
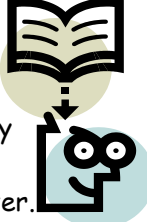










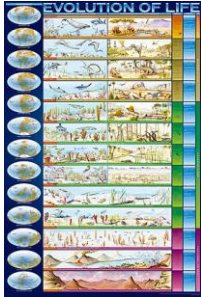




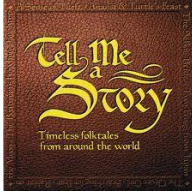



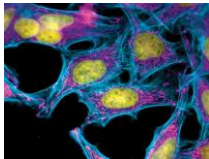


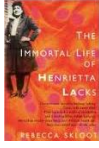




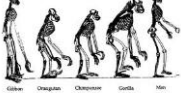


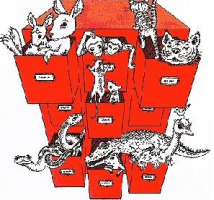







7th Grade Science Enrichment Options



<p style="text-align: center;">Chapter Review Game</p> <p><u>Description:</u> Create a game to review the concepts for one or more chapters covered this quarter. A complete game will include; rules, game board, questions, and game pieces.</p> 	<p style="text-align: center;">Literature Review</p> <p><u>Description:</u> Read a fiction or non-fiction book that relates to life science, and create a presentation of the information from the book in an innovative way such as a storyboard, brochure, video, or poster. Book title must be pre-approved. See teacher for suggestions.</p> 	<p style="text-align: center;">Thinking Like a Scientist</p> <p><u>Description:</u> Research a life scientist and discover their contributions. Present your findings in an interview, scrapbook, story, or other creative format. Turn in the product with a bibliography including at least three sources!</p> 
<p style="text-align: center;">Science in the Media - TV or Print (Biology or Scientific Method)</p> <p><u>Description:</u> Watch a science documentary or read a science article. (Must be at least 2 pages in length.) Write a summary including one paragraph overview of the content and one paragraph reaction to the content. Include a correct bibliography.</p> 	<p style="text-align: center;">Science and the World</p> <p><u>Description:</u> Go to a museum, nature center, zoo, or botanical garden and create an activity guide with a minimum of 15 questions about the educational aspects of that location. Ideally this could be used in later quarters by other students as an enrichment option.</p> 	<p style="text-align: center;">Make A Cartoon/Song/Poem</p> <p><u>Description:</u> Make a cartoon, song, or poem that reinforces or explains one of our topics of study.</p> 
<p style="text-align: center;">Choose A Lab</p> <p><u>Description:</u> Select a lab from the textbook and conduct it at home. Create a 3 minute video, a scrapbook or other documentation that shows how to do the lab and what the results are. Turn in lab write-up including an in-depth conclusion.</p> 	<p style="text-align: center;">Make a movie on the chapter</p> <p><u>Description:</u> Create a movie that summarizes and explains the key concepts from the current chapter. The video should be no longer than 3 minutes and could be used to introduce the chapter to future students.</p> 	<p style="text-align: center;">Create Your Own (See instructor if you have a great idea)</p> <p><u>Description:</u> MUST be agreed upon in advance. Write proposal on a Separate page and submit signature and approval.</p> 
<p style="text-align: center;">Cal Tech Science Events</p> <p><u>Description:</u> Attend one of the Cal Tech science events. The events are listed on the Cal Tech website: http://events.caltech.edu/series.html Write and evaluation or create a presentation of the material that you learned.</p> 	<p style="text-align: center;">Interview a Scientist</p> <p><u>Description:</u> Interview a scientist related to Life Science. Type up questions, at least 10, and record your conversation. Present learning in an innovative way.</p> 	<p style="text-align: center;">Field Journal</p> <p><u>Description:</u> Create a field journal. Keep a regular journal of natural observations of a specific area. A park, the Arroyo Seco or your back yard. Record both qualitative and quantitative observations and include photographs or illustrations.</p> 

