

## GENERAL INFORMATION

Mercer Education's *LEARNING CAMP* for students entering grades 3 – 8 (and occasionally entering grade 9) 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 – using different teaching materials – builds upon what they have learned in the first. Curricula at each level also alternate yearly, so students can attend for 2 years at the 3<sup>rd</sup>/4<sup>th</sup> grade, 5<sup>th</sup>/6<sup>th</sup> grade or 7<sup>th</sup>/8<sup>th</sup> grade levels without repeating any materials. Students are assessed prior to the start of camp and scheduled in groups of approximately the same age (generally “rising” 3<sup>rd</sup>/4<sup>th</sup>, 5<sup>th</sup>/6<sup>th</sup> and 7<sup>th</sup>/8<sup>th</sup> graders) and of similar proficiency. Small classes not exceeding 6 students provide students with lots of individual attention and opportunities to participate in discussion and activities.

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 (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 with focus on reading (generally one book per week) and writing. Materials and assignments are designed to prepare students for the coming school year. They keep daily journals, engage in group discussions, write and give oral presentations about books they have read, and help each other to gain a better understanding of fiction and non-fiction texts. 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 and SSAT, and they receive instruction in strategies specifically for tackling sentence completion, analogy, and reading comprehension questions.

The focus on the program is to help students 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. Course materials include age-appropriate novels (generally reading one book per week), short stories, articles and poetry that provide the foundation for learning vocabulary and honing reading, writing, and analytic skills.

\* The camp usually meets for 95 hours in ME's first session because of the school closing for Independence Day (7/4), but the course content and tuition rates are the same.

## **MATHEMATICS (APPROXIMATELY 1.25 HOURS PER DAY; TOTAL 25 HOURS\*)**

The mathematics component of the learning camp is 1.5 hours per day, five days a week. Students exercise problem solving skills, logical reasoning, and written and oral communication to explore problems that include number sense, measurement, geometric sense, probability and statistics, and algebraic sense. Unlike the Language Arts portion of the camp, in which students discuss texts that the entire class has read, the Mathematics component is more customized for each student, both in terms of texts and assignments. Student assessment continues during the first few days and beyond to precisely pinpoint students' strengths and weaknesses, and parents are surveyed regarding specific learning objectives and the materials we will be using as well as optional homework assignments.

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. 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 (APPROXIMATELY 1.25 HOURS PER DAY; TOTAL 25 HOURS\*)**

A key component of ME's 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 approximately 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 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 – 1.25 Hour

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

## Math – 1.25 Hours

- ▶ Warm-up Activities – 10 minutes
- ▶ Skills Practice – 45 minutes
- ▶ Group Activities – 20 minutes