INDIANA GEOLOGICAL & WATER SURVEY
INDIANA UNIVERSITY

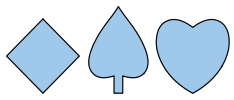
Fossil Identification Chart

Reference Documents

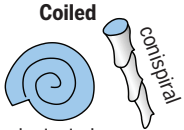
Skeletal structure ?

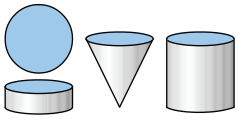
- Has skeletal structure
  - **Valves ? (shells)**
    - **Univalved ? (single shell)**
      - Coiled – conispiral → **Mollusc** Gastropod (snail)
      - Coiled – planispiral or Radial – tapered cone with exterior partitions → **Mollusc** Cephalopod
    - **Bivalved ? (two shells)**
      - Bilateral – both valves same but not symmetrical → **Mollusc** Bivalve (clam)
      - Bilateral – valves different but symmetrical → **Brachiopod**
  - **Calcareous plates ?**
    - Radial or Pentameral – discs with hole or cup-shaped body with joined plates → **Echinoderm** Crinoid
    - Pentameral – nut-shaped body with five elaborate grooves → **Echinoderm** Blastoid
  - **Cups, tubes, or complex shapes ?**
    - Radial – cone with radiating partitions on inside → **Cnidarian** Solitary (horn) coral
    - Radial – individuals in colony with interior partitions → **Cnidarian** Colonial coral
    - Complex – corkscrewlike, twiglike, lacy, or other shapes → **Bryozoan**
    - Complex, Radial, or Coiled – generally <1/32 inch → **Protozoan** Foram
  - **Segmented body with three lobes ?** → **Arthropod** Trilobite
  - **Bone or enamel ?** → **Chordate** Vertebrate (dire wolf, mastodon, etc.)
- No skeletal structure → **Plant** Fern, lycopod tree, horsetail, etc.

Types of Symmetry



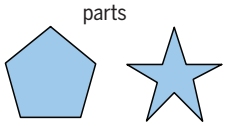
Bilateral – can be cut into mirrored halves

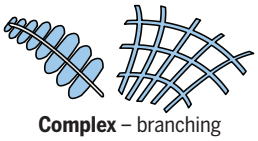




Radial – symmetry radiates from a central point

Pentameral – five equal parts





Complex – branching or fanlike