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Thinking Like A Geographer

Whether you are visualizing the most efficient path through the grocery store, navigating your route home, or determining the itinerary of your next vacation, you are thinking like a geographer. In all of these situations, you are organizing concepts of space, employing spatial representations, and structuring your reasoning to arrive at some spatial conclusion.

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Although it has received increased attention in recent years, spatial thinking is far from new. Humans have been thinking spatially since ancient times. The locations of early settled civilizations were spatial decisions. Likewise, understanding globalization, locating new energy resources, and improving the health of the world's population are all dependent on spatial thinking today.

Learning to think spatially, published by the National Research Council in 2006, asserts that “spatial thinking is a basic and essential skill that can be learned, that can be taught formally to all students, and that can be supported by appropriate tools, technologies, and curriculum” (National Research Council 2006, p. 231). National Geographic’s *World Cultures and Geography* program encourages you to explore key events in geography and history by employing spatial thinking with your students. The program contains an overview and explanation of different geographic themes and elements, many types of maps, and activities using spatial analysis that will help your students become fluent spatial thinkers.

COMPONENTS OF SPATIAL THINKING

Spatial thinking involves knowing about space, using different representations of space, and making reasoned decisions concerning space (National Research Council 2006, p. 12). All spatial thinking involves applying spatial concepts and using tools of spatial representations. Spatial concepts range from identifying locations to describing spatial patterns and analyzing spatial hierarchies (Jo and Bednarz, 2009). Tools of spatial representation include maps, air photos, diagrams, and graphs, all of which are integrated in *World Cultures and Geography*.

The culmination of spatial thinking involves taking spatial concepts and representations and using them to engage in spatial reasoning. Students reason spatially when, for example, they develop their own mental map of a region, evaluate locational influences of a place, or identify connections between places.

FACILITATING SPATIAL THINKING IN STUDENTS

Several research studies suggest that individual spatial skills can be improved through instruction and practice (Kaufman et al. 2005; Uttal 2000; Piburn et al. 2005). For many years, however, school-based instruction of geography largely involved memorizing important locations and Earth’s physical features. However, as all geographers know, this approach does not adequately encompass the study of geography.

Geographers think spatially. They use spatial concepts and representations to solve complex human and environmental problems. Geographers engage in work that is challenging, rewarding, and relevant to human existence. From urban planning to exploring the world’s oceans, geographers do more than simply memorize facts and locations. When students are taught to think like geographers and practice their own spatial thinking, they will be able to construct their own understanding of the world.

To facilitate spatial thinking among your students, it is important to keep the three components of spatial thinking in mind as you use the text. Spatial thinking skills can be scaffolded, beginning with knowing locations and reading basic representations and progressing to more complex spatial relationships and representations. Each chapter of the *World Cultures and Geography* program contains Map Labs with questions that reflect scaffolded spatial thinking skills.

You can also employ this strategy when you discuss the maps in class. For example, when you and your students study a physical map in the program, you might begin by having them identify large cities. You could then encourage students to examine the map to understand why people settled in a particular city. They should see that it lies on a plain, is located near water, or has some other physical advantages. Further discussion will help students understand how the city attracted immigrants, developed culturally and economically, and became the place it is today. Students will be able to apply this spatial thinking to other regions as they continue through the *World Cultures and Geography* program.

A focus on spatial thinking also serves as an excellent platform for differentiating classroom instruction. All students arrive in the classroom with different ways of learning and understanding. The **Teacher's Edition** of this program addresses these differences by providing activity ideas for striving readers, English language learners, inclusion students, gifted and talented students, and students in pre-Advanced Placement. A focus on spatial thinking may tap into student skills that have never before found expression in the classroom.

WHY SPATIAL THINKING IS IMPORTANT

Spatial thinking is a critical skill to help students develop. They live in a world that is becoming increasingly more global and interdependent. In addition, the use of technologies such as Global

Positioning Systems and Geographic Information Systems have made it more vital for our students to learn to think spatially. While students should not fully depend on these technologies and, in the process, neglect developing their spatial thinking abilities, the technologies can help them explore and understand the world like never before in history.

World Cultures and Geography provides students with ample practice in the use of technology to expand spatial thinking. The **Interactive Map Tool** introduces students to geospatial technologies and allows them to draw on and add labels to maps, compare layers of information, and think critically about the relationship between geography and culture. **Interactive Whiteboard GeoActivities** also offer students the chance to hone their spatial thinking skills. Many of the GeoActivities have students create their own maps, encouraging them to think like geographers and evaluate the characteristics of the world's regions. Both of these technologies provide students with hands-on experience in spatial thinking.

One of the goals of *World Cultures and Geography* is to help you develop a new generation of exceptional spatial thinkers. By providing spatially enriching experiences in your classroom, you can help your students acquire the habit of thinking spatially. These students will know where, when, how, and why to think spatially (National Research Council 2006, p. 20). They will also be in a position to make sound spatial decisions that will positively influence the use of natural resources, the interaction among people around the world, and the sustainability of our planet.

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