

The Euglena

Directions: LABEL and COLOR the Euglena according to the reading. Organelles are numbered and can be identified based on their descriptions and locations.

- 1** Euglena are unicellular organisms classified into the Kingdom Protista. All euglena have **chloroplasts** and can make their own food by photosynthesis. They are not completely **autotrophic** (able to make their own food) though; euglena can also absorb food from their environment. Euglenas usually live in quiet ponds or puddles.
- 2** Euglena move by a **flagellum** (plural, flagella), which is a long whip-like structure that acts like a little propeller. The flagellum is located on the anterior (front) end, and twirls in such a way as to pull the cell through the water like the propeller at the front of an airplane. It is attached at an inward pocket called the reservoir. *Color the reservoir (1) grey and the flagellum (2) black.*
- 3** The Euglena is unique in that it is both **heterotrophic** (must consume food) and **autotrophic** (can make its own food). **Chloroplasts** within the euglena trap sunlight that is used for photosynthesis, and can be seen as several rod-like structures throughout the cell. *Color the chloroplasts (3) green.* Euglenas also have an **eyespot** at the top end that detects light - it can be seen near the reservoir. This helps the euglena find bright areas to gather sunlight to make their food. *Color the eyespot (4) red.* Euglena can also gain nutrients by absorbing them across their **cell membrane**, hence they become heterotrophic when light is not available and they cannot photosynthesize their own food.
- 4** The euglena has a stiff **pellicle** outside the cell membrane that helps it keep its shape, though the pellicle is somewhat flexible and some euglena can be observed scrunching up and moving in an inchworm type fashion. *Color the pellicle (5) blue.* The **cell membrane** is a thin layer just inside the pellicle. *Color the cell membrane (6) light blue.*
- 5** In the center of the cell is a large circle which is the **nucleus** that contains the cell's DNA and controls the cell's activities. The **nucleolus** can be seen within the nucleus and it helps manufacture things the cell needs to survive. *Color the nucleus (7) purple, and the nucleolus (8) pink.*
- 6** The interior of the cell contains a jelly-like fluid substance called **cytoplasm**. *Color the cytoplasm (9) yellow.* Also in the cell is a star-like structure: the **contractile vacuole**. This organelle helps the cell remove excess water, and without it the euglena could take in so much water due to osmosis that the cell would explode. *Color the contractile vacuole (10) orange*

