Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**

Number and Operations:	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems	
a) Work flexibly with fractions, decimals, and percents to solve problems	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite.*
b) Compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
c) Develop meaning for percents greater than 100 and less than 1	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
d) Understand and use ratios and proportions to represent quantitative relationships	*Satellite*
e) Develop an understanding of large numbers and recognize and appropriately use exponential, scientific, and calculator notation	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
f) Use factors, multiples, prime factorization, and relatively prime numbers to solve problems	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
g) Develop meaning for integers and represent and compare quantities with them	*Satellite*
Understand meanings of operations and how they relate to one another.	
a) Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers	*Satellite, World Cup*

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
b) Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite, World Cup*
c) Understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite, World Cup*
Compute fluently and make reasonable estimates.	
a) Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite, World Cup*
b) Develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite, World Cup*
c) Develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results	While actual numbers are not employed in *Cross-Trainer* ™, the program places students in problem-solving environments where they have the opportunity to construct their own understanding of these concepts. Specifically these skills are addressed in: *Satellite, Stepping Stones*

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
d) Develop, analyze, and explain methods for solving problems involving proportions, such as scaling and finding equivalent ratios	*Satellite, World Cup*
Algebra:	
Understand patterns, relations, and functions.	
a) Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Relate and compare different forms of representation for a relationship	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Identify functions as linear or nonlinear and contrast their properties from tables, graphs, or equations	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
Represent and analyze mathematical situations and structures using algebraic symbols.	
a) Develop an initial conceptual understanding of different uses of variables	*Satellite*
b) Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope	*Satellite, World Cup*
c) Use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships	*Satellite*
d) Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations	*Bridge Builder, Satellite, Stepping Stones*
Use mathematical models to represent and understand quantitative relationships	
a) Model and solve contextualized problems using various representations, such as graphs, tables, and equations	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
Analyze change in various contexts	

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
a) Use graphs to analyze the nature of changes in quantities in linear relationships	*Bridge Builder, Stepping Stones*
Geometry:	
Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	
a) Precisely describe, classify, and understand relationships among types of two- and three-dimensional objects using their defining properties	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects	*Bridge Builder, Stepping Stones, World Cup*
c) Create and critique inductive and deductive arguments concerning geometric ideas and relationships, such as congruence, similarity, and the Pythagorean relationship	*Fishing Derby, Satellite, Stepping Stones, World Cup*
Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
a) Use coordinate geometry to represent and examine the properties of geometric shapes	*World Cup*
b) Use coordinate geometry to examine special geometric shapes, such as regular polygons or those with pairs of parallel or perpendicular sides	*World Cup*
Apply transformations and use symmetry to analyze mathematical situations	
a) Describe sizes, positions, and orientations of shapes under informal transformations such as flips, turns, slides, and scaling	*Bridge Builder*
b) Examine the congruence, similarity, and line or rotational symmetry of objects using transformations	*Bridge Builder, Fishing Derby, Stepping Stones, World Cup*
Use visualization, spatial reasoning, and geometric modeling to solve problems	
a) Draw geometric objects with specified properties, such as side lengths or angle measures	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
b) Use two-dimensional representations of three-dimensional objects to visualize and solve problems such as those involving surface area and volume	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
c) Use visual tools such as networks to represent and solve problems	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
d) Use geometric models to represent and explain numerical and algebraic relationships	*Bridge Builder, Stepping Stones, World Cup*
e) Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
Measurement:	
Understand measurable attributes of objects and the units, systems, and processes of measurement	
a) Understand both metric and customary systems of measurement	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
b) Understand relationships among units and convert from one unit to another within the same system	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
c) Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
Apply appropriate techniques, tools, and formulas to determine measurements	
a) Use common benchmarks to select appropriate methods for estimating measurements	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
b) Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
c) Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
d) Develop strategies to determine the surface area and volume of selected prisms, pyramids, and cylinders	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
e) Solve problems involving scale factors, using ratio and proportion	*World Cup*
f) Solve simple problems involving rates and derived measurements for such attributes as velocity and density	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
Data Analysis and Probability:	
Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them	
a) Formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population	*World Cup*
b) Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatterplots	*World Cup*
Select and use appropriate statistical methods to analyze data	
a) Find, use, and interpret measures of center and spread, including mean and interquartile range	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
b) Discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots	*World Cup*
Develop and evaluate inferences and predictions that are based on data	

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
a) Use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken	*Fishing Derby, World Cup*
b) Make conjectures about possible relationships between two characteristics of a sample on the basis of scatterplots of the data and approximate lines of fit	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
c) Use conjectures to formulate new questions and plan new studies to answer them	*Fishing Derby, World Cup*
Understand and apply basic concepts of probability	
a) Understand and use appropriate terminology to describe complementary and mutually exclusive events	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
b) Use proportionality and a basic understanding of probability to make and test conjectures about the results of experiments and simulations	*World Cup*
c) Compute probabilities for simple compound events, using such methods as organized lists, tree diagrams, and area models	This specific skill is not addressed by *Cross Trainer* ™: Logical Reasoning.
Problem Solving:	
a) Build new mathematical knowledge through problem solving	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Solve problems that arise in mathematics and in other contexts	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Apply and adapt a variety of appropriate strategies to solve problems	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
d) Monitor and reflect on the process of mathematical problem solving	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
Reasoning and Proof:	
a) Recognize reasoning and proof as fundamental aspects of mathematics	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*

Lexia *Cross Trainer* ™: Logical Reasoning ©2005 correlated to **Principals and Standards for School Mathematics** **Grade 6 through Grade 8**	
Principals and Standards for School Mathematics Grade 6 through Grade 8	**Lexia *Cross Trainer* ™: Logical Reasoning ©2005**
b) Make and investigate mathematical conjectures	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Develop and evaluate mathematical arguments and proofs	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
d) Select and use various types of reasoning and methods of proof	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
Communication:	
a) Organize and consolidate their mathematical thinking through communication	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Communicate their mathematical thinking coherently and clearly to peers, teachers, and others	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Analyze and evaluate the mathematical thinking and strategies of others	*Fishing Derby*
d) Use the language of mathematics to express mathematical ideas precisely	*Satellite*
Connections:	
a) Recognize and use connections among mathematical ideas	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Understand how mathematical ideas interconnect and build on one another to produce a coherent whole	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Recognize and apply mathematics in contexts outside of mathematics	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
Representation:	
a) Create and use representations to organize, record, and communicate mathematical ideas	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
b) Select, apply, and translate among mathematical representations to solve problems	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*
c) Use representations to model and interpret physical, social, and mathematical phenomena	*Bridge Builder, Fishing Derby, Satellite, Stepping Stones, World Cup*