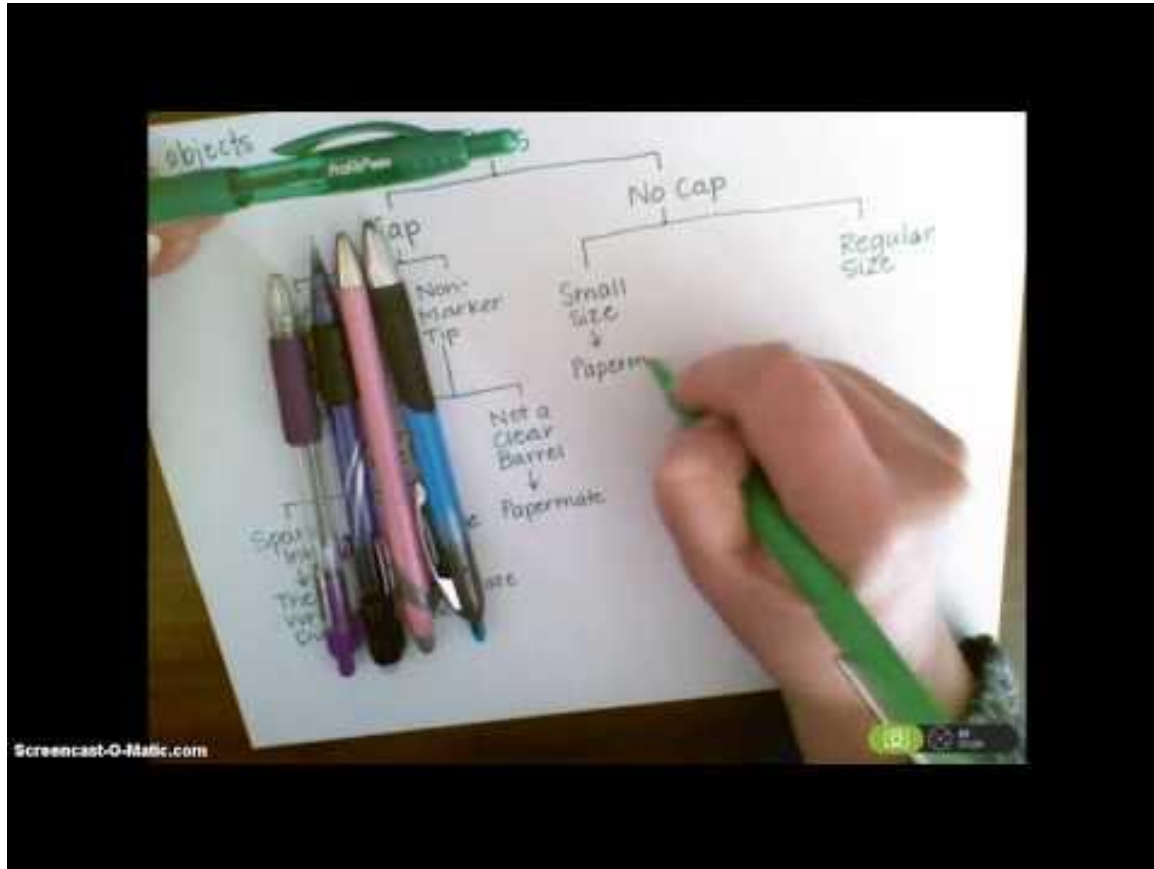


Step 1: look at the whole group and separate them into two groups based on a single distinguishing characteristic

Step 2: continue to separate each of the groups until each object has its own set of characteristics.



Extra Practice



While following along, draw out the two versions of the dichotomous key on a separate sheet of paper.