<p align="center">Educational Poster</p> <p><u>Description:</u> Create an educational poster with information and visuals that reinforce some part of our current curriculum. Make sure that you include a bibliography to document your references.</p> 	<p align="center">Socratic Seminar Article Collection</p>  <p><u>Description:</u> Find an article that you think would be appropriate for a Socratic seminar. Copy the article (make sure the copy write information is included) Write a list of questions that would go along with the article. Include knowledge, reflection, and analysis questions.</p>	<p align="center">Content Focused Movie Review</p> <p><u>Description:</u> Choose a movie that aligns with the current course of study. Written student reflection needs to include a summary of the movie, a critical analysis of the scientific relevance of the movie and three critical thinking questions that pertain to the movie answered in detail.</p>  <p>See movie suggestions at the bottom of the options list - Some movies are PG or PG-13, make sure you have your parent's consent/support before viewing</p>
<p align="center">Create A Cell Model</p>  <p><u>Description:</u> Find a creative way to represent a cell. You can create a prokaryotic cell, plant cell or animal cell. All organelles must be labeled and included. A separate list of the organelle's function must be included.</p>	<p align="center">Cell Organelle Field Guide</p> <p><u>Description:</u> Create a field guide including identification and background on the structure and function of each organelle.</p> 	<p align="center">Write a Short Story</p> <p><u>Description:</u> Write a short story that reinforces one of our topics of study.</p> 
<p align="center">Research a Genetic Disorder</p> <p><u>Description:</u> Research a genetic disorder and create an informational brochure or PowerPoint a genetic causes and effects of this disorder. Include a resource bibliography.</p> 	<p align="center">Genetic Genealogy Research</p> <p><u>Description:</u> Interview members of your family. Collect your family history into a creative format that traces at least 3 genetic traits or diseases. Include a family tree.</p> 	<p align="center">Science and Nature</p> <p><u>Description:</u> Go to a state or national park and create an activity guide with minimum of 15 questions about the educational aspects of that location. Ideally this could be used in later quarters by other students as an enrichment option.</p> 
<p align="center">Research HeLa Cells</p> <p><u>Description:</u> Research one of the studies done on HeLa cells and write a report on what was done and what was learned from this study. Include a resource bibliography.</p> 	<p align="center">ABCs of Genetics</p> <p><u>Description:</u> Assign a genetics-based term to each letter of the alphabet and explain why it is related. (A- alleles, B-base pairs, etc.)</p> 	<p align="center">Make A History of Life on Earth Timeline</p> <p><u>Description:</u> Create a visual timeline that accurately explains the time intervals and changes on earth.</p> 

<p>Read <u>The Immortal Life of Henrietta Lacks</u></p> <p>Description: Read <u>The Immortal Life of Henrietta Lacks</u> by Rebecca Skloot and create a response that shows your evaluation and response to the literature. Please see instructor for details, this is a fascinating non-fiction book that has mature themes. Parent approval is needed.</p> 	<p>Genetics Ethics</p> <p>Description: Research a genetics ethical issue. Create a presentation, poster, or brochure that explains the genetic issue and the ethical concerns that surrounds it. Include a resource bibliography.</p> 	<p>George C. Page Museum & La Brea Tar Pits</p> <p>Description: Create an activity guide, brochure or journal that focuses on the educational aspects of this museum. Focus on the specific ways this information ties into our standards for Earth Science.</p> 
<p>Animal Testing</p> <p>Description: Research animal testing and focus on the pros and cons of this ethical issue. Create a presentation, poster, or brochure that explains both sides of the issue and the ethical concerns that surrounds it. Include a resource bibliography.</p> 	<p>Mendel & Darwin Letters</p> <p>Description: Create a theoretical series of pen pal type letters between Gregor Mendel and Charles Darwin. If they had been in contact what would they have shared, and what could they have learned from one another?</p> 	<p>Species Evolution</p> <p>Description: Research the evolution of a specific species (similar to the way our textbook focuses on whale evolution). Create a visual way of showing the evolutionary changes over time, adaptations and possible future of this species.</p> 
<p>Pali Camp Reflection</p> <p>Description: Create a media based presentation that summarizes the Pali Science trip and focuses on the scientific learning and merit.</p> 	<p>Read California Blue</p> <p>Description: Read California Blue by David Klass and create a response that shows your evaluation and response to the literature.</p> 	<p>Classification Project</p> <p>Description: See Mrs. Williams for the guidelines on the in-depth classification project.</p> 
<p>Huntington Conservatory Visit</p> <p>Description: Create an activity guide with a minimum of 15 questions about the educational aspects of this amazing conservatory. Ideally this could be used in later quarters by other students as an enrichment option.</p> 	<p>Visit Los Angeles Science Center</p> <p>"World of Life"</p> <p>Description: Create an activity guide and answer key with at least 15 critical thinking questions about the activities and information in the "World of Life"</p> 	<p>Animal Researchers</p> <p>Description: Chose a famous animal researcher and discover their contributions. Present your findings in an interview, scrapbook, story, or other creative format. Turn in the product with a bibliography including at least three sources! See Mrs. Williams for suggestions.</p> 

