

What are algae?

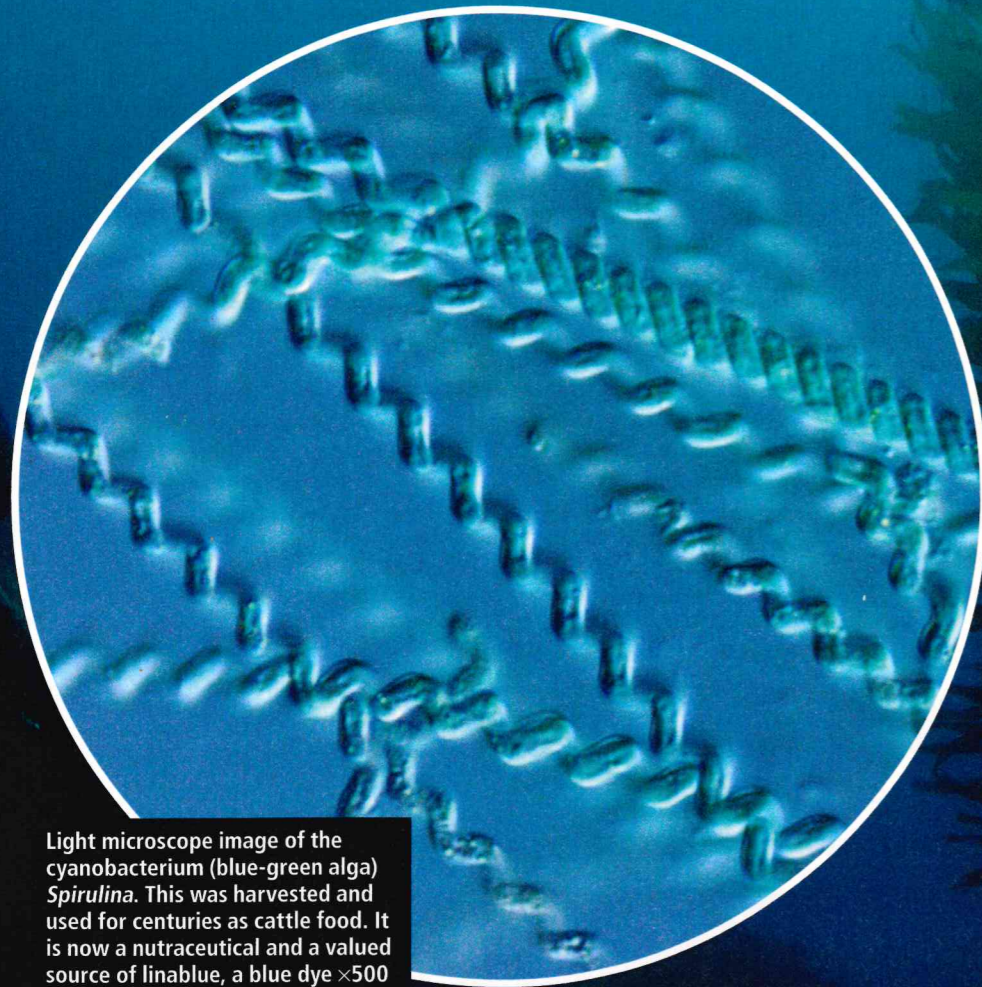
What kind of organisms are algae, and how do humans exploit them?

Algae is an informal, non-scientific term for a group of organisms that are photosynthetic and aquatic. Algae range from microscopic unicellular species to the giant seaweeds — kelps — that can grow over 50m long. The kelps and some other algae are eukaryotes; others are prokaryotic, for example cyanobacteria (also called blue-green algae).

Algae have been harvested by humans for over 1000 years. They have a number of uses, including fertiliser, but one major use is as food. Seaweed is eaten in large quantities in China, Korea and Japan. Its most familiar use to us is probably the nori seaweed in sushi rolls. Other algae are used in the production of a vast range of foodstuffs, for example algal products can be used to improve the texture of ice cream and as a stabiliser in toothpaste.

Outside the box on pages 17–19 explains how algae can be grown to produce nutraceuticals (food supplements) and pharmaceuticals. Algae could also be used in the future for biofuel production, waste-water clean-up and as indicators of changes in the environment.

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Light microscope image of the cyanobacterium (blue-green alga) *Spirulina*. This was harvested and used for centuries as cattle food. It is now a nutraceutical and a valued source of linblue, a blue dye $\times 500$



Sushi rolls are wrapped in seaweed known as nori (a red seaweed)

The giant kelp *Macrocystis*. Huge underwater forests of this fast-growing seaweed support diverse and highly productive ecosystems. The topmost parts of the alga can be harvested and processed into valuable products

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