Grade 3 Social Studies Content Module 1

Part 1: Geography and Economics

Part 2: Early American and Tennessee History

Module Goal

The goal of this module is to provide information that will help educators increase their knowledge of grade-appropriate social studies concepts, knowledge, and skills to support effective planning or modification of their existing social studies instructional units for students with significant cognitive disabilities. The module includes important concepts, knowledge, and skills for the following instructional units:

- Geography: Maps and Globes: Maps and globes represent locations of physical and political features
 and include a compass rose to display the orientation of the cardinal directions (north, east, south,
 and west).
- United States and Tennessee Geography: Maps of the United States and Tennessee represent locations of physical and political features in the U.S. and Tennessee.
- Economics: People interact with their environment to satisfy their basic needs and wants (e.g., housing, industry, transportation, and communication).
- Indigenous Peoples through European Exploration (prior to 1585): The Southeast and Plains North
 American Indians lived in different locations and had different customs. European countries
 supported early explorers who traveled to the Americas to look for trade routes and to find new
 land.
- Early North American Settlements (1585–1600s): Early settlements helped in founding the U.S.
 People traveled to North America and later moved west to the Tennessee frontier for multiple reasons. Life was challenging in early settlements and on the Tennessee frontier.

Module Objectives

The content module supports educators' planning and implementation of instructional units in social studies by:

- Developing an understanding of the concepts and vocabulary that interconnect with information in the module units.
- Learning instructional strategies that support teaching students the concepts, knowledge, and skills related to the module units.
- Discovering ways to transfer and generalize the content, knowledge, and skills to future school, community, and work environments.

The module provides an overview of the social studies concepts, content, and vocabulary related to Part 1: Geography and Economics and Part 2: Early American and Tennessee History and provides suggested teaching strategies and ways to support transference and generalization of the concepts, knowledge, and skills. The module does not include lesson plans and is not a comprehensive instructional unit. Rather, the module provides information for educators to use when developing instructional units and lesson plans.

The module organizes the information using the following sections:

- I. Tennessee Social Studies Standards and Related Knowledge and Skills Statements (KSSs) and Underlying Concepts (UCs);
- II. Connecting Concepts;

- III. Vocabulary and Background Knowledge information, including ideas to teach vocabulary;
- IV. Overview of Units' Content;
- V. Universal Design for Learning (UDL) Suggestions;
- VI. Transfer and Generalize Concepts, Knowledge, and Skills;
- VII. Concepts and Vocabulary Multi-Age Planning: Grades Three through Five; and
- VIII. Tactile Maps and Graphics.

Section I

Tennessee Social Studies Standards and Related Knowledge and Skills Statements and Underlying Concepts

It is important to know the expectations for each unit when planning for instruction. The first step in the planning process is to become familiar with the identified academic standards and related Knowledge and Skills Statements (KSSs) and Underlying Concepts (UCs) covered in the module. The KSSs are specific statements of knowledge and skills linked to the grade-specific social studies academic standards. The UCs are entry-level knowledge and skills that build toward a more complex understanding of the knowledge and skills represented in the KSSs and should not be taught in isolation. It is important to provide instruction on the KSSs along with the UCs to move toward acquisition of the same knowledge and skills.

P - Politics/Government

T – Tennessee

Table 1 includes the grade 3 Tennessee Social Studies Standards and related KSSs and UCs addressed by this module, Part 1: Geography and Economics and Part 2: Early American and Tennessee History, and organizes them by the units of study. While only the social studies standards targeted for the Tennessee Comprehensive Assessment Program/Alternate (TCAP/Alt) are included, instruction on additional standards will aid in student understanding. Standards that are not included still represent important content for students to master. Therefore, the KSSs and UCs included in the table do not cover all of the concepts that can be taught to support progress and understanding aligned to the standards.

The Tennessee Social Studies Standards include the following codes:

- C Culture
- E Economics
- G Geography
- H History
- P Politics/Government
- T Tennessee

Table 1. Tennessee Social Studies Standards and Related KSSs and UCs ¹

Academic Standards	Knowledge and Skills Statements (KSSs)	Underlying Concepts (UCs)
	Part 1: Geography and Economics	
	Geography: Maps and Globes	
3.02: Use cardinal directions, intermediate directions, map scales, legends, and grids to locate major cities in Tennessee and the U.S. (G, T)	3.02.a: Ability to use the four cardinal directions (i.e., north, east, south, west) to locate a major city in relationship to a given location on a political map of Tennessee	3.02.UC: Use spatial terms (e.g., above, below, near, far) to describe where places are in relation to each other on a map.
	3.02.b: Ability to use the four cardinal directions (i.e., north, east, south, west) to locate a major city in relationship to a given location on a political map of the U.S.	
	3.02.c: Ability to use the four intermediate directions (i.e., northeast, southeast, southwest, and northwest) to locate a major city in relationship to a given location on a political map of Tennessee	
	3.02.d: Ability to use the four intermediate directions (i.e., northeast, southeast, southwest, and northwest) in relationship to	