<p>Attend California Science Fair</p> <p>Description: Attend the California Science Fair @ California Science Center. Write an explanation of 5 different projects that interest you that you may consider doing in 8th grade.</p> 	<p>Create a Public Service Announcement focusing on the dangers of drugs and alcohol</p> <p>Description: create a movie that is no longer than 3 minutes that focuses on the specific effects and dangers of a specific drug and has a positive message on the reasons to avoid drug use.</p> 	
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Movies:

- <https://labiotech.eu/tops/best-biotechnology-movies-tv-series/>
- <http://www.davidbrin.com/sffilms.html>
- The Immortal Life of Henrietta Lacks - <https://www.hbo.com/movies/the-immortal-life-of-henrietta-lacks>

Possibilities of Science

Films that explore the scientific ideas or scientists that spring from our imagination.

- [2001: A Space Odyssey](#) (1968) This Stanley Kubrick film deals with issues of artificial intelligence and human evolution. No film ever paid closer heed to the plausible look and feel of the technologies of interplanetary flight. It begins with the discovery of an ancient monolith on the moon, which has apparently guided human development. A spaceship, piloted by the computer HAL, sets off to investigate a signal coming from Jupiter. There, astronaut Dave Bowman detects HAL's errors, disconnects the computer, then goes on to achieve the next step in human destiny, the Star Child.
- [The Andromeda Strain](#) (1971) Based on a novel by Michael Crichton, the film follows scientists who investigate a microbe of extraterrestrial origin that arrives when a military satellite crashes on earth. Humans begin dying when this microorganism causes blood to rapidly coagulate.
- [Contact](#) (1997) Based on a novel by Carl Sagan, Jodie Foster plays a scientist who receives a radio message from another world. She decodes the message to reveal plans for building a spaceship, which she uses to make contact with alien species.
- [The Day After Tomorrow](#) (2004) A series of global catastrophes unfold as Earth enters a new ice age. Populations move south to warmer climates; meanwhile, a climatologist (played by Dennis Quaid) heads north to New York to rescue his son.
- **Destination Moon** (1950) Robert Heinlein's movie about a lunar expedition, explaining some of the basics along the way.

- [Donald In Mathmagic Land](#) (1959) Nominated for an Academy Award, this cartoon features Donald Duck entering a fantasy land, where he explores the connections between music, art and math, then journeys to ancient Greece, where Donald meets Pythagoras. The film ends with Galileo's quote: "Mathematics is the alphabet with which God has written the universe".
- [Extraordinary Measures](#) (2010) Two parents struggle to develop a drug to save the lives of their two children suffering from Pompe disease. Brendan Fraser and Harrison Ford star.
- [Fantastic Voyage \[Blu-ray\]](#) (1966) Despite some silliness and tight-spandex pulchritude, it does take you on a tour of the human circulatory, lymphatic, pulmonary and phlegm systems aboard a cool submarine.
- [Gattaca](#) (1997) This science fictional film explores whether genes are destiny. It depicts a society where genetic engineering is used to select the best possible hereditary traits, resulting in a tiered society, where 'normal' humans are given only menial jobs. Ethan Hawke and Uma Thurman star.
- [Life After People \(History Channel\)](#) (2008) How will all of Man's works deteriorate, once we're gone?
- [Medicine Man](#) (1992) Sean Connery plays a doctor seeking a cure for cancer in the Amazon rain forest, fighting against a logging company razing the forest.
- **Mindwalk** (1990) A conversation between a scientist, a politician and a poet, with insights into philosophy, quantum mechanics and particle physics.
- [Moon \[Blu-Ray\]](#) (2009) For three long years, Sam Bell (played by Sam Rockwell) is stationed at a lunar manufacturing base, with only a computer, GERTY, for company. Isolated, he begins to hallucinate. Just before his return to earth, Sam has an accident....
- [No Highway In The Sky](#) (1951) James Stewart stars as an aircraft engineer investigating an airline crash, which he attributes to metal fatigue. He begins testing his theory in the laboratory. Meanwhile, he finds himself aboard one of these planes, and he intervenes to stop the flight, warning the crew and passengers of the danger.

Real science

Films based on real scientists or real people turning to science for solutions.