Identify



- 1a. External shell present..... Go to 2
- 1b. External shell not present..... Go to 3
- 2a. Shell consists of two halves Class Bivalvia
- 2b. Single shell Class Gastropoda
- 3a. Distinct head and tentacles present Go to 4
- 3b. Distinct head and tentacles not present Phylum Annelida
- 4a. Rounded head Order Octopoda
- 4b. Torpedo-shaped head Order Teuthida

A.	B.	C.
D.	E.	Identify each!

A



B



C



D



E





Moth



Spider



Worm



Snail

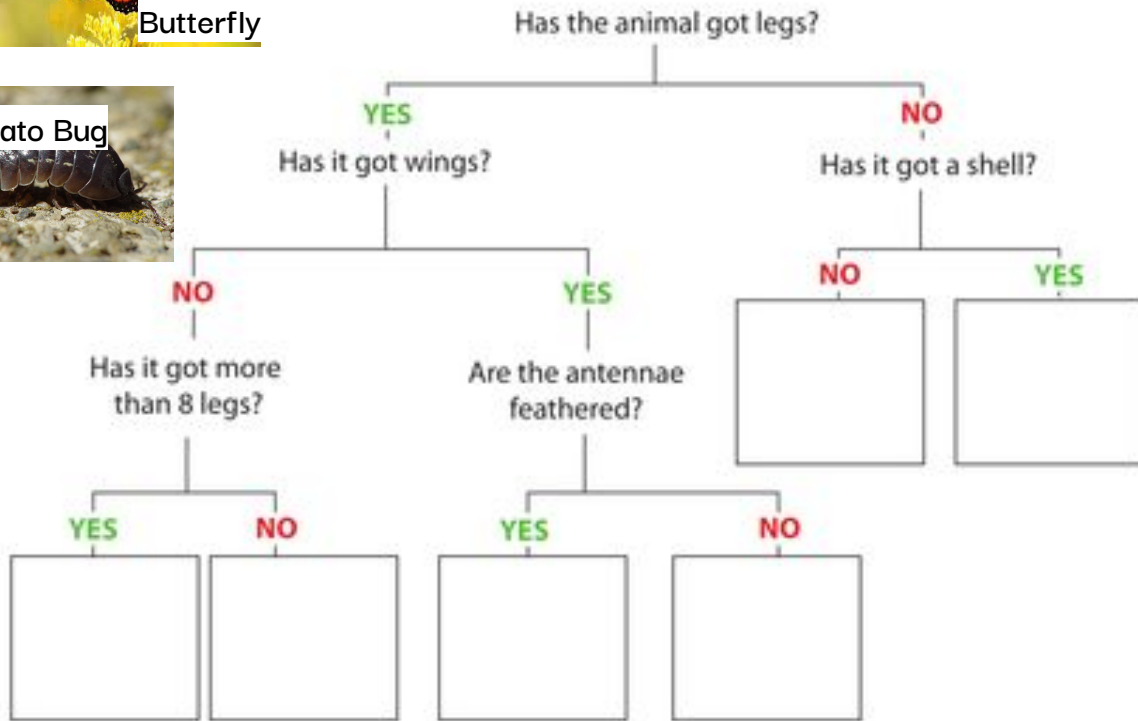


Butterfly



Potato Bug

Drag the pictures!



- 1a. Has legs..... Go to 2
- 1b. No legs..... Go to 5
- 2a. Has wings Go to 3
- 2b. No wings Go to 4

Complete the written key.

