

Course Descriptions

Select courses based on the grade the student will complete in June 2009.
Faculty listed are subject to change.



COMPLETING KINDERGARTEN IN JUNE 2009

NO HOMEWORK



Oviparous Animals

An “Egg-citing” Adventure (AM or PM)

2901	8:30–12:00	Cristol Lee Park
2902	1:00–4:30	Cristol Lee Park

Tuition: \$460 • Materials fee: \$65 • Total: **\$ 525**

In this class, we explore animals that hatch from eggs. Students use the scientific methods of observation, hypothesis testing, experimentation, and conclusion to further our learning in egg dissecting and egg properties. We also examine many types of eggs to learn about their size and strength and how they protect the embryo inside. Students learn about various animals that hatch from eggs, including birds, insects, arachnids, amphibians, and reptiles as well as animals that live in water. Finally, after constructing “safe” containers in which an egg will be placed, they will drop a container from a height of nine feet and discover which design is best suited for protecting the egg.



Rocky Reefs and Tide Pools (AM or PM)

2903	8:30–12:00	S. Patel & D. Castillo-Shadic
2904	1:00–4:30	S. Patel & D. Castillo-Shadic

Tuition: \$460 • Materials fee: \$65 • Total: **\$ 525**

Our goal is to introduce students to how plants and animals in California’s tide pools depend on each other to live. We will study different tidal pool relationships using methods of investigation in both earth and life sciences. Using the scientific methods of observation, hypothesis testing, experimentation, and conclusion, we will further our learning in such subjects as water chemistry and animal anatomy. The inner and outer workings of the tide pool plants and animals will be brought to life with different projects in drama, arts and crafts, and daily journals. Other activities include a squid dissection and a marine touch-tank presentation.





COMPLETING FIRST GRADE IN JUNE 2009

HOMEWORK: UP TO 20 MINUTES PER DAY

Greek Mythology (AM or PM)

2911	8:30–12:00	Laura Schooley
2912	1:00–4:30	Laura Schooley

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Enter the exciting and interesting world of Greek myths. In this course, we will study a variety of myths about the heroes, tricksters, monsters, gods, and goddesses of Ancient Greece. We will engage in a range of hands-on and integrated activities in the curricular areas of art, history, science, and language arts. We will respond to stories through class discussions, small group projects, and role playing. In a busy workshop atmosphere, we will explore, question, and extrapolate the meanings these ancient myths have for us in modern times. Parents will be encouraged to assist in responding to myths in a homework journal. Finally, in the spirit of ancient Greece, students will come to Open House dressed as their favorite mythical figure, and entertain guests with role plays of some of the myths we have studied, and feast on the delights of the gods and goddesses of Mount Olympus.



Mathmagic! (AM or PM)

2913	8:30–12:00	Jody Goodman & Sacha Moustakas
2914	1:00–4:30	Jody Goodman & Sacha Moustakas

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Grab your hat and wand and join in the fun! In this class, we will be developing our pre-algebra and reasoning skills while continuing to master our basic math operations. We will investigate binary numbers, the Fibonacci sequence, googols, and more. After reading engaging folktales from around the world, we will follow up with intriguing mathematical investigations. We will play logic and reasoning games like Pico, Ferme, Bagel, and NIM. Throughout the class, we will be learning math “tricks” that we will share on the last day of class in our magic show.

Sea Studies (AM or PM)

2915	8:30–12:00	Eden De Guzman
2916	1:00–4:30	Eden De Guzman

Tuition: \$460 • Materials fee: \$60 • Total: **\$ 525**

In this oceanography course for beginners, we will have a whale of a good time exploring the abundant and varied life of giant kelp beds and the world of the ocean depths. The goal of this class is to explore, examine, and understand the interdependence of various plants and animals in different tidal zones. We will study a variety of topics: oceanic ecosystems, the ways plants and animals of the ocean survive, the ways predators and prey use the seascape for camouflage and concealment, and the effects of the tides and currents on plants and animals.

We will work on identifying relationships between living things and their environment and record what we learn in our science journals. We will also use writing projects and dramatic play to communicate what we have learned. Applying our knowledge of the sea, we will construct art models of the wonderful underwater world.





