Science Research - Course #6753
Natural History of California


What is Science Research?

California is arguably the most physically diverse state in our country. Bordered on the west by the Pacific and its cold ocean currents, and spanning nearly 900 miles north to south, it stretches across regional climatic zones that are effected by the state's numerous mountain ranges (some towering over 14,000 feet) and equally plentiful valleys (some dipping well below sea level). Combine these, and other factors, and an incredibly abundant and diverse array of life forms results. Within the confines of the boundaries that define California, you find examples of what exists, around the globe. Spending a year understanding how California "works" creates a conceptual understanding of the world.

What will you be learning?

The ecology and natural history of California! Areas of study will include California's weather patterns and factors effecting climate, its geographic features, stars, constellations and astronomical features we see at night, California's human history including native American uses of plants for food and medicines, map use, minerals, rocks, fossils, geologic phenomena and features (California is "earthquake central" and has more volcanoes than Hawai'i), plant ecology and communities, mammals, reptiles, amphibians, insects and other arthropods, birds, and fish, as well as the variations of abiotic factors (climate, soil, water, sunlight, etc.) that affect them. You will also learn outdoor and some field survival skills such as knot tying, fire starting, and field tool use.

How will you be learning?

If you want to know about the natural processes occurring around you **as they occur**, **Science Research** is your course. As often as you can you **need** to be where these things are occuring. We use no textbook nor arrange what you learn chapter by chapter – we learn by doing: feeling, seeing, and experiencing. For example: learn why there are changes in our weather and how to predict them and changes in the night sky and constellations while they are happening – **most of the time outside of the classroom**!

Spend time learning Outdoors in, and about, the Field

Creative craft-like projects, field collections, field research, and field studies to the **Dana Point Headlands and coves**, **Salt Creek**, the **EEC**, and monthly star viewing locations will be used to increase student understanding. In addition, this course was designed in order to develop and maintain, **the DHHS Environmental Education Center (EEC)**; an on-site, one acre, outdoor classroom here at Dana Hills. It offers students an opportunity for hands-on, field research experiences while stewarding gardens representing California's native plant communities.

What credit do you receive by completing Science Research?

This is a **year-long** course, designed as **an A-G, college-prep, physical science** course.

Who takes Science Research?

Students who want to know about the natural processes occurring around them as they are occurring as well as those with a love for the outdoors (**sportsmen and sportswomen, walkers, hikers, campers, backpackers, beach goers and surfers, equestrians, athletes, and people who look up in the night sky and wonder what they're looking at!**) Although the only prerequisite is biology, sophomores, juniors, and seniors with varying science course backgrounds take **Science Research** – Biology through AP Chem. and Physics students all excel as the content, as well as the hands-on and practical way you learn it, levels the playing field. **Science Research** is practical, useful, and "real-life".

Where do students go when they complete Science Research?

Science Research is not the end – in fact, most students use the practical skills developed in **Science Research** to excel in further science classes. During the last seven academic years:

Data from 2011-2018:

***Total of 1,410 Science Research Students**

252 were graduating seniors

***Of the remaining 1158 Sophomores/Juniors that continued with science courses:**

- **(21.0%) went into Chemistry**
- **(22.5%) went into Anatomy and Physiology**
- **(4.7%) went into Physics**
- **(6.2%) went into Marine Ecology**
- **(2.0%) went into Nutrition and Exercise Physiology**
- **(3.6%) went into Renewable and Sustainable Energy**
- **(2.7%) went into AP Environmental Studies**
- **(.3%) went into Astronomy**
- **(6.3%) went into CCA (ROP) Sports Medicine**
- **(2.4%) went into CCA (ROP) Biotechnology**
- **(2.5%) went into CCA (ROP) Forensics**
- **(1.3%) went into Science Research (taking courses over for a better grade)**
- **(4.5%) went into Earth Science**
- **(0.2%) went into Biology (taking course over for a better grade)**
- **(0.2%) went into AP Biology**
- **(0.1%) went into AP Chemistry**

****** If you have questions – see Mr. Sullivan in room 810**