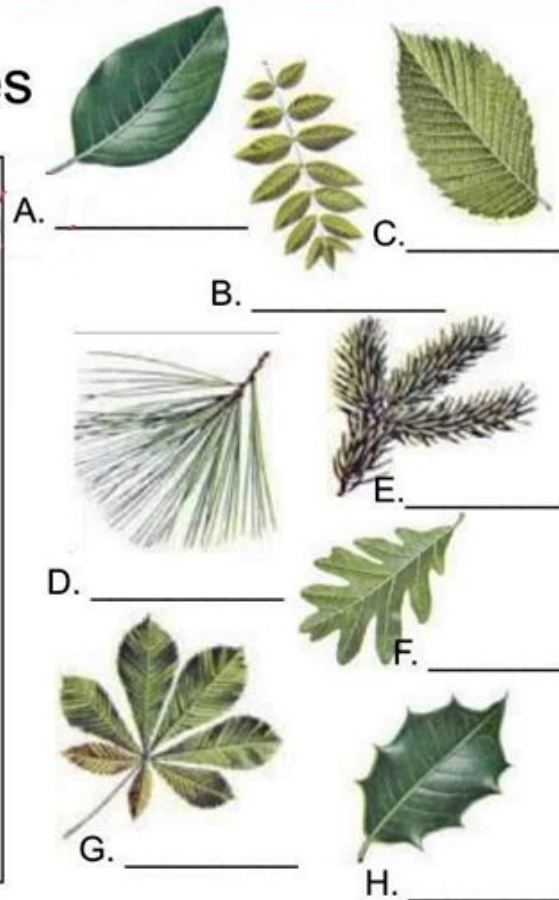


Identify



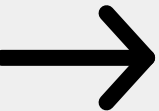
Dichotomous Key For Leaves

- | | |
|---|-----------|
| 1. a. Needle leaves | go to 2 |
| b. Non-needle leaves | go to 3 |
| 2. a. Needles are clustered | Pine |
| b. Needles are in singlets | Spruce |
| 3. a. Simple leaves (single leaf) | go to 4 |
| b. Compound leaves (made of "leaflets") | go to 7 |
| 4. a. Smooth edged | go to 5 |
| b. Jagged edge | go to 6 |
| 5. a. Leaf edge is smooth | Magnolia |
| b. Leaf edge is lobed | White Oak |
| 6. a. Leaf edge is small and tooth-like | Elm |
| b. Leaf edge is large and thorny | Holly |
| 7. a. Leaflets attached at one single point | Chestnut |
| b. Leaflets attached at multiple points | Walnut |



A.	B.	C.
D.	E.	F.
G.	H.	

Identify each!

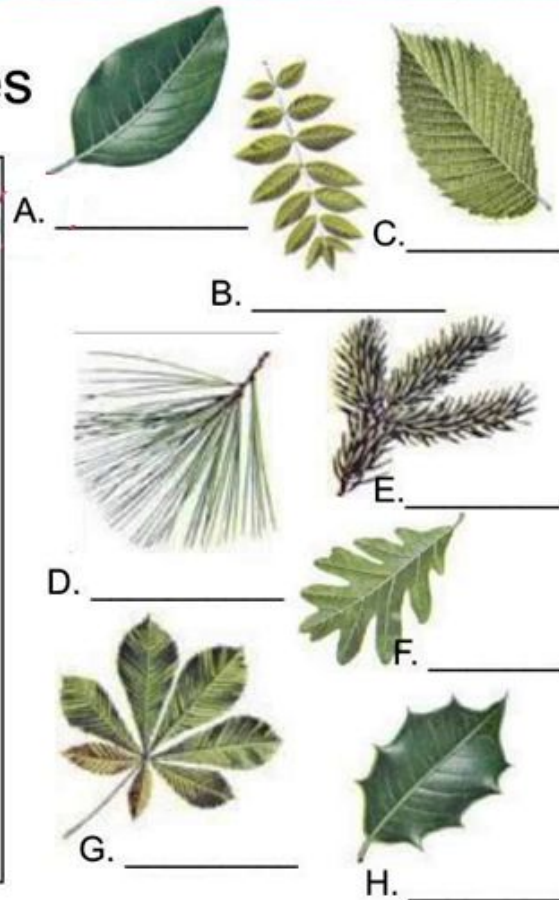


Identify



Dichotomous Key For Leaves

- | | |
|---|-----------|
| 1. a. Needle leaves | go to 2 |
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| b. Leaflets attached at multiple points | Walnut |



A. Magnolia	B. Walnut	C. Elm
D. Spruce	E. Pine	F. White Oak
G Chestnut	H. Holly	

Identify each!