Academic Standards	Knowledge and Skills Statements (KSSs)	Underlying Concepts (UCs)
	a given location to locate a major city on a political map of the U.S.	
3.03: Examine major physical features on globes and maps, including: Basin, Bay, Canal, Canyon, Delta, Desert, Gulf, Island, Isthmus, Mountain, Ocean, Peninsula, Plain, Plateau, River, Sea, Strait, Stream, Valley. (G)	3.03.a: Ability to identify a physical feature (i.e., Canyon, Desert, Mountain, Ocean, River) on a globe 3.03.b: Ability to identify a physical feature (i.e., Canyon, Desert, Mountain, Ocean, River) on a physical map	3.03.UC: Identify different areas, locations, or objects on a map or diagram representing home, school, or community.
Ur	nited States and Tennessee Geograp	phy
3.10: Identify and locate major cities in the U.S., including: Chicago, Los Angeles, Miami, New York City, Seattle, Washington, D.C. (G)	3.10.a: Ability to locate a major city in the U.S. (i.e., Chicago, Los Angeles, Miami, New York City, Seattle, Washington, D.C.) on a regional political map of the U.S.	3.10.UC: Identify the representation of a city or state on a map of the U.S.
3.11: Identify major physical features of the U.S., including: Rivers—Colorado, Mississippi, Ohio, Rio Grande; Mountains— Alaska Range, Appalachian, Rockies; Bodies of Water—Great Lakes, Gulf of Mexico; Desert— Great Basin; Landforms—Grand Canyon, Great Plains. (G, T)	3.11.a: Ability to identify a major U.S. river (i.e., Mississippi) on a physical map 3.11.b: Ability to identify major U.S. mountains (i.e., Appalachian) on a physical map 3.11.c: Ability to identify major U.S. bodies of water (i.e., Great Lakes) on a physical map 3.11.d: Ability to identify major U.S. landforms (i.e., Grand Canyon, Great Plains) on a physical map	3.11.UC: Recognize a description of a physical feature (i.e., river, mountains, bodies of water, U.S. landforms).
	Economics	
3.18: Analyze how people interact with their environment to satisfy basic needs and wants, including: housing, industry, transportation, and communication. (C, E, G, T)	 3.18.a: Ability to identify the use of housing, industry, transportation, or communication to satisfy basic human needs 3.18.b: Ability to identify the use of housing, industry, transportation, or communication to satisfy the wants of people 	3.18.UC: Identify an object as a need or a want.

Academic Standards	Knowledge and Skills Statements (KSSs)	Underlying Concepts (UCs)
Part 2: Early American History and Tennessee History		
Indigenous Ped	pples through European Exploration	(prior to 1585)
3.19: Compare and contrast the geographic locations and customs (i.e., housing and clothing) of the Northeast, Southeast, and Plains North American Indians. (C, G, H, T)	3.19.a: Ability to identify similarities in the customs (i.e., housing and clothing) of the Southeast and Plains North American Indians 3.19.b: Ability to identify differences in the customs (i.e., housing and clothing) of the Southeast and Plains North American Indians	3.19.UC: Recognize a description of a custom.
3.21: Identify the routes and contributions of early explorers of the Americas, including: Christopher Columbus, Hernando de Soto, Ferdinand Magellan, and Amerigo Vespucci. (C, E, G, H, P, T)	3.21.a: Ability to identify the routes of early explorers of the Americas (i.e., Christopher Columbus, Hernando de Soto, and Ferdinand Magellan) 3.21.b: Ability to identify the contributions of early explorers of the Americas (i.e., Christopher Columbus, Hernando de Soto, and Ferdinand Magellan)	3.21.UC: Identify why people move to new places (e.g., jobs, family, schools).
Early I	North American Settlements (1585-	1600s)
3.24: Explain the significance of the settlement of Jamestown and the role it played in the founding of the U.S. (C, E, G, H, P)	3.24.a: Ability to identify characteristics of the Jamestown settlement (e.g., first permanent English colony in North America, established trade with American Indians) 3.24.b: Ability to recognize how the Jamestown settlement influenced the development of the United States (e.g., led to the establishment of other colonies, developed representative government)	3.24.UC: Recognize the Jamestown settlement as America's first permanent English colony.
3.27: Identify the economic, political, and religious reasons for founding the Thirteen Colonies and the role of indentured servitude and slavery in their settlement. (C, E, G, H, P)	3.27.a: Ability to identify reasons (e.g., religious freedom, economic opportunity, better life) for which people came to the colonies	3.27.UC: Identify challenges with moving to a new place.

