



The Highest Tide

*Scientific, comic, and poetic
species descriptions*

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Field-tested with: 10th-11th grade students in the English Course, ESNR Academy, Watsonville High School, Watsonville, CA (Winter, 2011)

Concepts: Marine species, descriptive writing, varying style according to purpose, poetic writing, comic writing, scientific writing

Skills: Observation, careful listening, species research, writing to convey detailed species description, control over rhetorical style and tone

Module Type: Discussion and classroom activity

Duration: One 2-h class session

Key materials:

- The Highest Tide, by Jim Lynch
- Preserved specimens of marine species
- Marine and intertidal field guides with photographs of marine species
- Marine biology textbooks
- White board and markers

Education Standards Addressed:

National Science: Science As Inquiry; Life Sciences; History and Nature of Science

California Science: Investigation and Experimentation

California English Language Arts: Writing Strategies, Writing Applications, Literary Response and Analysis

Overview: Using passages from The Highest Tide by Jim Lynch, students learn that there are different ways to describe an object or an organism. Students then describe a marine organism using three methods: scientifically, poetically, and comically.

This project is an opportunity for students to learn:

- There are many ways to describe an object or a living thing and that each way can convey a different understanding or feeling to the reader.
- When reading a description, two different people may visualize two different things.
- How to use the different techniques used in The Highest Tide, poetic, comic, and scientific styles, to describe a marine species.
- How to better interpret and visualize objects or organisms while reading.

Background for Teachers

The many ways to descriptive writing:

The Highest Tide by Jim Lynch is an excellent book to introduce students to both scientific concepts in the form of natural history, and to different styles of writing. There are many passages throughout the book that use descriptive writing to explain the appearance and natural history of various marine and intertidal organisms. In particular, the book uses scientific, comic, and poetic language distinctly—it even mentions these descriptive styles on the first page! In this module, the students use these passages to understand the difference between scientific, comic, and poetic writing and then, using a preserved marine specimen, write their own species descriptions using the three different styles.

Science Education Standards Addressed:

This module focuses on observation and description of marine and intertidal organisms, and addresses National Science Education Standards A. Science As Inquiry (p.175-176); C. Life Sciences (p.187); G. History and Nature of Science (p.200-202), as well as the following Science Content Standards for California Public Schools:

Investigation and Experimentation, 1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing content in the other four strands, students should develop their own questions and perform investigations. Students will:

- a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data (p.61).
- d. Formulate explanations by using logic and evidence (p.61).
- g. Recognize the usefulness and limitations of models and theories as scientific representations of reality (p.61).

NSES (<http://www.nap.edu/catalog/4962.html>)

SCSCPS (<http://www.cde.ca.gov/be/st/ss/documents/sciencestnd.pdf>);

In addition, this module advances skills required by California's English Language Arts Content Standards for Grades 9-12, including:

Grades 9-10: Writing Applications (Genres and Their Characteristics)

- 2.1 c. Describe with concrete sensory details the sights, sounds, and smells of a scene and the specific actions, movements, gestures, and feelings of the characters; use interior monologue to depict the characters' feelings.

- 2.2. c. Demonstrate awareness of the author’s use of stylistic devices and an appreciation of the effects created.
- 2.3 c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
- 2.6 a. Report information and convey ideas logically and correctly.
b. Offer detailed and accurate specifications.

Grades 11-12: Literary Response and Analysis

- 3.4 Analyze ways in which poets use imagery, personification, figures of speech, and sounds to evoke readers’ emotions.

Writing Strategies

- 1.2 Use point of view, characterization, style (e.g., use of irony), and related elements for specific rhetorical and aesthetic purposes.
- 1.5 Use language in natural, fresh, and vivid ways to establish a specific tone.

Writing Applications (Genres and Their Characteristics)

- 2.1 c. Describe with concrete sensory details the sights, sounds, and smells of a scene and the specific actions, movements, gestures, and feelings of the characters; use interior monologue to depict the characters’ feelings.
e. Make effective use of descriptions of appearance, images, shifting perspectives, and sensory details.
- 2.2 b. Analyze the use of imagery, language, universal themes, and unique aspects of the text.
d. Demonstrate an understanding of the author’s use of stylistic devices and an appreciation of the effects created.

ELACS: <http://www.cde.ca.gov/be/st/ss/documents/elacontentstnds.pdf>

Scientific, poetic, and comic species descriptions

How do you describe things? How do you tell someone about a butterfly you saw or a beach you went to or a good-looking boy or girl? In The Highest Tide, the protagonist Miles frequently describes the marine and **intertidal** species he finds while exploring. In fact, description is a larger theme of the novel and Miles talks about the ability to describe the marine species he finds using three major styles: “You’d have to be a scientist, a poet, and a comedian to hope to describe it all accurately” (p.1).