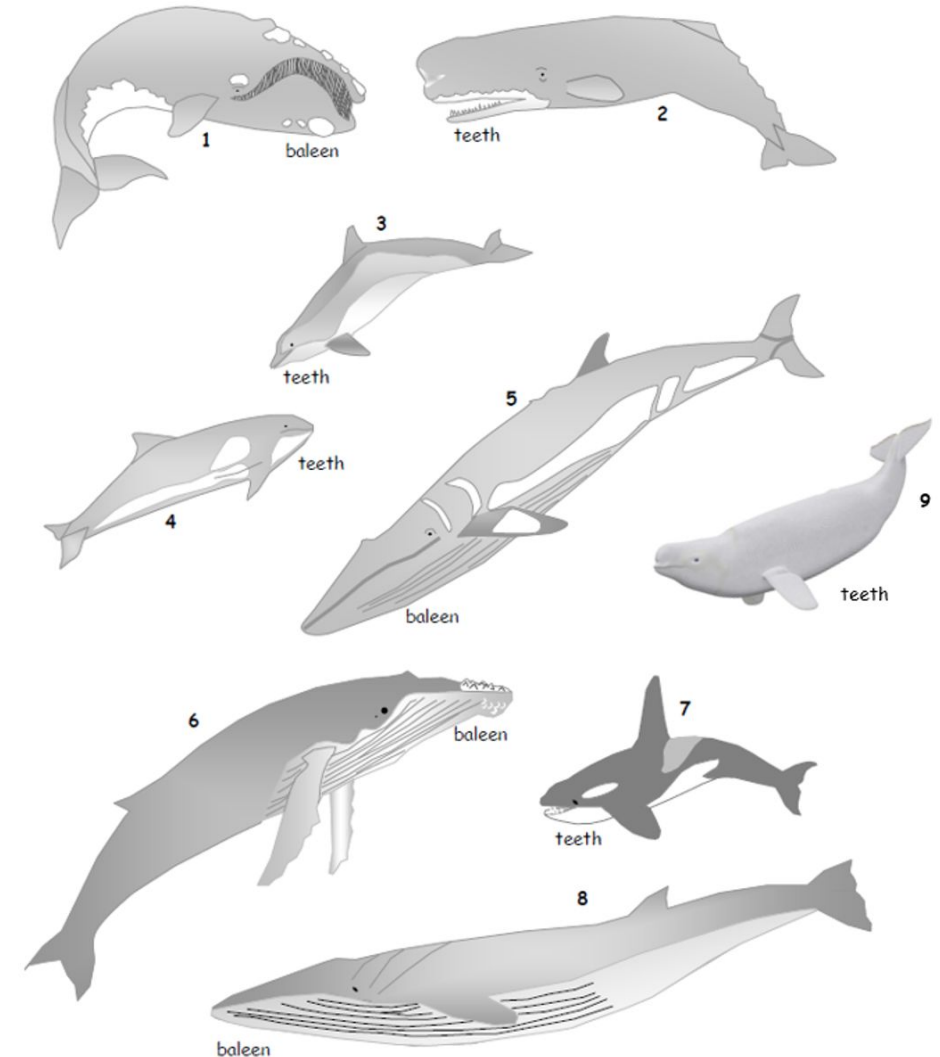
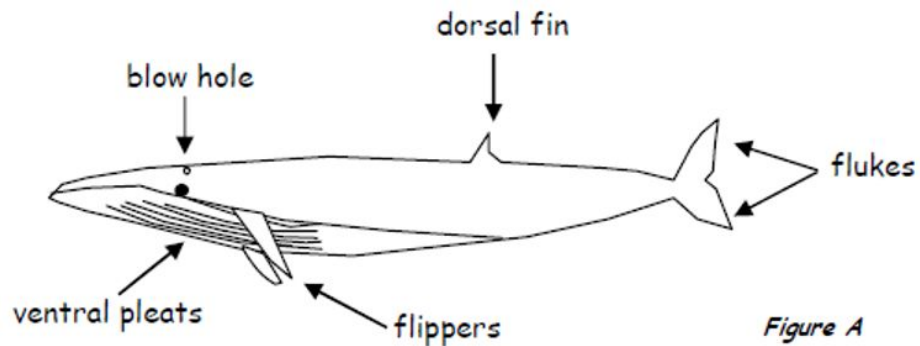


More Practice: Whale Dichotomous Key



Whales, dolphins, and porpoises belong to the same large group of mammals called cetaceans.

- Cetaceans share common characteristics that enable them to live successfully in aquatic environments.
- They all have paddle-shaped front limbs, flattened tails with horizontal flukes at the tip, a streamlined body shape, basically hairless body, thick blubber layer below the skin filled with fat and oil, external nostril (blowhole) on the top of the head and a short, thick, stiff neck. Many of these characteristics are adaptations to reduce drag for fast swimming.
- Cetaceans are further divided into two subgroups.
 - Baleen cetaceans have a fibrous type material that hangs down from the roof of their mouth and is used to filter feed on small animals called krill.
 - Toothed cetaceans have large teeth and feed on other large animals.

