



Ideas of Science Stuff to do with Kids

The idea of year round schools has been tossed around for eons, and some are even set up that way to make better use of facilities and supplies in overcrowded schools. But it isn't just about this it is about the kids. Research has shown over and over again how much ground kids can lose during extended summer breaks. It is a fact that most teachers have to spend the first month or so re-teaching concepts the students should have learned in their previous year, but have likely forgotten over the break. Even textbooks are structured with this in mind, with the first few chapters being a review of past curriculum. It seems such a waste of time. But that is the way our school system has been for centuries. So, other than placing all students in year round schools where they have more frequent short breaks, as opposed to one long break, what can be done to ensure students stay up on the things they have learned?

Some teachers prepare packets of homework for students to complete during the summer. Some packets include a daily calendar for students to check off after completing the assigned task. Other teachers and schools will offer incentives for students to do the summer packets. Summer school is another way for students to stay sharp and lose less ground. Or, another option is to encourage families to work together and make every day a fun-learning day for the kids.

The following is a list of activities and ideas of things for your student to work on during breaks in the school year. These activities primarily center around STEM (Science, Technology, Engineering, and Math), but are multidisciplinary in their scope and could easily include language arts and social studies. The most important thing for a parent to remember is that students who have enriching experiences where they can practice the concepts they have learned in school will perform better across the curriculum than those who park themselves in front of

movies or video games. Additionally, involving the whole family strengthens relationships and sends a clear message that learning is a lifelong endeavor.

Physics

- Aerodynamics: design of Cars, Motorcycles, Bicycles (including clothing and helmets) you see
- Friction on the road: air pressure in tires; type of tread; materials, how it affects mileage & life of tire
- Space: constellation Identification relating to seasonal changes; navigation; effect of moon on tidal changes; study of meteor showers and debris
- Inventions: create something that solves a problem; research the history behind an invention; search patents online
- Interview an inventor. Learn how he/she protects ideas/designs, and how he/she uses the scientific process to make something new and novel.
- Build a kite from scratch, experiment with various length of tail, weight of materials, design, etc.
- Build a go-cart, robot, catapult, windmill, etc.

Natural Science

- Ecosystems: comparative analysis of various climates, elevations, and geographic location, and effect on biological species (plant and animal)
- Metamorphosis
- Animals: food chain, habitat, evidence they were there (tracks, damage to trees, scat)
- Dissect owl pellets, reconstruct skeletons

- Adopt a piece of land, map out all plant/animal species, monitor the area & keep records of changes throughout summer
- Plant/Tree identification: create a nature file box with 3X5 cards with botanical sketches and identifying information, catalog species seen in a particular place
- Bird watch, log all identified birds
- Gardening: analysis of seed & reproductive structure; genetics
- Raise a pet, keep a log
- Organize & categorize a collection
- Create family health genetics chart
- Find out what animal species can regrow limbs and how they do it; prepare a power point presentation about what you learned. Find out how this is helping geneticists do their research
- Visit a wildlife rescue center and learn how animals are rehabilitated and reintroduced into the wild
- Find out what land/water conservation efforts are being made in your community, volunteer to assist in fundraising, or any other way

Chemistry

- Grow crystals and study structure: salt vs. sugar. Keep a log, include pictures
- Chemical Reactions: cooking; pH tests; experiments with taste, texture, smell in baking various foods; yeast
- Dissolvability & Density
- Conductivity: batteries made from lemons, potatoes, or any vegetable or fruit, and various liquids

- Bubbles: compare recipes
- Environmental: pollution; acid rain; soil chemistry in gardening; water analysis
- Visit a lab, ask lots of questions, especially about safety and the scientific process

Earth Science

- Study the land formations of where you are going to be during the summer
- Learn about earthquakes and the potential for one in Utah
- Visit seismology center
- History of the area—evidence of different land use
- Rocks/minerals collection
- Weather station, weather log

Archeology/Paleontology

- Dig for trilobites in Delta, UT
- Visit the Dinosaur Museum, Natural History Museum, etc. If possible, visit an actual dig site

Math

- Calculate distances, mileage, mpg on vacation
- Calculate tips for restaurant purchases
- Grocery shop, compare prices per unit

- Design a piece of art using geographic shapes
- Nutrition: plan meal and calculate nutrition and caloric intake, compare with RDA
- Exercise, calculate calorie usage per activity
- Graph anything/everything
- Monitor heart rate
- Track rate of running/biking/boating a particular distance

Technology

- Learn how to use Microsoft Tools
- Excel: Learn how to use basic spreadsheet tools, sorting, filtering, formatting, pivot tables; practice making different kinds of graphs using various types of data
- Power Point: Create a presentation of things you would like to do this summer, things you did do this summer, and/or things you learned this summer. Be sure to import graphs, tables, and images into your slides.
- Publisher: Create a brochure of a vacation you went on this summer. Create flyers for a family, neighborhood, or church event. Create a banner to advertise something your family will be doing, or to celebrate an event
- Word: Keep a journal, write a family newsletter, keep logs of scientific activities, write and illustrate a book (picture books are fun to do), write, direct, and produce a neighborhood play, write creatively anytime, anyplace.