What does it mean to be “**scientific**”? The main purpose of scientific explanations is to convey accurate information. One example of a scientific description from The Highest Tide can be found on page six “[The nudibranch] was just three inches long but with dozens of fluorescent orange-tipped hornlike plumes jutting out from the back of its see-through body” (p.6). Another example can be found on page four, with a

description of a Moon snail "Moon snails were often hard to find because they burrow deeply, feeding on clams, their tiny jagged tongues drilling holes right above the hinge that holds clams together. Then they inject a muscle relaxant that liquefies the clam to the point where it can be sucked out through the hole" (p.4).

What does it mean to be "**poetic**"? Poetic descriptions often use metaphors to convey emotional impact of an object or species (Merriam-Webster.com), and poetry often emphasizes the way words sound together. Many popular genres, such as song or rap, use rhyme. An example of poetic description from The Highest Tide can also be found on page 4, embedded with the scientific description of the Moon snail: "the great clam-killer himself, his undersized shell riding high on his body like the cab of a bulldozer, below which his mound of oozing flesh prowled the flats for any clam unlucky enough to be in its path" (p.4).

What does it mean to be "**comic**"? The main purpose of comic description is to cause laughter or amusement (Merriam-Webster.com), such as in a comic strip. An example of a comic description of species can be found in The Highest Tide on page 52 about after Miles asks his friend Phelps how he thinks barnacles reproduce:

"By getting girl barnacles drunk?"...

"Nope, their penises are rolled up like fire hoses inside their shells"....

Phelps laughed. "Come on. Fire hoses?"

"That's right. A barnacle's penis can be four times as long as the diameter of its base. So, yeah, those four-inch-wide giant barnacles you see along the coast are packing sixteen-inch penises."

Phelps pointed at a log half-crusted with tiny barnacles. "These guys are the studs of the beach?"

Using these and other passages from The Highest Tide (see below), your class can determine if the descriptions are (mostly) scientific, poetic, or comic. Some of them might be mixtures, so part of the challenge is to decide which elements or phrases of the descriptions belong in each respective category.

At the same time, the class can practice careful, imaginative reading and listening. What do you picture when you read about the species descriptions in The Highest Tide? Do you think your students would picture the same organism? This module asks them to transform and externalize verbal information into an image, by having at least two different students draw what they visualize when they hear descriptions from the novel.

After practicing with The Highest Tide, students will get their chances to be describers! Ask students to notice what they found to be effective as a way to describe objects and species, and what they appreciated most about scientific, poetic, and comic styles. The next step is for them to choose a preserved marine or intertidal specimen, and then complete a writing activity in which they describe the species scientifically, poetically,

and comically. Make sure students have access to field guides and textbooks to learn more about the natural history of the organisms, but they should also be able to stretch the facts for the poetic and comic descriptions of their specimen.

Because a single piece of writing can incorporate various styles of description, they could write a story about it, a song, a comic strip, a movie script, or a joke that incorporates two or even all three styles discussed here. Or, they could write three separate pieces.

Common Student Misconceptions:

The majority of the students who field tested this module were unable to visualize the organisms described in the book and they found this module helpful just to see, first hand, what some of these marine species looked like. Many of the students tended to skim over the descriptive parts of the book before conducting this module. Teachers who run this module in class should be aware of that and be prepared to spend some time reading passages from the book so that students can practice visualizing what they are reading. Another misconception is that when students began to write their own descriptions, many felt frustrated because they didn't know enough about the species to write a description. If this occurs, students should be reminded that while they should use the textbooks and field guides to write their scientific descriptions, they can also expand on those descriptions and create fictional natural histories for their specimens when writing the poetic and comic descriptions.

Project Description

Materials:

- The Highest Tide, by Jim Lynch
- Preserved specimens of marine species
- Marine and intertidal field guides with photographs of marine species
- Marine biology textbooks
- White board and markers

Preparation:

In order to prepare for this module, teachers should order and distribute copies of The Highest Tide to their class and have them read up to Chapter 9. In addition, teachers should gather preserved specimens of intertidal and marine species from a biology teacher or other science lab. If such specimens are not available at the school, teachers

could borrow them from a local university or natural history museum. If that is not an option, teachers could use pictures from the web of various species or conduct observations of living organisms on the school grounds or during a field trip. Finally, teachers should read and mark descriptive passages in The Highest Tide to read during the module.

Timeline:

10 minutes	Introductory discussion about descriptions
20 minutes	Activity #1: Interpretive Reading and Comparative Drawing activity (The Highest Tide)
75 minutes	Activity #2: Marine/Intertidal Organism Inquiry (Creative Writing in 3 Descriptive Genres)
15 minutes	Share student work

Procedure:

Have the students get out their copies of The Highest Tide and have them read along while you read the indicated passages aloud, or have a student read them aloud. The following is an outline for a class discussion; all questions to be read aloud to students are bolded. Begin the discussion by asking:

How can you describe things; for instance, if you are trying to describe a butterfly, the beach, or a good-looking boy or girl?

On the first page of The Highest Tide, Miles talks about how he can describe the intertidal species he sees. **Do you know what intertidal means?** Draw a picture of where the beach or rocky area meets the sea and explain that this is the intertidal area.

Read the first paragraph on page one.

What are the ways Miles says you can describe things?