Academic Standards	Knowledge and Skills Statements (KSSs)	Underlying Concepts (UCs)
3.31: Describe life on the Tennessee frontier and reasons why settlers moved west. (C, E, G, H, P, T)	 3.31.a: Ability to identify differences between life on the Tennessee frontier and life in a city 3.31.b: Ability to identify factors that motivated people to move west and live on the Tennessee frontier (e.g., search for a new life and fertile farmlands) 	3.31.UC: Recognize characteristics of life on the Tennessee frontier (e.g., everything had to be done by hand, chopping trees, growing food, making clothing and other goods for the home).

¹ Instruction is not intended to be limited to the concepts, knowledge, and skills represented by the KSSs and UCs listed in Table 1.

Section II

Connecting Concepts

Grade-level social studies content includes Connecting Concepts, concepts that connect information between different people, places, events, and time periods. Helping students make connections between these types of concepts and new content information supports comprehension of the concepts, knowledge, and skills as well as transference and generalization (see Section VI for more information). Connecting Concepts that are specific to this module connect to content across the units within the module as well as across modules and across grades.

A Connecting Concept is a common link between multiple standards and units of study. The Connecting Concepts, by being revisited and linked to multiple units of study, become a strong foundation of understanding and support the students in learning new concepts. For example, understanding the cardinal directions on a map is a Connecting Concept that applies to political maps, physical maps, and historical maps. Some Connecting Concepts may apply across multiple content areas (e.g., reading) and instructional emphases (e.g., A story might be about explorers and include maps of exploration routes.).

Teaching Connecting Concepts

The following strategies, pulled from the principles of UDL (CAST, 2011), are ways in which to teach Connecting Concepts to help students understand the concepts and make connections between different curricular content. During instruction, highlight:

- patterns (e.g., When students work with various maps, indicate that north, east, south, and west are the same on the compass rose on all the maps.),
- critical features (e.g., Use a highlighter on a map to indicate critical information on which the student focuses.),
- big ideas (e.g., Discuss how maps can show where people live and the surrounding physical features.), and
- relationships (e.g., Make the connection between a map of the student's classroom and school to a map of Tennessee and the U.S.).

For example, when working with physical maps, emphasize the common features among different maps. In addition, build connections between familiar and new information (e.g., connect a map of the school that shows how to locate the gymnasium with a map that shows how to locate the places from which settlers came and the places to which settlers moved.)

Following are **Connecting Concepts** for this Content Module, Part 1: Geography and Economics and Part 2: Early American and Tennessee History.

Students understand:

- how to think spatially and use a variety of maps and map tools (e.g., compass rose, legend)
- how to interpret physical and political features on a variety of maps
- reasons and challenges of exploring and moving to new places
- ways America grew and developed over time
- how people interact with their environment to meet their wants and needs

Connecting Concept Resources²

- Grant Wiggins talks about "big ideas" in this article.
 http://www.authenticeducation.org/ae-bigideas/article.lasso?artid=99
- This site provides examples and printable versions of graphic organizers for social studies that can be modified to meet students' needs.
 https://walch.com/samplepages/050078.pdf
- School is Easy has information on teaching young children about maps.
 https://www.schooliseasy.com/2016/02/teaching-young-children-about-maps-to-help-their-learning-development/
- Interactive Sites for Education provides interactive map activities to help students understand how to read maps. http://interactivesites.weebly.com/maps--direction.html

Section III

Vocabulary and Background Knowledge

Vocabulary is critical to building an understanding of social studies concepts, knowledge, and skills. The vocabulary words that students gain through experiences provide ways for students to comprehend new information (Sprenger, 2013). Students can better understand new vocabulary when they have some background knowledge to which they can make connections. In addition, learning new vocabulary increases students' background knowledge. Therefore, it is important to teach vocabulary purposely when introducing new concepts, knowledge, or skills (e.g., identifying landforms on a map) and in the context of the specific content (e.g., teach the term "mountain" in the context of identifying landforms on a physical feature map).

