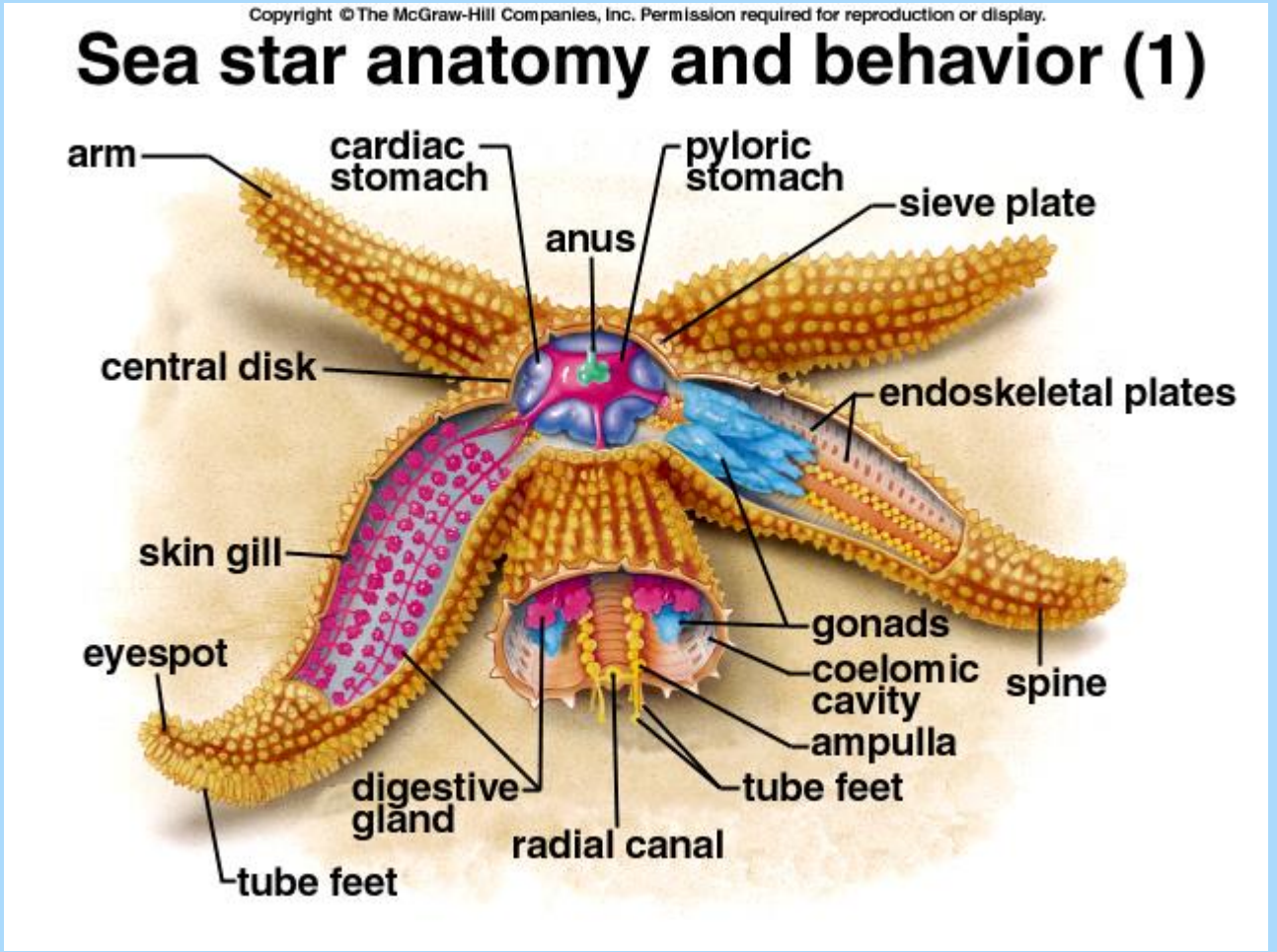
- Feeding
  - Echinoderms have several methods of feeding.
    - Sea urchins use five-part jaw like structures to scrape algae from rocks.
    - Sea lilies use tube feet along their arms to capture floating plankton.
    - Sea cucumbers move across the ocean floor, taking in sand and detritus(waste/debris).

