Help Match the Ant Head to its Adaptations!

Your task over the next two pages is to match the ant heads on the left to the descriptions of their adaptations and functions on the right. For each ant, think about what distinguishes it from the other ants in the column. Ask yourself questions such as “what makes this ant look distinct?”, “what do this ant’s eyes look like, and how effective might they be?” or “what does the special shape of this ant’s mandibles allow it to do?” Refer to the diagram on the right for anatomical terms.

**Trap-jaw Ant** (*Odontomachus*). This ant has long jaws which it keeps spread wide and locked under tension. When trigger hairs at the base of the mandibles are touched, the ant’s jaws slam shut with enormous force and speed. The ant uses this ability to catch fast prey, or to escape enemies by pointing its mandibles downwards, and catapulting itself out of harm’s way. What disadvantages can you think of to these mandibles?

**Pitchfork-mandible Ant** (*Thaumatomyrmex*). This ant uses its specialized branched and pointed mandibles to hold onto its bristly millipede prey while its legs clean off the dangerous bristles. What disadvantages can you think of to these mandibles?

**Army Ant** (*Eciton*). This ant’s small, simple eyes make it effectively blind, but that doesn’t stop it from using its large, scythe-shaped mandibles to attack its enemies and defend its nest. It communicates with its nestmates using its large antennae. What disadvantages can you think of to these adaptations?

**Turtle Ant** (*Cephalotes*). This ant has an armored plate covering its head, obscuring its eyes and most of its antennae. The ant lives in tunnels in wood, and uses its disk-shaped head to block entrances and protect the nest from invaders. What disadvantages can you think of to this head shape?
**Typical Ant** (*Myrmica*). This ant is a “jack of all trades”, whose mandibles can serve many purposes, and are not adapted to any specific function. They are equally useful for each of the many tasks that need to be performed in a colony, including foraging, tending brood, and digging. What disadvantages can you think of to this lack of specialization?

**Bulldog Ant** (*Myrmecia*). This ant’s long, toothed mandibles and large eyes are both adapted for hunting. They are very fast and very aggressive, and are voracious predators. What disadvantages can you think of to these adaptations?

**Big-headed Ant** (*Pheidole*). This ant has an enlarged head capsule, which is packed with muscles that drive its large, flat mandibles. It is able to crack and crush seeds that are collected by other workers in the colony. What disadvantages can you think of to these mandibles?

**Leafcutter Ant** (*Atta*). This ant uses its serrated mandibles to saw through leaf tissue, which it brings back to the colony in large disks to be pulped up and used in its fungal gardens. The nests of these ants are the only places on earth that their fungal crops grow, and these crops produce the only food that the ants eat. What disadvantages can you think of to these adaptations?