COMPLETING SECOND GRADE IN JUNE 2009

HOMEWORK: UP TO 20 MINUTES PER DAY



Applying Mathematics (AM or PM)

2921	8:30–12:00	Julie McNamara
2922	1:00–4:30	Julie McNamara

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

In this course, we will approach mathematics as a sense-making endeavor as we apply our math skills to games, logic puzzles, and story problems related to real-life experiences. We will record our thinking in math journals, and learn to communicate about mathematics in ways that require us to be creative thinkers, approach problems in a systematic or logical way, observe patterns, and generalize our findings. Throughout the course, students will work individually and in groups, with an emphasis placed on the importance of communication, mathematical risk-taking, and the value of diverse approaches to solving problems.

Exploring Light and Vision (AM or PM)

2923	8:30–12:00	Jennifer Pfothenauer
2924	1:00–4:30	Jennifer Pfothenauer

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

When you look in a mirror, why does it seem like you're inside the mirror? How do optical illusions play tricks on us? What exactly is light anyway? In this course, we will investigate the basic properties of light and how our minds perceive visual information. Through hands-on activities we will study depth perception, the persistence of vision, reflection and refraction, parts of the eye, light waves, and many other topics. We will also build kaleidoscopes, periscopes, and projectors. Throughout the course our focus will be on exploring the relationship between light, vision, and how we perceive the world.

Writing and Drawing the World

2926	1:00–4:30	Elizabeth Carter
-------------	-----------	------------------

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Through art, we will learn about observation and description to develop our writing. We will use poetry and pictures to sharpen our skills of perception, as well as our writing and drawing skills. We will translate what we see into words and transform shapes into curved and straight lines on the page. Next, we will create illustrations from poetry and descriptive prose, and write about pictures in haiku and verse. Finally, we will explore the concept of perspective by writing and drawing from different points of view.

Rainforests (AM or PM)

2927	8:30–12:00	Carol Ponzio
2928	1:00–4:30	Carol Ponzio

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Explore the wonders of the tropical rainforest in this course created for young scientists. Together, we will investigate different aspects of rainforests: their plants and animals, their people, and their products. We will grow rainforest habitats in small groups and keep science journals detailing our observations through drawing and writing. We will research animals and write and create art projects about them. Also, we will discover just how many rainforest products we use in our daily lives and use many of them in recipes to make tasty treats. Throughout this course, the emphasis will be on the essential nature of the world's rainforests: why we need the rainforests on our earth and what we can do to preserve them.



Jazz Up Your Writing

2929	8:30–12:00	Olivia Sanders & Patrick Hamilton
-------------	------------	-----------------------------------

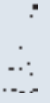
Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

In this course, we will explore the intersection of language, poetry, and music. Our musical journey begins with a focus on the rhythm of language. We will learn about using rhetorical devices such as personification, onomatopoeia, and metaphors, to improve our descriptive writing and to analyze themes. Moving on to the interlude, we will work independently and as a group to develop original songs, which will be set to acoustic guitar accompaniment. The crescendo of our composition will include working together to create a class song book, which will showcase our songs, creative writing, and use of literary devices. Our finale will include publication and performance of our original compositions, both musical and written. Come join the band!



COMPLETING THIRD GRADE IN JUNE 2009

HOMEWORK: UP TO 20 MINUTES PER DAY



Authors' Corner (AM or PM)

2931	8:30–12:00	Heather MacLeod
2932	1:00–4:30	Heather MacLeod

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Authors' Corner is a writing workshop for students who love to write. We will write about what is important to us—true stories about our lives, fiction, and poetry. We will observe the world, tell stories aloud, and then write about our observations and stories. We will read books to learn how authors create suspenseful plots and engaging dialogue. We will write informally in journals, and revise and edit a finished piece of fiction.



Q What do the materials fees pay for?

A *In addition to the supplies and equipment used in class, the fees also cover photocopying and field trips.*

Human Anatomy (AM or PM)

2933	8:30–12:00	Jill Bergan
2934	1:00–4:30	Jill Bergan

Tuition: \$460 • Materials fee: \$60 • Total: **\$ 525**

Our study of anatomy will consist of hands-on student projects—including students' constructions of life-sized models of themselves from the inside out—and dissections of animal bones, skin, muscles, hearts, lungs, livers, kidneys, and eyes (all fresh specimens from a local inspected meat-packing house). We will also study some related chemistry, art, mythology (e.g., Achilles' heel), and history. Parent volunteers are encouraged and welcome to participate in our class.



Q Am I still a returning student if I haven't attended in a few years?

