

PART I. MARINE PROTISTS

View the prepared slides of the following marine protists using a compound microscope. Sketch two representative examples of each group and label the different parts (including the cell wall, frustule, calcium or silica shell, nucleus, and flagellum, if present and visible).

1. Dinoflagellates (unicellular plants)

2. Diatoms (unicellular plants)

3. Foraminifera (protozoa)

4. Radiolaria (protozoa)

PART II. MARINE PLANTS

View the preserved specimens of the following marine plants. Sketch a typical representative of each group and label the different parts (including the blade or leaf, stipe or stem, holdfast or root, and bladder, if present).

1. Green algae

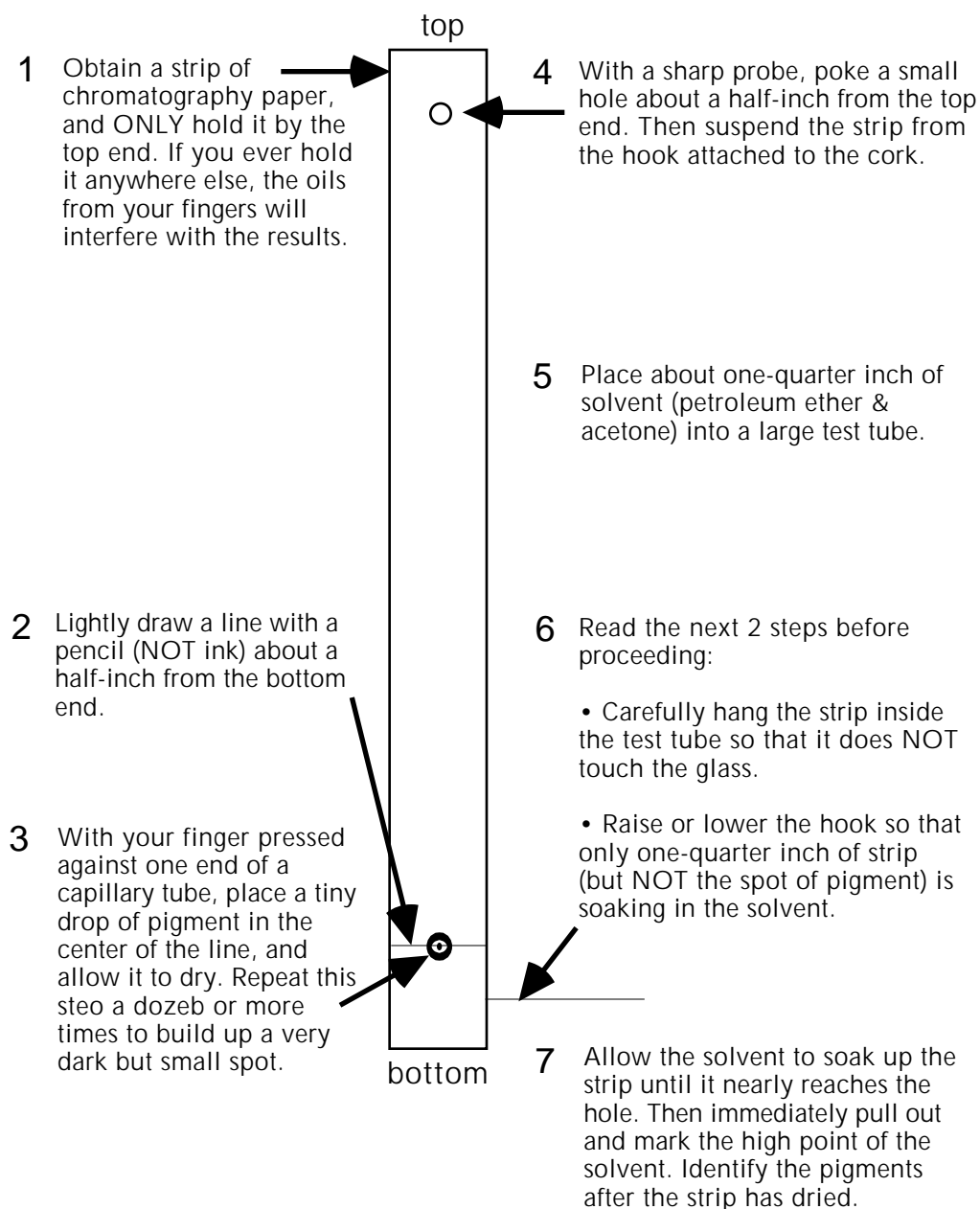
2. Red algae

3. Brown algae

4. Sea grass

PART III. PAPER CHROMATOGRAPHY

Paper chromatography is a laboratory technique for separating the different component molecules found in a chemical mixture. In this part of the lab you will deposit the pigments extracted from an algae or sea grass onto a paper strip, and then attempt to separate and identify the various photosynthetic pigments used by marine plants.



QUESTIONS

1. How can single-celled plants be distinguished from single-celled animals?
2. Why are the different kinds of algae often found at different depths?
3. How is the physiological structure of sea grass more complex and advanced than the algae?
4. Sketch and identify the color of the different pigments from your chromatography strip.
Answer on the diagram on the front side of this sheet.
5. On the strip, which color is from the chlorophyll and which from the accessory pigment?
6. What is the specific role of chlorophyll in photosynthesis?
7. What is the specific role of accessory pigments in photosynthesis?
8. Where is chlorophyll normally found in a living plant cell?