- [Apollo 13](#) (1995) "Houston, we have a problem." Ron Howard directed this stirring story of NASA's real-life crisis. En route to the moon, an oxygen fuel-cell tank exploded, cutting electrical power and the astronaut's air supply. The film shows the crew interacting with mission specialists back on earth to rig solutions as they retreat to the lunar module for a desperate return voyage to earth. Tom Hanks is Commander Jim Lovell.

- [Awakenings](#) (1990) Based on a true account from neurologist Oliver Sacks, a doctor (Robin Williams) uses a new drug to revive a catatonic patient (Robert De Niro), who awakens to life for a brief interval.
- [The Dam Busters](#) (1955) Based on a true story, the film follows the RAF's development of a bomb to attack dams in the Ruhr Valley, hindering Germany's industrial development during World War II.
- [The Dish](#) (2000) A fictionalized account of the true story. Australian scientists based at Parkes radio telescope, work to relay the television footage of man's first steps on the moon. Sam Neill stars.
- [Edison the Man](#) (1940) A fictionalized account of Thomas Alva Edison (played by Spencer Tracy), following his inventions of the phonograph and light bulb.
- [Gorillas in the Mist](#) (1988) The true-life story of Dian Fossey (played by Sigourney Weaver) and her work in the jungles of Rwanda, studying the rare Mountain Gorillas, as she fights to save them from poachers and habitat loss.
- **Hidden Figures** (2016) The untold story of the "human computers," black female mathematicians who helped launch John Glenn into orbit at the start of the U.S. space program.
- **Infinite Voyage** (1987-1991) A five-year [television series](#) about humanity, the stars, the dinosaurs, and other mysteries of the world and the universe.
- **Infinity** (1996) A biographical film about Caltech physicist Richard Feynman (played by Mathew Broderick), based on his book "What Do You Care What Other People Think?" It shows Feynman's early years, then follows his work at Los Alamos National Laboratory, and on through his wife's death from tuberculosis.
- [Inherit The Wind](#) (1960) A fictionalized account of the 1925 Scopes Monkey Trial. Two lawyers argue for and against the teaching of evolution in schools. Spencer Tracy and Frederic March star.
- [Lorenzo's Oil](#) (1992) Based on a true story of two parents, the Odone (Susan Sarandon and Nick Nolte), research and challenge doctors to develop a cure for their son, who suffers from the rare degenerative disease, adrenoleukodystrophy.
- [Madame Curie](#) (1943) A biographical film of Nobel-prize winning physicist Marie Curie (played by Greer Garson), and her husband Pierre Curie, as they undergo hardship to isolate radium from pitchblende rock, learning about radioactivity.
- [March of the Penguins](#) (2005) A documentary film that shows Emperor Penguins' rituals of courtship and breeding, as they travel across Antarctic ice to reach the ocean.
- [Microcosmos \[Blu-ray\]](#) (1996) A documentary of insect life.
- [October Sky](#) (1999) Based on the book "Rocket Boys," the movie tells the story of a coal miner's son who was inspired by the Sputnik launch to build and test model rockets while in high school, eventually becoming a NASA scientist.

- [Planet Earth: The Complete Collection](#) (2006) A documentary consisting of eleven episodes, shot in high definition showing Earth's topography and diversity in all its glory. Narrated by David Attenborough.
- [The Films of Charles & Ray Eames, Vol. 1: The Powers of 10](#) (1977) A short film directed by Ray and Charles Eames, depicting the vastness of the universe, as it steps in magnitude from the galactic to subatomic scale.
- [The Right Stuff](#) (1983): The story of the early days of NASA's space program, focusing on the selection and training of original Mercury astronauts: John Glenn, Gus Grissom, and Alan Shepard, as well as the story of Chuck Yeager breaking the sound barrier. One of my personal favorites.
- [Something the Lord Made](#) (2004) A dramatized portrayal of the partnership between two doctors (played by Alan Rickman and Mos Def) who pioneered early advances in heart surgery. The film also deals with issues of racism in the times of Jim Crow.
- [The Story Of Louis Pasteur \[VHS\]](#) (1935) Considered one of the best bio-pictures, follows the great biologist's discovery of vaccines for anthrax and rabies and his campaign for cleanliness vs. infection. (played by Paul Muni)
- [Temple Grandin](#) (2010) Based on books by Dr. Temple Grandin (played by Clare Danes), an autistic woman who became a professor of Animal Science at Colorado State University.
- [Winged Migration](#) (2001) A documentary film showing gorgeous aerial footage of birds struggle against the elements in their migratory journeys.