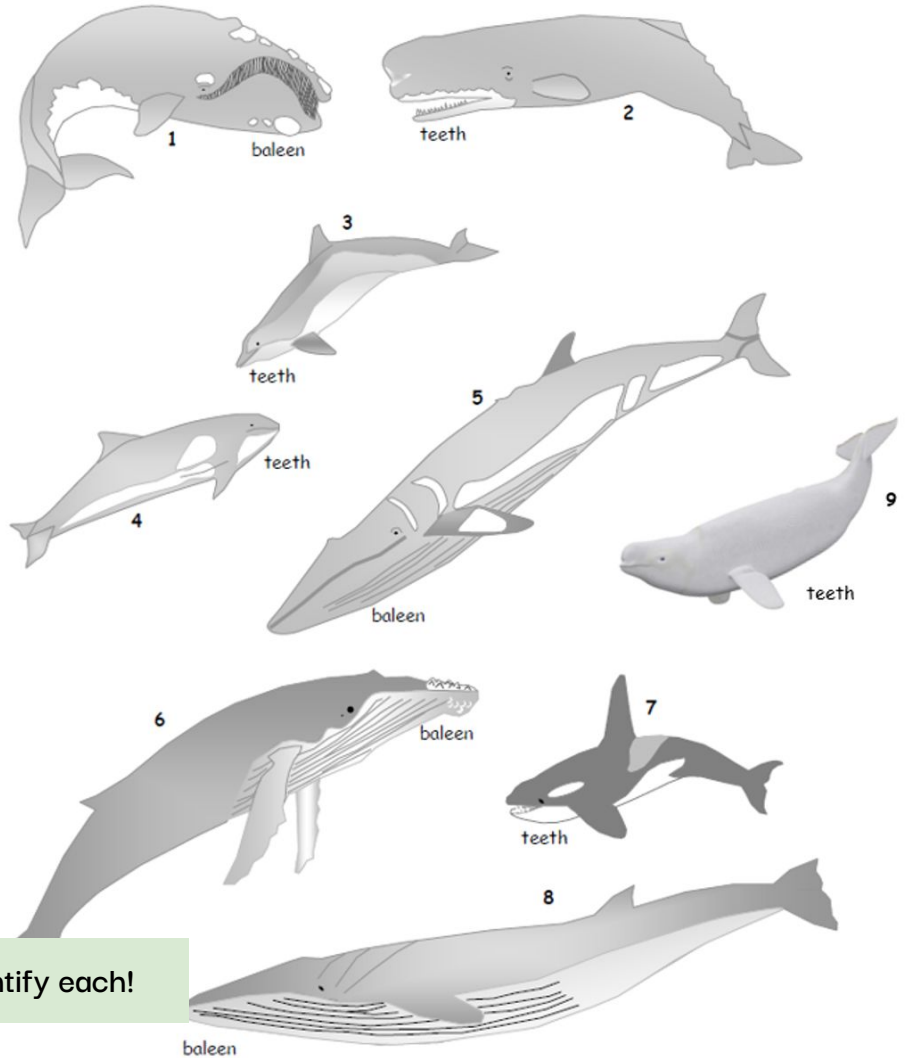


More Practice: Whale Dichotomous Key



Cetacean Dichotomous Key

- 1a. has teeth-----go to 2
- 1b. has baleen; ventral pleats present-----go to 3
- 2a. dorsal fin small and/or rounded or absent-----go to 4
- 2b. distinct (obvious)dorsal fin -----go to 5
- 3a. rough, bumpy areas present on head-----go to 6
- 3b. no rough, bumpy areas present on head-----go to 7
- 4a. small dorsal fin; square-shaped head is 1/3 length of body ----- sperm whale
- 4b. dorsal fin absent; small head with short neck region ----- beluga whale
- 5a. dorsal fin much taller than wide; distinct white patches behind eyes and dorsal fin ---- killer whale
- 5b. 3 sides of dorsal fin more or less equilateral in length -----go to 8
- 6a. long white flippers are 1/3 body length ----- humpback whale
- 6b. short flippers less than 1/3 body length ----- right whale
- 7a. large white stripes present on top of flippers; curved white patterns behind head ----- minke whale
- 7b. no large white strip on flippers; gray shading patterns behind head ----- fin whale
- 8a. short beak present ----- bottlenose dolphin
- 8b. beak absent ----- harbor porpoise



Identify each!

