

The following phyla and classes are relevant to your beachcombing experience. They are by no means a full representation of the phyla and classes in these kingdoms.

## KINGDOM: PLANTAE

Kingdom Plantae includes organisms which:

- can produce their own energy from sunlight (through the process of photosynthesis), due to the presence of chloroplasts; and
- get strength from cellulose contained within their cell walls.

### Phylum: Magnoliophyta

Seagrasses are a true marine flowering plant. They are plants with leaves, roots, flowers, seeds and underground horizontal stems called rhizomes.



## KINGDOM: PROTISTA

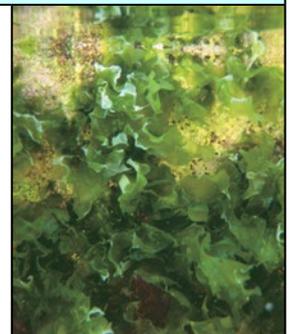
Kingdom Protista includes organisms with a variety of life cycles and appearances. They can be broadly divided into:

- heterotrophic protists such as protozoans, which ingest food particles, and
- autotrophic protists such as algae, which produce their own food.

Protists are not plants or animals, and have no embryonic stage in their development.

### Phylum: Chlorophyta

Green algae are characteristically green, although colour can range from yellowy-green to almost black. They exist as both large attached algae and free-floating microscopic (planktonic) algae, in both freshwater and marine environments. Marine attached green algae are commonly found on shallow rocky shorelines where the sunlight penetrates the water easily. It is thought that all terrestrial plants evolved from green algae, mainly due to the presence of chlorophylls *a* and *b*, which gives them the green colouration.



### Phylum: Heterokontophyta

#### Class: Phaeophyceae

Brown algae contain most of the large conspicuous algae seen on rocky shorelines and in shallow waters. Brown algae are the heaviest and largest seaweeds, and the fastest growing of all the algae. Almost wholly restricted to the marine environment, they are generally shades of brown, except for some that can appear blue underwater. Nearly all species of brown algae remain fastened on rocky or other firm habitats by a holdfast, although some species are free-floating.



### Phylum: Rhodophyta

Red algae are the most numerous of the three seaweed groups but are relatively small and not easily seen, so are not noticed as often as green and brown algae. Red algae are generally the most abundant algae in deep water as they can tolerate lower light conditions than their relatives. Red algae come in a variety of forms and their texture may vary from fine and delicate to hard and crusty.