A *Yes, you are!*

Mathematicians' Workshop (AM or PM)

2935	8:30–12:00	Daniel Wolf-Root
2936	1:00–4:30	Daniel Wolf-Root

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Calling all math lovers! In this course students will dive into mathematical reasoning and risk-taking. We will learn to develop multiple problem-solving strategies, evaluate our results, and explain our thinking to others. We will see how to apply our understanding of number sense, geometry, probability, and algebra to daily, real-life situations. By working both independently and collaboratively, students will find creative solutions and build their mathematical brainpower. This class will provide students with a supportive and fun environment for interaction with other students who love mathematics.

Q Should I encourage my child to take a class outside his or her area of greater strength?

A We generally recommend that parents discuss all the course options with their children and that they choose together the class that best capitalizes on the children's academic strengths and deep interests. When making course selections, remember that ATDP classes move at a rapid pace, and it is important that all students be willing and able to keep up with the challenging work.



Those Wonderful Simple Machines! (AM or PM)

2937	8:30–12:00	Michele Harrison
2938	1:00–4:30	Steve Monson

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

In this course, we will learn about simple machines: levers, pulleys, wheels and axles, inclined planes, wedges, and screws. We will study their origins, usefulness, and relationships to other machines. We will have hands-on opportunities with simple machines, draw pictures, and make our own models. While learning that gadgets are based upon the principles of simple machines, we will try to “stump” one another with unusual gadgets. We will learn about Ruben Lucius “Rube” Goldberg and his famous gadget cartoon pictures. As homework each of us will design and build a simple working model of his or her own Rube Goldberg-inspired gadget. After working a little at home every day in order to plan, assemble, and complete our final course projects by the last day, we will then present them for our Open House.





COMPLETING FOURTH GRADE IN JUNE 2009

HOMEWORK: UP TO 25 MINUTES PER DAY



Energy (AM or PM)

2941	8:30–12:00	Sarah Dornisch & Peter Stewart
2942	1:00–4:30	Sarah Dornisch & Peter Stewart

Tuition: \$460 • Materials fee: \$60 • Total: **\$ 525**

In this course, we will discuss the concept of energy and the law of conservation of matter and energy. We will explore different types and forms of energy, including kinetic vs. potential, mechanical, chemical, electrical and solar. Through hands-on laboratories, we will explore the properties and transformations of these various forms of energy. Through writing and classroom discussions, we will develop critical thinking skills by taking an inquiry approach to learning about everyday uses of energy. Class projects include making a battery, creating electric circuits, designing and making a solar racecar, and designing an advertising campaign to encourage the use of renewable energy.



Mathematical Investigations

2944	1:00–4:30	Richard Kleine
-------------	-----------	----------------

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Mathematical Investigations is designed to allow students to swim deeply in a rich mathematical pool. We will take big ideas in statistics and probability, geometry, and number theory and examine them from many perspectives through active problem solving and games. We will study different problem solving strategies and create connections between math strands and applications to children’s lives. In addition, there will be a daily Math Workshop where students get to choose from a variety of mathematical challenges and work on them with the support of others who share their interests. Our emphasis is on the fun and excitement that comes with discoveries in math.

Writers’ Circle (AM or PM)

2945	8:30–12:00	Richard Kleine
2946	1:00–4:30	Manuel Herrera

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Using imagination and creativity, we will develop our thoughts and ideas to make them come alive on paper. We will learn how to paint a picture with words when describing a character, setting, or scene. We will sample and analyze the creativity of both published authors and our own writing, learning and discussing what each has to say. Then we will apply what we’ve learned about expressing our thoughts and ideas in writing by producing our own stories, poems, and more!



Q May I take two classes?

A While Elementary Division students may NOT take two classes, you may choose to supplement your ATDP class with on-site sports camp (see p. 5).

Fluid Physics (AM or PM)

2947	8:30–12:00	Bob Fabini
2948	1:00–4:30	Bob Fabini

Tuition: \$460 • Materials fee: \$55 • Total: **\$ 515**

In this class, we will discover the amazing world of liquids and gases. By studying density and Archimedes' Principle, we will then find out how and why concrete boats and hot air balloons float. We will design and build our own model concrete boats and compete in The Great Concrete Boat Race. We will also make our own hot-air balloons. By studying surface tension, we will learn how water spiders can live on the surface of a pond and why bubbles act bubbly. We will investigate the shapes of bubbles and produce waves on a bubble. Also, we will study Bernoulli's Principle and investigate how air flows around objects like cars and airplane wings.



