Monterey Bay is a vibrant ecosystem, providing a home for giant blue whales, tiny phytoplankton, and everything in between. The organisms that thrive change with the seasons, as each season brings unique weather and water conditions to the bay. Read on to learn which critters you are likely to see, and whether you need your binoculars or your microscope!

**Winter**
- Wind, upwelling, cold water, high nutrients, high oxygen
- Diatoms are common in the spring. The abundant nutrients help them to build their silica-rich cell wall.

**Spring**
- Kelp
- Orcas
- Humpback whales
- Gray whales
- Salmon
- Pigeon guillemots
- Terns

**Summer**
- Warm and stratified water, calm conditions

**Fall**
- Rainstorms at the surface
- Low nutrients, high surf

**Winter**
- Elephant seals
- Great white sharks
- Jaegers
- Pacific and common loons
- Western grebes
- Auks

**Troublemakers?**
- Pseudo-nitzschia
- Akashiwo
- Alexandrium

**Phytoplankton?**
- Small stuff: cyanobacteria, flagellates
  - Low phytoplankton biomass
  - Rains continue to introduce pollutants and nutrients
- Diatoms
  - Harmful algal blooms occur
  - Good monitoring is essential as blooms can be dangerous to sea life and humans
- Dinoflagellates
  - Thrive in the fall. Their flagella allow them to swim down away from the surface to reach nutrients.
- Troublemakers? Not really

**Phytoplankton?**
- Dinoflagellates
  - Red tides common - only some are harmful
  - First rains flush nutrients into the bay, cause increase in bacteria and blooms

**Diatoms**
- Theca covering

**Troublemakers?**
- Pseudo-nitzschia
- Akashiwo
- Alexandrium

**Phytoplankton?**
- Cyanobacteria, flagellates

**Troublemakers?**
- Not really

Little guys are hard to see! Flow cytometry, which is also used to count blood cells, helps to identify and count the small organisms common in the winter.