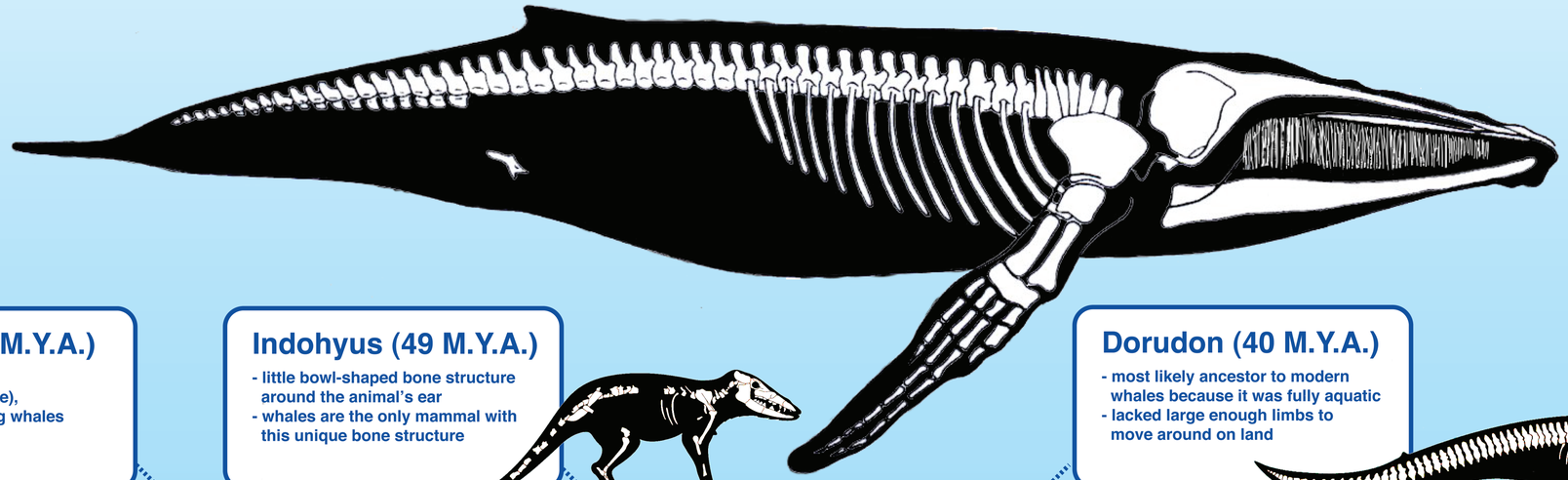
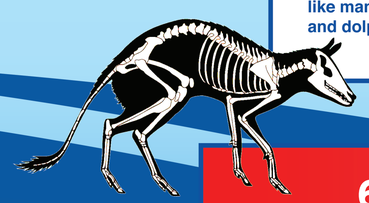
LESSONS FROM THE S.E.A.

SEA. EARTH. ATMOSPHERE

GRADE **4** UNIT **4**

Humpback Whale Evolution





Sinonyx (60 M.Y.A.)

- elongated muzzle (jaws, mouth and nose), like many fish-hunting whales and dolphins

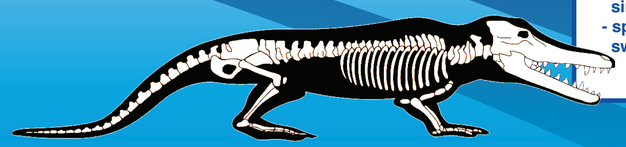
Indohyus (49 M.Y.A.)

- little bowl-shaped bone structure around the animal's ear
- whales are the only mammal with this unique bone structure

Dorudon (40 M.Y.A.)

- most likely ancestor to modern whales because it was fully aquatic
- lacked large enough limbs to move around on land

60 MYA → 50 MYA → 40 MYA → 30 MYA → Present



Ambulocetus (47 M.Y.A.)

- skull and tooth structure were very similar to modern whales
- spine moved up and down for swimming, like modern whales

Rodhocetus (46 M.Y.A.)

- nostrils moved back along the snout above the teeth, first example of blowhole evolution
- more flexible spine for tail movement
- more powerful tail for swimming

Basilosaurus (35-45 M.Y.A.)

- vertebral column shares characteristics of whales with tail flukes
- nostrils had fused into a large single blowhole that had moved further back on the head from that of Rodhocetus.