Promoting Spatial Thinking in K-12 Education
through Geospatial Technologies

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Spatial thinking is a skill that we all develop and use in everyday life since childhood. As adults, we extend spatial thinking to various other domains of knowledge to solve problems using concepts of physical and abstract (information) space, visualization and spatial reasoning. Not all of us are equally predisposed to use spatial thinking effectively in guiding our decisions and actions, but such skills, like most skills, can be acquired and enhanced with targeted education and training. In this presentation, we will begin with what is meant by spatial thinking, why it should be regarded as a fundamental skill, similar to language and mathematical skills, and how pervasive spatial thinking is in our personal and professional lives. Next, we will briefly highlight the extensive application of spatial thinking in the discipline of geography and the rising popularity of geospatial technologies that have been particularly effective in fostering spatial thinking and spatial analysis skills in people from all backgrounds. Finally, we will discuss how spatial thinking should be fostered at the primary education level and can be reinforced at the secondary and college level using geospatial technologies, whose strength lies in bridging and establishing connections between diverse subject areas such as social studies, earth and environmental science, literature and composition, digital arts, mathematics, and computer technology.