



## **Week 1 (June 6, 2011- June 10,2011)**

### **Human Body Overview (All Levels)**

#### **Senses (Sight, Smell, Touch, Hearing, Taste)**

The human body is an amazing system of parts that works together to serve special functions. Camp Nehemiah learning experiences are designed to help kids move beyond simple identification and begin to think about the unique contribution of each body part. Throughout the week, we will investigate and practice scientific methods such as experiments and demonstrations to explore the way our body parts such as eyes, nose, ears, hands, and tongue operates our senses.

Field Trip: (Elementary) Tellus Museum: Sound  
(Youth & Teen) Dialog in the Dark

**Math: Summer Success Math Kit (All Levels)**

## **Week 2 (June 13, 2011- June 17,2011)**

### **Energy: "Fuel Our Future Now"**

#### **Elementary**

Teachers will get your classroom moving by explore motion, forces, and sources of energy.

#### **Youth & Teen**

The Campers will investigate alternative fuels and determine which vehicles exhibit ultimate energy efficiency.

Field Trip: (Elementary) Movie TBD  
(Youth & Teen) Federal Reserve

**Math: Summer Success Math Kit (All Levels)**



## **Week 3 (June 20,2011-June 24,2011)**

### **Weather Week (All Levels)**

#### **(Elementary)**

"Weather" is a typical early elementary science topic and most elementary classrooms include a weather chart. As part of morning circle time, children describe the day outside, sunny, cloudy, rainy, snowy, and so on. Unfortunately, this is often where discussions stop. We believe observing and describing is just the start in elementary student's explorations of weather. Observing and thinking about changes due to weather conditions provides opportunities to think about cause and effect. For example, they will ponder the possible causes of this effect. When they figure out that the wind is the cause, they spend the day exploring other effects of wind. In reviewing the sun, the children will do an experiment that allows them to explore the damaging effects of sun and protection offered by sunscreen. In their standards or learning expectations for elementary students, many U.S. states identify opportunities to explore cause and effect as a critical part of early education. Weather explorations can provide rich content for this important kind of reasoning.

#### **(Youth & Teens)**

The youth and teens week will feature hands-on activities that can help students understand the concepts behind basic weather conditions that produce our most common storms such hurricanes and tornados.

Field Trip: (All Ages) Science For Every1

**Math: Summer Success Math Kit (All Levels)**



## **Week 4 (June 27, 2011-July 1, 2011)**

**"Botany and Ecology" (All levels)**

Botany is the study of plants, including their classification, structure, physiology, ecology, and economic importance. Ecology is the branch of biology dealing with the relations and interactions between organisms and their environment, including other organisms.

This week the campers will be learning how plants and organisms play an important role in our everyday lives especially our foods.

Field Trip: Whole Foods

**Math: Summer Success Math Kit (All Levels)**

## **Week 5 (July 11, 2011-July 15, 2011)**

**Health Hygiene (Elementary)**

All kinds of scientists (biologists, chemists, physicists, psychologists, and others) study systems and how they function. The human body provides great examples of parts and systems that work together. It's also a topic that is accessible to early elementary children.

Exploring questions like, "What does washing my hands have to do with my nose running? Why is my heart beating so fast? I was running on my legs, not my heart!" gets us thinking about the ways different parts of our bodies work together so we can think, talk, move, and play. While we learn about systems and celebrate the amazing things that our bodies do, we're also finding out that our bodies, like all living things, need special care.

Our goal isn't just to tell campers to brush their teeth, eat right, exercise and wash their hands. We provide information about the effects of doing these things—or not doing them—so children understand the benefits of certain behaviors. We hope that campers will work on developing these healthy habits because they've made an informed decision to do so, not just 'cause Mom and Dad said so.



## **Earth Science (Youth & Teens)**

Campers will be exploring fossils, rocks, minerals and soils.

Field Trip: (Elementary & Youth) Atlantic Station  
(Teen) CDC

**Math: Summer Success Math Kit (All Levels)**

## **Week 6 (July 18,2011-July 22, 2011)**

### **Tools & Measurement (Elementary)**

Science tools help us observe, describe, and quantify our world. Some of them are actual physical objects, and others are reasoning skills that help us with science. Many science tools, such as magnifying glasses, extend our senses and allow us to observe the world in more detailed ways.

Other science tools, like charts and journals, extend our memories and allow us to communicate. They are records of our observations and ideas that we can reflect on at a later time and that we can share with others. Numerical estimation is a reasoning skill. It builds children's number sense, which is an informal, but accurate, way of thinking about number and quantities without using standard measurement tools or counting.

Measurement and estimation are complementary. Measurement builds on children's informal ideas about "more" and "less." It provides rules and tools to precisely quantify attributes like length, area, volume, and weight.

Estimation and precise measurement are used for different purposes and each has a role in children's growing mathematical understanding and skill.

We don't expect that early elementary campers will understand the full use of all these science tools or even that they will be highly skilled in using them. Instead, we provide experience with these tools that are used in simple but authentic ways, to highlight their functions and their utility. More mature understandings will be built on these early foundations.

### **Forensic Science (Youth & Teens)**

Forensic science is broadly defined as the application of science to criminal investigations or problem solving. By incorporating a problem-solving approach to science education, teachers are engaging students in exciting and



innovative ways. This week we will provide a novel approach to teaching your kids the “real-world” application of science and math.

A forensics approach:

- \*Focuses on concepts and skills already emphasized in the science classroom
- \*Creates a bridge between science and real-life applications
- \*Allow students to become investigators and engage in a science-as-inquiry approach
- \*Places emphasis on cooperative learning and the relationship between evidence and explanations

Field Trip: Piedmont Park

**Math: Summer Success Math Kit (All Levels)**

## **Week 7 (July 25, 2011-July 29, 2011)**

**Physical Science (All Levels)**

This week all campers will be reviewing states and changes of matter, and energy and motion.

Field Trip: Sparkles

**Math: Summer Success Math Kit (All Levels)**

## **Week 8 (August 1, 2011-August 5, 2011)**

**Simple Machines (Elementary)**

Simple machines help people do work. "Work" has a specific definition in physics, but a basic way to think about it is that work is making things move.

For early elementary campers, we provide opportunities for them to experience the ways that simple machines make moving things seem easier. We can set up problems that have to be solved, such as moving something very heavy. We will ask campers to brainstorm ways to move, for example, a basket of heavy toys up into a tree house or to get a box with one of their classmates in it from one side of the room to another. We try out these ideas and find that it's not so easy to move heavy things by lifting, pushing, and pulling.

This week, a simple machine (wheels, lever, inclined plane, or pulley) is introduced,



and campers try to do the same moving task using the tool. These experiences provide opportunities for campers to engage in scientific thinking. They brainstorm solutions to problems, and they test their ideas. They compare and contrast different methods for solving the problem at hand (children also get valuable experience with technology - the ways that people modify the world and create tools to meet our needs).

### **Physics Week (Youth & Teen)**

Engineering Marvels: Buildings, Structures, and Machines. The campers will build 9 real-world models that demonstrate science, technology, engineering, mathematics, and history concepts. Models include the Eifel Tower, Seattle's Space Needle, the flying buttress system, a windmill, a crane, Big Ben, the Arc de Triomphe, the CN Tower, and the first iron bridge.

Field Trip: Montasia

**Math: Summer Success Math Kit (All Levels)**

**\*\*\*\*All weekly lessons and/or field trips are subject to change if needed.**