Going Global:
Geography, Art, and Culture

2949	8:30–12:00	Lily Aguas
-------------	------------	------------

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Our global adventure will take us to all seven continents. On our way, we will learn about physical and cultural geography through projects and activities, which will include crafts, drawing, games, music and writing. We will learn about the maps and isolines, the four cardinal directions, landforms, bodies of water, biomes, as well as ancient civilizations, world cultures, games, foods, and celebrations. We will explore and learn about the people, places, and animals found all over the world. A few of the many cultures we will explore are the Maya of Guatemala, the Yoruba of Nigeria, and the Aboriginal dreamtime artists of Australia. Activities will include creating relief maps, exploring Chinese printing and papermaking, and making a thaumatrope to amuse our family and friends.



Q Should students have prior experience in a lab setting before taking a hands-on science course?

A No prior lab experience is required. ATDP lab instructors teach and emphasize safety at all times.

COMPLETING FIFTH GRADE IN JUNE 2009

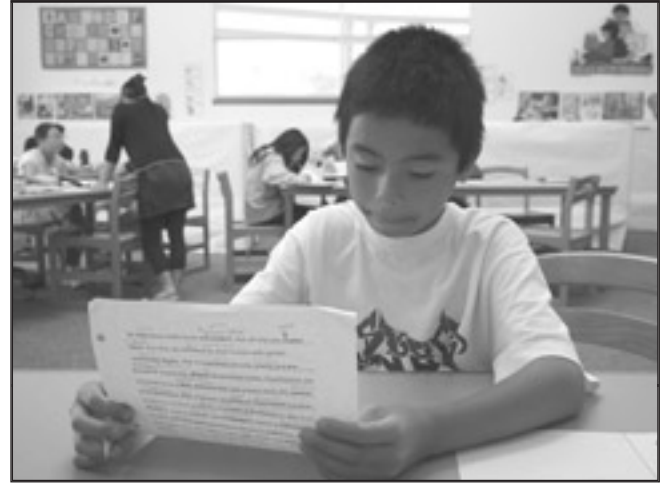
HOMEWORK: UP TO 30 MINUTES PER DAY

Human Anatomy & Physiology (AM or PM)

2951	8:30–12:00	Paul Bruno & Patty Holman
2952	1:00–4:30	Paul Bruno & Patty Holman

Tuition: \$460 • Materials fee: \$65 • Total: **\$ 525**

This class is for any student who has a body and is curious to know more about how it works! The class is organized around the organ systems that make up the human body. Some of the parts we will explore are bones, muscles, and nerves. We'll answer the questions: How does the digestive system turn our food into fuel for our cells? What sound does the heart make as it pumps blood? How much air can our lungs hold? How does the brain interpret what the eyes see? All investigations will be activity-based to the greatest extent possible. Come learn more about how your body works!



Writers at Work (AM or PM)

2953	8:30–12:00	Pooja Govil & Anne Kaffka
2954	1:00–4:30	Pooja Govil & Anne Kaffka

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

Using imagination and creativity, we will work to develop our thoughts and ideas, making them come alive on paper. We will work through the various stages of the writing process as we practice pre-writing, writing, revising, peer- and self-editing. Each day, we will spend time making a new entry in our writers' workshop journals as well as studying various writing techniques. Over the course of the three weeks, we will put together writing portfolios that include poems and short stories that highlight our growth and development as writers.

Q I know that I will be absent for several days. May I still take an ATDP class?

A If the absence will be for more than two days, you may not. If the absence will be for two days or fewer, talk to your instructor before the planned absence. You may not miss the first two days of class.



Lab Chemistry (AM or PM)

2955	8:30–12:00	Megan Gerdts & Gene Csider
2956	1:00–4:30	Megan Gerdts & Gene Csider

Tuition: \$460 • Materials fee: \$55 • Total: **\$ 515**

In this lab science course, we will observe chemical and physical changes, examine the properties of substances, hypothesize and investigate experimental outcomes, do independent research on an element of their choice, and utilize laboratory journals to record notes and observations. Students will develop their observation and analytical skills by experimentally discovering the amount of oxygen in air, testing gases for specific properties, making polymers, growing crystals, testing toothpaste for desirable properties, and performing a forensics experiment to determine the identity of various substances. Using freezing point depression, students will make ice cream and understand the chemistry behind it. As a culminating activity, students plan and perform a chemistry “magic” show.

