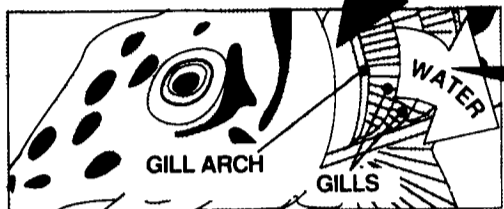
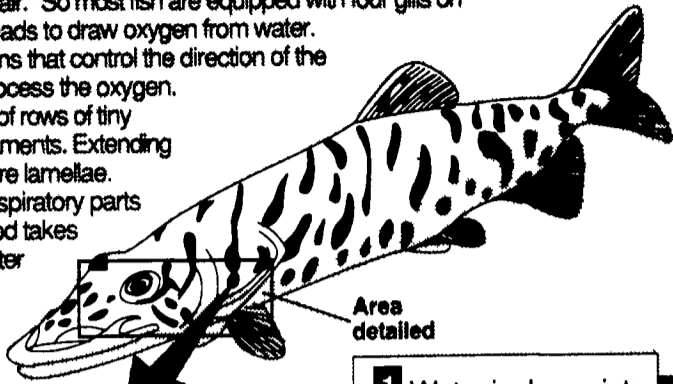


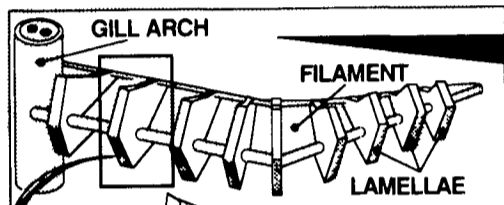
# HOWW<sup>®</sup>

## HOW FISH BREATHE UNDERWATER

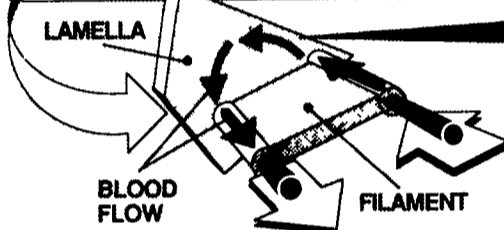
Fish breathe by taking oxygen from water and releasing carbon dioxide--as humans do above water. But water contains about 1/30th the oxygen as the same volume of air.\* So most fish are equipped with four gills on each side of their heads to draw oxygen from water. Gills are like tiny dams that control the direction of the flow of water and process the oxygen. Gills are composed of rows of tiny extensions called filaments. Extending from each filament are lamellae. Lamellae are the respiratory parts of the gill where blood takes oxygen from the water and releases carbon dioxide.



**1** Water is drawn into the mouth and pumped out through the gills.



**2** Filaments along gill arches sift water and channel it into canals formed by lamellae.



**3** Blood flows through lamellae, takes oxygen from water and releases carbon dioxide into the water.

\*At the same temperature ©HOWW 1988

SOURCE ANIMAL PHYSIOLOGY Roger Eckert W.C. Freeman and Co

# Kids' Korner



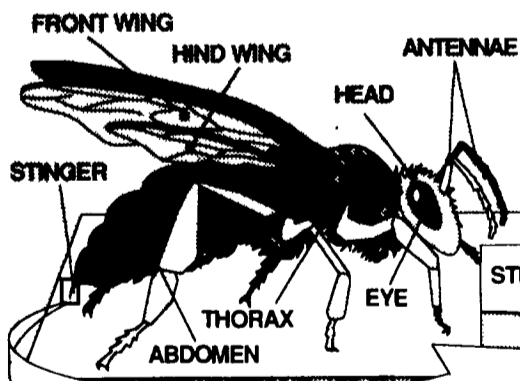
## We Want To Hear From You

September 13 is National Grandparents Day. To celebrate we want you to write and tell us about your grandma or grandpa. Maybe you call them Pop-Pop or Gram. Whatever you call them, you're sure to have lots of fun together. Tell us why you like them. What do you do with them? Do you like to visit them? Make sure you include your grandpa's or grandma's name and your own name, address and age. Mail your replies to Kids' Korner, Lancaster Farming, P.O. Box 366, Lititz, PA 17543. Deadline is September 5. Remember, you can write and tell us about your pet or yourself anytime you'd like. Send your letters to the address listed above.

# HOWW<sup>®</sup>

## HOW WORKER-HONEYBEES STING

Bee stings are one of man's most feared interactions with insects. Bees, however, are not inherently aggressive and sting only to defend themselves. In fact, bees are the only insect that produces food (honey) for themselves and humans. Bees are very enterprising and totally committed to their hives. In fact, most of the bees that humans encounter are called "worker bees." All worker bees are females that gather food for the hive, feed younger bees and turn nectar into honey. And, as illustrated below, they fight to the death to defend themselves.

