The content area topic for the text set is Biology Origins and Development of Life. The text set is composed of mostly fictional treatments of development issues. The purpose of the set is to snag students into being curious about life development issues. Most biology students, even honors students, come to see biology as dry and too technical to be very interesting. The purpose of this project is to inject an element of excitement, and in the case of four books in particular, fear into an otherwise dry as dust area.

Far Below Grade Level

*Genetics The Study of Heredity*, by Ian Graham is a non-fiction picture book. It is lavishly illustrated with full color photography, and covers, in capsule form, most of the current text topics in genetics, with references to movies and television. Readability: Grade 5.

*Jurassic Park*, by Michael Creighton is a classic horror story about genetic researchers who find DNA trapped in mosquitoes discovered in amber. They are able to extract the DNA and clone the dinosaur it came from, which they then raise into adult dinosaurs, which of course escape their cages and begin devouring people. It is a bit of a stretch technically but leads to many thrills and will certainly get teens interested in genetic engineering. Readability: Grade 5.
*The Puppet Masters*, by Robert A. Heinlein, is an adventure story about alien invaders who can take over a person by entering the body of the victim as a parasite. Getting a thrilling adventure out of parasitic relationships is a true piece of writing magic. Readability: Grade 5.

**Somewhat Below Grade Level**

*Farmer in the Sky*, by Robert Heinlein is a simple tale of earth colonists going to Ganymede to settle and set up a farming colony. It gives a good example of the interdependency of an ecosystem and the planning necessary to establish one. Told from the viewpoint of a resourceful teenage boy. Readability: Grade 6.

*Beyond This Horizon*, a novel by Robert Heinlein about a future genetically engineered society in which life has become cheap by virtue of being too easy. There are some citizens left unchanged as genetic "Control Naturals" so as to preserve the original unaltered state. This can be very thought provoking for youngsters who assume generally that all scientific progress is good. Readability: Grade 6.

*Cell*, a novel by Steven King, tells the story of an electronic pulse broadcast simultaneously to every cell phone in the world which causes instant insanity to any person who was using the phone at the time, sending humans back to their most primitive roots. The book looks at people with all the veneer of civilization stripped away as well
as all socialization. It also gives a good example of brain chemistry’s vulnerability to outside influences. Readability: Grade 6 (with mature themes).

*Dr. Franklin’s Island*, by Ann Halam is an adventure tale of three young survivors of a plane crash rescued by a demented scientist who uses them for a gene alteration experiment. Scary and interesting, it is the kind of tale that sweeps young people along and stimulates real interest in genetics. One girl, in AP Biology, told me it was the book that got her interested in biology to begin with. Readability: Grade 6.

*The Moon is a Harsh Mistress*, a science fiction novel by Robert A. Heinlein based on the concept that a biological system is a closed system with everything connected to every other thing and all dependent on each other. An earth-based bureaucracy is exploiting the moon and the “moonies” revolt. The story is fast paced and exciting, creating a novel social system in which the action occurs. Told from the viewpoint of a teenager caught up in the war. Readability: Grade 6 (but with mature themes).

*Fantastic Voyage* a novel by Isaac Asimov about a team of scientists shrunken to submicroscopic size taking a voyage through the blood stream of a human body to find a blood clot. Exciting and well written, this is actually based on a movie plot, but with much more realism. Readability: Grade 7.

“Murphy’s Hull,” is a short story by Poul Anderson, which I have in an audio book, read by the author. I plan to play it as a read aloud during the consideration of how life arose
on Earth in the beginning. There is no scientific explanation of how life arose from the
primordial soup that existed in the early stages of earth, although it is assumed that it was
through some spontaneous process involving lightning hitting organic molecules. No one
has ever been able to duplicate this in the laboratory despite much trying. Anderson’s
short story tells in a very understated way of how it might have happened, by picking up
the narrative when the original planters of life on earth return to see how things are going.
Readability: Grade 7.

Mercury, by Ben Bova is a novel set in a future world dealing with life after the earth
goes over the global warming greenhouse cliff. This well-written speculative fiction
adventure novel will help teenagers see how the science of climate change could affect
their lives. Readability: Grade 7.

“Solution Unsatisfactory” is a short story by Robert A Heinlein that looks at what would
have happened if the Manhattan project had gone for a biological contamination approach
instead of the bomb. It raises ethical questions about an approach that was in fact a real
possibility. Readability: Grade 8.

At Grade Level

Cloning, Frontiers of genetic Engineering, a lavishly illustrated book on genetic
engineering possibilities by David Jefferts, complete with photos of two headed turtles
and possible wooly mammoth clones, is a delight to the eye and just gross enough to be
captivating to a certain segment of the classroom. Readability: Grade 10.
Above Grade Level

*Genome the autobiography of a species in 23 chapters* by Matt Ridley is a fascinatingly written story of a trip through the human genome, chromosome by chromosome, giving a plausible explanation of how we came to be who we are. Readability: Grade 11.

*In Search of Penicillin* by David Wilson is a deeply technical narrative of the step-by-step process of the discovery of penicillin and the drama of the all-out effort to produce enough of it to be medically useful. The boneheaded reluctance of various doctors and scientists to embrace the urgent need for this miraculous drug is made clear to the point of the reader wanting to scream at the participants. Readability: Grade 17.

**Readability**

Readability was estimated using the Flesch-Kincaid assessment tool on Microsoft Word, the Fry Readability scale, and the Lexile Framework for Reading, which has several attractive features including a matching assessment for evaluating the individual reader coordinated to the Lexile system. The results of these scales seemed fairly consistent partially because the Lexile scale is a bit vague on grade level, giving a range for readers in the grade level which assumes that one has conducted the a Lexile assessment on the individual student. In the case of several of the texts selected the grade level given is obviously a bit low due to the extensive use of dialogue which gives a lower reading than narrative text and especially when the topic areas are more mature. Several of the texts listed as being fifth grade in text difficulty are books one would never give to a fifth
grader due to the sexual mores described as well as the brutality portrayed. However this is precisely why these texts were seen as desirable for this project, the essence of which is to inject some excitement and interest into Biological topic areas for teenagers who are beginning to cope with some of these themes and problems in their lives.

**Bibliography**


