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OCN 201 Biology Lecture 4: **Marine Life: Microbes**

I. Most life in the sea is microscopic

A. Smaller organisms are _____ abundant than larger ones.

B. What's in a liter of seawater?

Fish

Copepods

Diatoms

Dinoflagellates

Nanoflagellates

Cyanobacteria

Archaea/Bacteria

Viruses

II. Phytoplankton: the base of the food chain

A. Prokaryotic phytoplankton (cyanobacteria)

Two most abundant groups

1.

2.

B. Eukaryotic phytoplankton

Some major groups:

1.

2.

3.

4.

III. Protozoa (heterotrophic protists)

A. How do they eat?

B. Some example groups:

1. *Flagellates & Ciliates*

2. *Radiolaria*

3. *Foraminifera*

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IV. Heterotrophic Prokaryotes: Bacteria & Archaea

- A. The most abundant cellular life on the planet. How many?:
- C. How do they eat?

- D. Where do they live?

- E. How do they move?

V. Viruses

- A. The most abundant microbes in the sea. How many?
- B. What are viruses? Some properties:
 - 1. Simply a set of instructions (the genome) wrapped in a protective coat
 - 2. Obligate parasites:
 - 3. How do they move?
 - 4. How do they eat?

- C. What organisms are infected by viruses?

- D. Typical viral infection steps
 - 1. Attachment to host cell
 - 2. Genome enters cell
 - 3. Viral genome directs synthesis of new viral components
 - 4. Assembly of new viruses
 - 5. Lysis of host cell