This module includes two types of vocabulary words, both equally important to teach. The first type, general vocabulary words, labels groups of words that address different people, places, events, and time periods. For example, understanding the meaning of the word "customs" helps students to connect many different customs to a variety of contemporary and historical groups. The second type of vocabulary word, specific content words, represents groups of words that address a specific person, group of people, place, event, or time period. Specific content words are typically proper nouns, such as Southeast North American Indians, and connect to general words (e.g., customs). Providing instruction on general words provides background knowledge when introducing corresponding or related specific words.

Key Vocabulary for Instructional Units

Table 2 and Table 3 contain lists of key general vocabulary words and specific content words that are important for the units in this module. Each general vocabulary word should be taught to the student using a student-friendly description of what the word means, an example of the word, and a historical example, as appropriate.

Teach the specific content vocabulary using a student-friendly description of the word meaning and a possible connection to a general vocabulary word. Do not teach memorization of vocabulary words; instead place emphasis on understanding the word. For example, a student should be able to indicate a "need" versus a "want" instead of defining "needs" and "wants."

Table 2. General Vocabulary Words

General Vocabulary—words that generalize to different people, places, events, and time periods.

Describe the word and provide examples (e.g., Customs are ways specific groups of people live and dress. Example: The Southeast North American Indians lived in wood houses with bark roofs and wore deerskin for clothes. [Individualization idea: Provide pictures or samples of materials when teaching the vocabulary words.]

• canyon	government	river
 clothing 	industry	routes
• colony	map	settlement
 communication 	mountain	south
• customs	needs	southeast
• desert	north	southwest
• east	northeast	trade
 economics 	northwest	transportation
 explorers 	ocean	wants
• frontier	 religious freedom 	• west

Table 3. Specific Content Words

Specific Content Words—words that are specific to content (e.g., person, place, event).

Describe the word and make the connection to a general vocabulary word and a Connecting Concept when possible (e.g., "Ferdinand Magellan" was an "explorer" and maps and map tools can show the directions he traveled.). [Individualization idea: Provide a tactile map (see VIII Tactile Maps and Graphics) showing the routes traveled by European explorers.]

American Indians	Miami
Appalachian Mountains	Mississippi River
cardinal directions	New York City
Chicago	 physical feature
Christopher Columbus	Plains North American Indians
Ferdinand Magellan	• Seattle
Grand Canyon	 Southeast North American Indians
Great Lakes	 Thirteen colonies
Great Plains	 Tennessee
Hernando de Soto	 United States/U.S.
Jamestown	Washington, D.C.
Los Angeles	

Ideas to Support Vocabulary Learning

Table 4 includes ideas and examples for teaching vocabulary in a way to build conceptual understanding of the words.

Table 4. Ideas to Teach Vocabulary Effectively (Marzano, 2004)¹

Ideas	Examples
Explain, describe, and/or give examples of the vocabulary word rather than formal definitions.	Describe and provide an example of people's wants and needs. "Wants are things people like to have, but do not need to live. For example, you may want to watch a movie, but you do not need to watch a movie to live. Needs are things people need to live. For example, you need food to live." [Individualization idea: Provide objects or representative pictures of specific wants and needs of the student to share as examples.]
Have students restate the vocabulary word in their own words. Take this opportunity to help students connect new vocabulary, especially general vocabulary, to prior knowledge.	Introduce "settlement" by showing the connection to the local community. Have students describe "settlement" using words and short phrases (e.g., new place, where people live, share rules, etc.) [Individualization idea: Provide word cards with pictures for students to choose from. Place words and phrases on the student's Alternative and Augmentative Communication (AAC) system.]
Have students represent vocabulary words in a variety of ways (e.g., pictures, symbols, graphic organizers, or pictographs).	Have students complete word banks or graphic organizers for landforms using word descriptions, pictures, and connections to the words. (See Figure 1. Example Word Bank) [Individualization ideas: Have students watch a short video of landforms (e.g., https://www.youtube.com/watch?v=uYUzvMFv nps) or describe each landform while helping students experience characteristics of the landform (e.g., feel sand for the desert, water running for a river, etc.) while showing a picture of each.]
Provide multiple exposures to vocabulary words in a variety of ways. This does not suggest mass trials, but rather distributed trials in different ways or contexts. Reference http://projectlearnet.org/tutorials/learning trials.html for information on learning trials.	 Incorporate vocabulary into daily activities when it is appropriate (e.g., Connect classroom rules to the idea that Jamestown established rules.). Read books or watch videos related to the vocabulary and concepts. [Individualization idea: Paraphrase the grade-level book to one to three sentences for each vocabulary word (e.g., Transportation is the way we

