

## General Information

Mercer Education's *SUMMER LEARNING CAMP* for students entering grades 3 through 8 meets for five hours per day, Monday through Friday for a total of 100 hours of instruction and exercises. There are two one-month sessions, and students may attend just the first session, just the second session, or both. For students attending both sessions, the second session builds upon what they have learned in the first. Small classes not exceeding six students allow teachers to tailor sessions to each student's needs. The ability of each student is assessed prior to the start of camp, and students are scheduled in groups that are approximately the same age and of similar proficiency.

While extensive in its scope and goals, the course is paced in such a way that assignments never seem intimidating or overly time-consuming. Our instructors are experienced professionals who bring the course material to life with interesting activities, supplementary materials, and proven teaching techniques that lead to quality results. The instruction includes an academic focus (reading, writing, vocabulary, grammar, critical thinking, word problems, algebra, geometry, etc.), preparing students both for standardized tests and for school.

## Language Arts Section (2.5 hours per day; total 50 hours)

The language arts component of the learning camp is 2.5 hours per day, five days a week. Materials and assignments prepare students for the coming school year. They keep daily journals, engage in group discussions, do presentations about books they have read, and help each other to gain a better understanding of fiction and non-fiction texts. Student activities include both individual and group projects that push students to use the critical thinking skills necessary to do well on assessments such as the ITBS, ISEE, SSAT and PSAT, and they receive instruction in strategies specifically for tackling sentence completion, analogy, and reading comprehension questions.

By the end of the session, students are able to make use of critical thinking skills to complete objectives in the areas of reading comprehension, writing, grammar, and vocabulary according to the Washington State Standards as listed by Seattle and Bellevue School Districts. Engaging and fun lessons encourage students to read and respond to grade-level appropriate literature, use different forms of writing to articulate their thoughts, and express themselves using their newly-acquired knowledge of grammar and vocabulary.

Instructional materials include a wide range of established texts that clearly present techniques proven to raise scores on standardized tests; they also include a wide range of age-appropriate novels, short stories, articles and poetry that provide the foundation for learning vocabulary and honing reading, writing, and analytic skills.

## **Mathematics Section (1.5 hours per day; total 30 hours )**

The mathematics component of the learning camp is 1.5 hours per day, five days a week. Students engage in a variety of fun activities that prepare them for the coming school year with a focus on objectives identified by Washington State and National Council of Teachers of Mathematics. Students exercise problem solving skills, logical reasoning, written and oral communication to explore problems that include number sense, measurement, geometric sense, probability and statistics, and algebraic sense.

Activities include both individual and group explorations to challenge students to develop and explain problem-solving strategies in writing and through oral presentations. These activities also prepare students for the type of basic skills and problem-solving skills measured by standardized tests such as the ITBS, ISEE, SSAT and SAT. Our math component also emphasizes creativity and the history and origins of mathematical concepts to give students a sense of the wonder of mathematics and the brilliant thinkers who originated the ideas we often take for granted.

## **Lego Robotics Section (1 hour per day; total 20 hours)**

A key component of ME's Summer Learning Camp is Robotics using LEGO® Mindstorms™, a course in robotics engineering developed in cooperation with MIT and used internationally to educate younger students. This component of the learning camp is 1 hour per day, five days a week. Students have an unforgettable learning experience in which they develop computer, problem-solving, and cooperation skills with hands-on learning that nicely punctuates the more academic parts of the day at ME and leaves them wanting to come back for more.

The Mindstorms™ lab experience gives students a well-defined, FUN engineering design problem for which they develop theories about why things work the way they do. The simple but flexible hardware and software provide a way for students to test their theories and to keep devising new theories until they hit on one that works. Solving problems requires synthesizing talents from many fields, from fine arts and history to mathematics and science. This interdisciplinary approach capitalizes on the students' love to create and build and lets every team member contribute from his or her areas of strength while building up areas of weakness.

Introductory projects, based on simple patterns of locomotion, familiarize students with Lego Building techniques and fundamental programming concepts. The intermediate projects extend the complexity of the robot's behavior by using sensor data to choose between a discrete set of responses. Students design these autonomous responses by directing a motor attached to the robot's brain to perform sequences of actions that create behaviors such as line following, edge sensing, sorting by color, and precisely controlled movements. Advanced projects challenge the students to combine their expertise on structural design with increasingly programming. At every level, students deal with real-world constraints on time, materials, team members, and the laws of physics.

## **A Student's Typical Day (total 5 hours instruction per day; ½ hour lunch break)**

Below is a general outline of what a typical day at the Summer Learning Camp includes. Learning English and preparing for the verbal portion of standardized tests include the integration of multiple language learning areas including reading, writing, vocabulary development, and grammar. Likewise, math touches upon multiple skills and problem types to which each group of students brings different strengths and weaknesses. Because of this overlap of skills and student diversity, times dedicated to various components may vary depending on the needs of the class.

### Language Arts – 2.5 Hours

- ▶ Warm-up / Journal Time – 20 minutes
- ▶ Reading / Literature Circle – 35 minutes
- ▶ Break – 15 minutes
- ▶ Writer's Workshop – 45 minutes
- ▶ Grammar – 35 minutes, three days per week
- ▶ Standardized Test Prep – 35 minutes, two days per week

### Lego Robotics – 1 Hour

- ▶ Teacher demo, training missions, assembling/disassembling, programming and debugging

### Math – 1.5 Hours

- ▶ Warm-up Activities – 15 minutes
- ▶ Skills Practice – 45 minutes
- ▶ Group Activities – 30 minutes