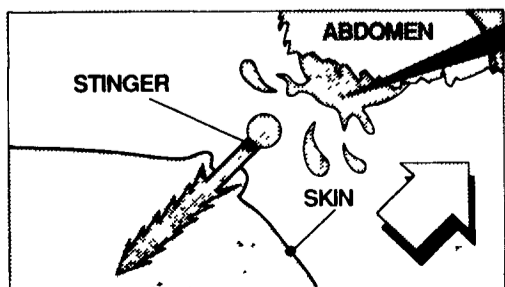
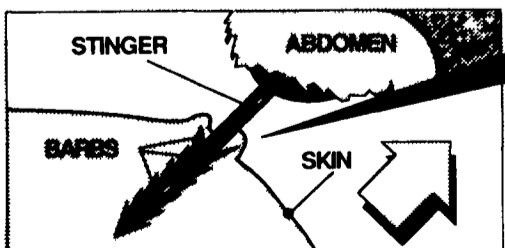


**1** Bees sting by inserting a barbed stinger and injecting their victim with a poison.

**2** The barbs prevent the bee from removing the stinger.

**3** Usually she is forced to tear her body away from the stinger and leave it in the victim's body.

**4** Left with a large wound in her abdomen, the bee usually dies shortly afterwards.



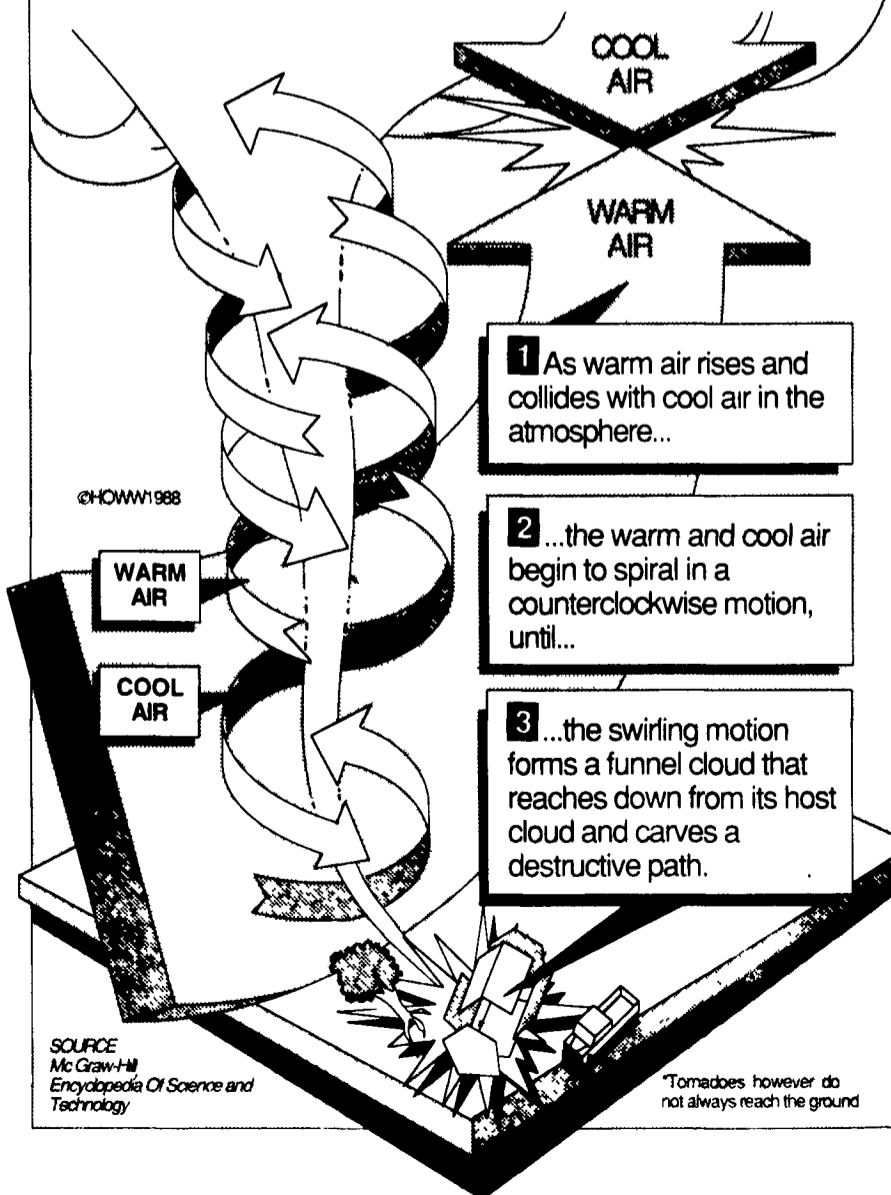
SOURCE FRIENDLY BEES, FEROCIOUS BEES Mona Kirby Franklin Watts

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## HOW TORNADOES WORK

Tornadoes\* are violent wind storms that form at the bottom of thunderstorm (cumulonimbus) clouds. Rising, warm, moist air collides with cool, dry air in the atmosphere in a turbulent, counter-clockwise motion (in the northern hemisphere). Winds inside tornadoes can reach speeds of 400 miles per hour and the spiral can reach 30-300 feet in diameter. Despite high wind speeds, tornadoes move forward at only 10-25 miles per hour.



**1** As warm air rises and collides with cool air in the atmosphere...

**2** ...the warm and cool air begin to spiral in a counterclockwise motion, until...

**3** ...the swirling motion forms a funnel cloud that reaches down from its host cloud and carves a destructive path.

SOURCE Mc Graw-Hill Encyclopedia Of Science and Technology

\*Tornadoes however do not always reach the ground