Q Will I improve my chances of being placed in my first choice class if I don't list alternates?

A No. We always start by attempting to place students in their first choice and only look at the alternates if the class is filled or if a student's application is not competitive for that class.

Creating Music, Movies and Games with Computers (AM or PM)

2957	8:30–12:00	Colleen Lewis
2958	1:00–4:30	Colleen Lewis

Tuition: \$460 • Materials fee: \$65 • Total: **\$ 525**

In this course, we will create pictures, animations, music and interactive games. That's a lot to accomplish, so instead of starting with markers and paint, we will be using a computer to help out. Much like the animators and computer programmers do at Pixar, you will learn to create pictures, animations and music on the computer. You can even use these skills to make your own game on the computer! In addition to taking copies of your projects home, we will make a gallery on the Internet with all of the creations from our class, so you can easily show your friends and family. The software that we will use is free, so you can continue your projects after the class.

NOTE: with parental permission, some students may be videotaped.





COMPLETING SIXTH GRADE IN JUNE 2009

HOMEWORK: UP TO 60 MINUTES PER DAY



The Baker Street Irregulars

The Art of Mathematical Problem Solving (AM or PM)

2961	8:30–12:00	Effie Hsu
2962	1:00–4:30	Effie Hsu

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

When Sherlock Holmes had trouble with a mystery, he often turned to the Baker Street Irregulars, a group of London kids, to help him solve the problem. Like the Baker Street Irregulars, students in this class will be challenged by a series of unique problems. Since each problem is different, we will learn general problem-solving strategies that can be applied to a wide variety of problems—such as looking for patterns, drawing diagrams, working backward, questioning assumptions, and using logical reasoning—rather than specific procedures or formulas. We will work collaboratively and independently to solve a variety of problems ranging from realistic to fanciful, including picture problems, word puzzles, mysteries, geometric problems, secret codes, logic problems, and strategy games. Each weekday assignment consists of six problems that make use of the techniques presented in class, and the weekend assignments involve extra creativity.

Writing for Secondary School (AM or PM)

2963	8:30–12:00	Chris Chun
2964	1:00–4:30	Chris Chun

Tuition: \$460 • Materials fee: \$45 • Total: **\$ 505**

This class will focus on the writing process: pre-writing, drafting, editing, and revising. We will practice expository writing (analysis, persuasion, and interpretation) as well as prose writing (description, narration, and modeling). While learning various writing styles, we will discover the importance of voice and point-of-view in writing. Each of us will keep a journal and will read a variety of stories, essays, and explanatory materials.



Cosmic Wonders:

A Beautiful Chaos (AM or PM)

2965	8:30–12:00	Emily Chan & Lindsay Wells
2966	1:00–4:30	Emily Chan & Lindsay Wells

Tuition: \$460 • Materials fee: \$55 • Total: **\$ 515**

Up in the sky, look! It's a bird... it's a plane... no, it's a Supergiant! Have you ever looked up into the night sky and wondered about the planets, stars, and beyond? This course will take you on a journey through space and time, covering cosmic topics such as galaxies, stellar evolution, black holes, quasars, and more! From the Big Bang theory to groundbreaking research in the search for exoplanets and extraterrestrial life, this course will introduce you to the elegant mysteries of the cosmos and illuminate dramatic events taking place across the Universe.

Additional Option for Returning ED Students

Returning ED students who will be completing Sixth Grade in June 2009 are also eligible to apply to the following courses in the Secondary Division (SD) on the Berkeley campus:

- 2900 The Writing Process (any section)
- 2913 Drawing & Design
- 2940 Foundations of Algebra (AM or PM)

Spaces in these six-week courses are reserved for exceptional students who are ready for the challenge of *demanding, rigorous coursework*. The Director will determine admission and placement. **NOTE:** New ATDP applicants who will be completing 6th grade in June 2009 are not eligible for the Secondary Division.

Students who decide to apply to SD must complete an SD application, available for download from our website at <http://atdp.berkeley.edu>. Former ED students applying to SD are considered new students for application purposes. The SD application deadline is Wednesday, March 4. Apply early!

Since placement in SD is not guaranteed for sixth graders, the SD application should also include acceptable ED course choices as alternatives.