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Retracing the Sea of Cortez with local Tide Pooling

Overview: The works of Steinbeck are not only rich sources for instruction of literature and writing, but also provide for substantial scientific experimentation through data collection and analysis. The purpose of this activity is to have biology students retrace the Sea of Cortez trip and recreate the log books used by both Ricketts and Steinbeck on the trip. By strategically selecting the collection locations to be analyzed, student will be able to propose reasons for species variation and distribution. Finally for extension purposes, students will perform their own collections at a local tide pool.

Grade Level: IB Biology HL (12th)

Goals:

1. Students will recreate Ricketts’ log books based on information provided in Steinbeck’s The Log from the Sea of Cortez.
2. Students will analyze species distribution and abiotic factors to propose reasons for the identified distributions.
3. Students will conduct their own collections at a local tide pool. An additional log will be created and presented.

Procedure:

1. Students are divided into approximately 6 groups depending on class size. Students select chapters from The Log from the Sea of Cortez that involve species collections. Ideally, the locations will be equally distributed around the peninsula. Students are to read their chapters and identify all the species collected at that location.
2. Students will create a log entry consisting of a map of their collection location and the species collected. Students will research each organism and provide pictures and general information for each species.
3. The logs will be displayed on presentation boards and presented to the class.
4. After the presentations, students will be given time to study each group’s presentation log and together as a group, propose reasons for the distribution of each species.
5. After consulting the NOAA tide guides, students will be taken to a local pier at low tide and allowed to explore a tidal basin much as Ricketts and Steinbeck did. Species will not be collected in accordance with law, but will be recorded digitally. After collecting their data, students will create an additional log of their collection trip.

Resources:

* John Steinbeck’s The Log from the Sea of Cortez
* NOAA Tides and Currents website <http://tidesandcurrents.noaa.gov/>
* Internet for research