1. Comic: what does it mean to be comic? A comic strip or a joke?
2. Scientific: what does it mean to be scientific? Is it always boring?
3. Poetic: what does it mean to be poetic? Can a song or a rap be poetry?

Activity #1 Presentation. Interpretive Reading and Comparative Drawing Using The Highest Tide

Tell the students you have found some examples in the book that are very descriptive, and you are going to read a few of them out loud while they follow along. While you are reading them, they are going to do two things at the same time.

1) Up at the board, the class is going to test Jim Lynch's descriptions, and the "mind's eye" of our listeners. As you read along, at least 2 drawers are going to draw what they visualize.

2) At the same time, the class needs a group of categorizers. As you all read, the categorizers will try and decide what style of description the passage is: comic, poetic, or scientific—or a mixture. These categorizers should jot down key words and phrases that make them think a passage belongs in one category or another.

[You can divide up the rest of the class into artists and categorizers as you see fit, for each description, to keep everyone participating and seeing things from new angles.]

For Poetic:

1. Read page four, second paragraph, about the Moon Snail; and project or show an image of the moon snail after students have attempted to draw it.
2. **Can you tell what type of description this is?** It is both poetic and scientific- see if the students can distinguish which parts are which.
Where is it poetic and where is it scientific?
Is the scientific more boring to you?
Which parts do you think are more educational? Why?
Which parts are more emotional?

For Scientific:

1. Read page four about Moon snails (the middle section); page six about the Nudibranch; page eight about the giant squid; and page nine about the range of the giant squid. Project an image of each species after the students draw them.
2. **Can you tell what type of description this is?** The Nudibranch passage is mostly scientific, but some poetry in there.
Where is it scientific and where is it poetic?
-The passage about the Giant Squid is more scientific, especially in its discussion of range.
Is there any humor in it?

For Comic:

1. Read pages 52-53 about the barnacles.
2. **Can you tell what type of description this is?** It is mostly comic, but it also conveys information about how barnacles reproduce.

Activity #2 Presentation. Marine/Intertidal Organism Inquiry: Creative Writing in 3 Descriptive Genres

Next, tell the students that they are going to get a chance to explore these different

description styles with real preserved marine and intertidal specimens. Use the below “starting point for inquiry” to begin this activity. It is suggested that you break the allotted writing time up into three segments: one for the scientific, one for the comic, and one for the poetic description of their organism, since each style may need its own prompt, and each piece of writing needs its own deadline.

Starting Point For Inquiry:

The Highest Tide shows that there are many ways to present information; none of them have to be “pure,” but if they are done well, they convey a clear picture or feeling in your mind. What a person might not realize from reading the book is that **writing** descriptive detail about something helps you understand it better too. You have to get a picture in your own mind in order to send it to someone else’s mind. So now everyone will have a turn to practice these different styles of description.

Look at the specimens of intertidal organisms provided here, just like the ones described in The Highest Tide. Take one and describe it three ways: poetically, comically, and scientifically.

Scientific Description Prompt: Use the textbooks and field guides we have, as well as your teachers, for more information about the creatures. You can also refer to the novel for ideas. This exercise is less about scientific accuracy and more about exploring detailed and interesting description. Imagine that you are reading your words out loud to someone who has never seen this organism. Will the person know how big it is? What colors it is? Does it have legs, fins, tentacles? A shell, or no shell? How does it eat? Your writing can be creative and fun, but should contain enough information that the person can draw a picture of the creature from listening to your description.

Comic Description Prompt: What is remarkable or peculiar about this organism? Is there something kind of weird about it? Comedy is all about seeing familiar things from a new angle. Since marine and intertidal creatures are not that familiar to most humans, this is not too hard for us! This is your chance to make fun of the creature. Don’t worry—humans are weird to them, too, and they would be laughing their heads off about us...if they had one! Focus on some specific aspects of the creature that help identify it, but feel free to make up parts. Fiction is fine. Your writing can be a song, a rap, a comic strip, or a comedic stand-up, if you want.

Poetic Description Prompt: Remember that poetic description emphasizes the **feelings** that people have about a person, object, place, etc. What kind of feeling do you get when you look at or touch the creature you are describing? When you read the text or guidebook about this creature, what kind of feeling are you left with? Can you write a song or a rap that is all about this feeling? You can make up fictional parts of

this one, too, but as with the others, include as much detailed description as you can. Remember to use all your senses!

Presenting Final Results:

Follow this activity with time for students to present their work to the class, or, collect the student work and read them aloud anonymously.

Assessment Methods:

It is recommended that you assess student work by collecting their written descriptions at the end of the allotted time. You could assess the work based on the quality or simply by assessing whether they completed each of the three descriptive styles.

Reference List

English Language Arts Content Standards for California Public Schools, Kindergarten Through 12th Grade: <http://www.cde.ca.gov/be/st/ss/documents/elacontentstnds.pdf>

National Science Education Standards: <http://www.nap.edu/catalog/4962.html>

Lynch, Jim. *The Highest Tide*. New York: Bloomsbury U.S.A., 2005.

“poetic”. <http://www.merriam-webster.com/dictionary/poetic> (2 June 2011)

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