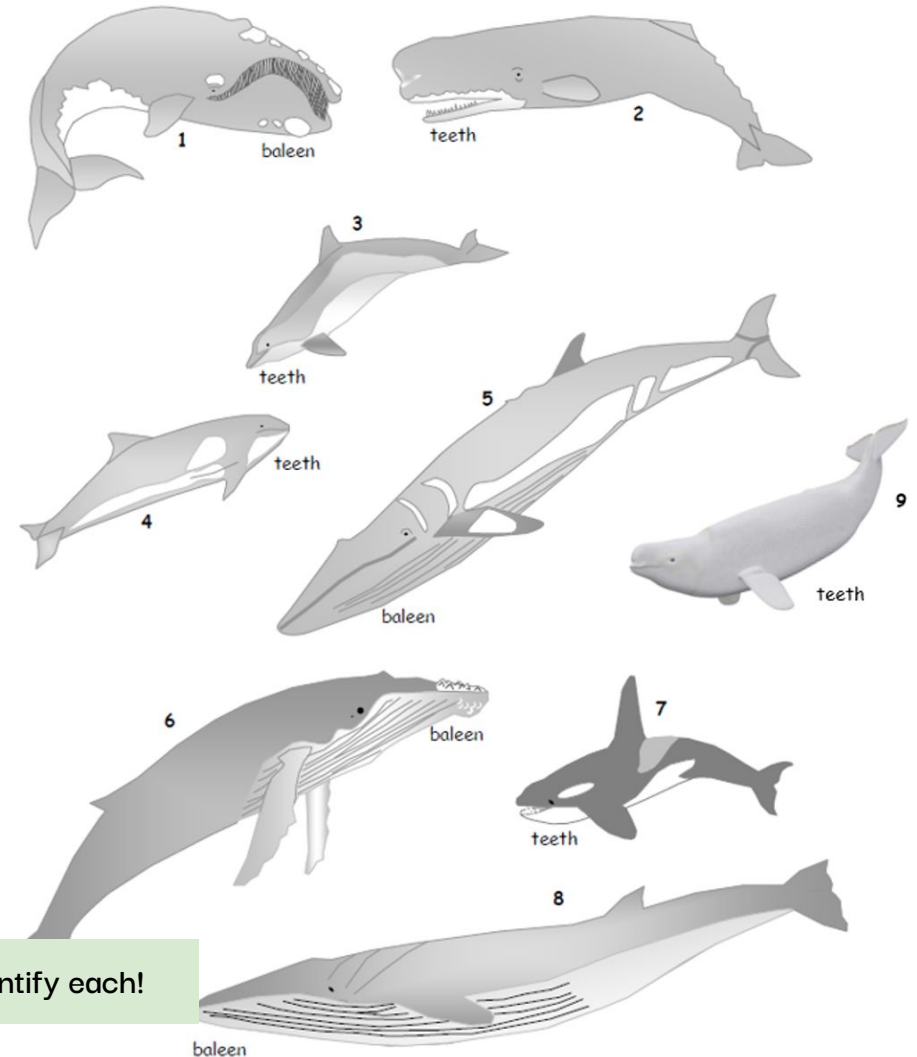
1.	2.	3.	4.
5.	6.	7.	8.

More Practice: Whale Dichotomous Key



Cetacean Dichotomous Key

- 1a. has teeth-----go to 2
- 1b. has baleen; ventral pleats present-----go to 3
- 2a. dorsal fin small and/or rounded or absent-----go to 4
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- 7b. no large white strip on flippers; gray shading patterns behind head ----- fin whale
- 8a. short beak present ----- bottlenose dolphin
- 8b. beak absent ----- harbor porpoise



Identify each!

1. Right whale	2. Sperm Whale	3. Bottlenose dolphin	4. Harbor porpoise
5. Minke Whale	6. Humpback Whale	7. Orca / Killer whale	8. Fin Whale

Continue on your own:



Pg. 32 #3, 4

Pg. 33 #5, 6

As a class



1. Name all the species
2. Create a dichotomous key in graphic form
3. Convert from graphic to written form