- Sea stars usually feed on mollusks such as clams and mussels using tube feet to open shell.
- Once open the sea star pushes out its stomach out of mouth
  - Pours out digestive enzymes and the sea star starts digesting the mollusk in its own shell.
  - Pulls its stomach/partially digested prey back into mouth.

RESPIRATION AND CIRCULATION

- In most echinoderms, the thin-walled tissue of the tube feet provides the main surface for respiration.
- In some species, small outgrowths called skin gills also function in gas exchange.
- Circulation of oxygen, food and wastes takes place by the water vascular system.

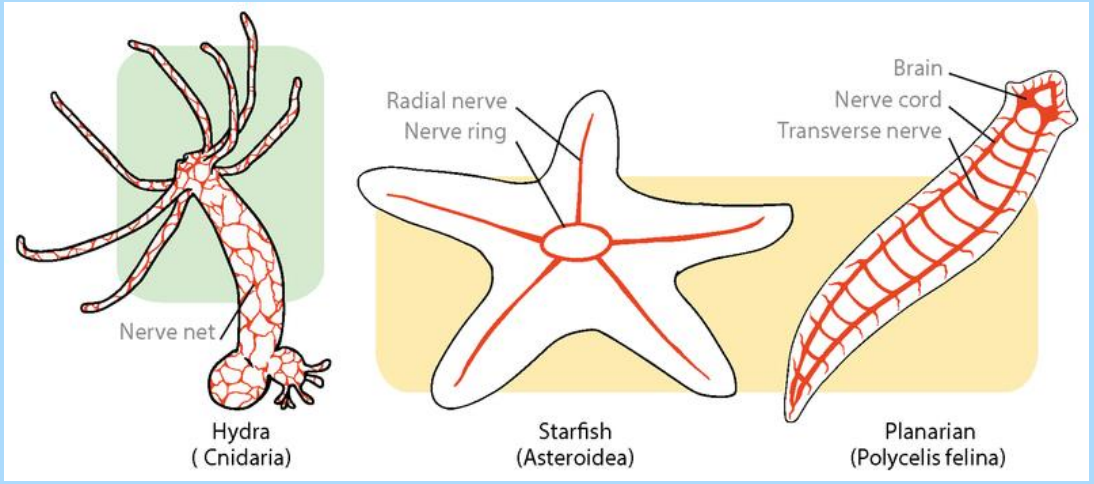


EXCRETION

- Excretion
  - Digestive wastes are released as feces through the anus.
  - Nitrogen-containing cellular wastes are excreted primarily in the form of ammonia.
  - This waste is passed into surrounding water through the thin walled tissues of tube feet and skin gills.

RESPONSE

- Response
  - Most echinoderms have a nerve ring
    - surrounds the mouth
    - radial nerves that connect the ring with the body sections.
  - Most echinoderms have scattered sensory cells that detect
    - Light
    - Gravity
    - Chemicals released by potential prey.



MOVEMENT

- Movement
  - Most echinoderms move using tube feet.
  - Sand dollars and sea urchins have movable spines attached to the endoskeleton.
  - Sea stars and brittle stars use their arms for locomotion.
  - Sea cucumbers crawl by using both tube feet and the muscles of their body wall.
  - Feather stars

FORM AND FUNCTION IN ECHINODERMS

- Reproduction
  - Echinoderms reproduce by external fertilization.
  - Both sperm and eggs are shed into open water, where fertilization takes place.
  - The larvae swim around for some time.
  - Larvae then swim to the ocean bottom and develop into adults.