Ideas	Examples
	move from one place to another. We use bicycles, cars, buses, trains, and airplanes. We need transportation to get to school or the doctor.) and include pictures.] • Have students complete activities such as sorting words into categories [Individualization idea: Provide a three-column chart with an outline of a mountain, a lake, or a river at the top of each column. Provide multiple photos or drawings of various mountains, lakes, and rivers for the student to sort using the chart.] • Have students "explore" using a map of the school to follow directions to find a resource or location (e.g., needed book). Include discussion of directions (e.g., north, east, south, west). [Individualization idea: Provide a large compass rose on the student's wheelchair tray to indicate direction when changing location.] • Discuss students' wants and needs when in the community or on field trips.
Ask students to discuss the vocabulary words with each other.	 Have students share their favorite word and why with each other. [Individualization idea: Provide the student with choices and place the selected word on the student's AAC device or on a voice output switch.] Have students share representations (e.g., drawings or photos) of vocabulary words with each other.
Play vocabulary word games with students.	 Have students describe a landform word and have peers guess what it is. [Individualization idea: Add descriptions to the student's AAC device or voice output switch.] Have students match a description or representative picture to a word. Have students select the word using their communication system (e.g., dual switch).
Have students watch a dramatization or have them act out the vocabulary term.	Act out cardinal directions using a compass rose that is taped on the floor and labeled.

 $[\]overline{\ }^1$ Refer to Section V, Universal Design for Learning (UDL) Suggestions for additional instructional strategies.

Vocabulary Example

Have students create a word bank of related terms (e.g., landforms). Students can write or paste descriptions of the word, draw or paste pictures of the word, and make a personal connection (e.g., visited, saw in a movie, viewed pictures, etc.). See Figure 1 for an example. Educators may need to support, modify, or adapt steps as needed for individual students. [Individualization idea: Allow the student to choose ways to describe the word from choices; choose a picture to represent the word, ask a family member to send in experiences such as vacations, movies, or books that relate to different landforms, etc.] Two National Center and State Collaborative (NCSC) resources are available and may prove helpful for vocabulary instruction:

- Use systematic instruction as described in the NCSC Instructional Guide. https://wiki.ncscpartners.org
- Reference ideas in the NCSC Vocabulary and Acquisition Content Module. https://wiki.ncscpartners.org

Figure 1. Example Word Bank

Word Bank

Word	Definition	Picture	Connections
desert	Very dry placeOnly a few plantsMostly rocks and sand		In a movie I saw
Word	Definition	Picture	Connections
mountain	 High place Higher than everything around it Peaks and valleys 		Vacation to the Smoky Mountains

Vocabulary Resources

- Vocabulary.com provides explanations of words using real-world examples. Once signed in, an
 educator can create word lists for students. http://www.vocabulary.com/
- TextProject provides Word Pictures that are free for educators to use. It includes word pictures for
 core vocabulary and various content areas including science and social studies. This link will take you
 to the Word Pictures page where you can select the category of words you want to use.
 http://textproject.org/classroom-materials/textproject-word-pictures/
- Education Place provides a variety of graphic organizers to be used for vocabulary instruction that are free to print and copy. http://www.eduplace.com/graphicorganizer/index.jsp

Section IV

Overview of Units' Content

This section of the module contains additional content and references to support educators' understanding and instruction of the instructional units. The information reflects important content to address the KSSs and to build students' knowledge, skills, and abilities; however, it is not exhaustive and should be expanded upon as needed.

Unit 1—Geography: Maps and Globes

Content

- Location of a place (e.g., school, library, park) on a community map
- Identification of places in relationship to each other on a map (e.g., above, below, near, far)
- Map elements on a variety of maps
 - o cardinal directions (north, east, south, west)
 - o intermediate cardinal directions (northeast, southeast, southwest, northwest)
 - o legends
 - o titles
 - o compass rose
- Location of major physical features on globes and maps
 - o canyons
 - o deserts
 - o mountains
 - oceans
 - o rivers
- Location of political features on maps
 - United States map
 - state boundaries
 - o cities

Unit 2—Geography: United States and Tennessee Geography

Content

- Location of major cities (e.g., Chicago, Los Angeles, Miami, New York City, Seattle, Washington, D.C.) on a political map of the U.S.
- Description of physical features (i.e., river, mountains, bodies of water, U.S. landforms)
- Location of major physical features on a physical map of the U.S.
 - Mississippi River

- Appalachian Mountains
- o Great Lakes
- Grand Canyon
- Great Plains

Unit 3—Economics

- Differentiating between human needs and wants
- The ways basic human needs are met and how
 - housing (e.g., protection from weather)
 - o industry (e.g., factory makes tires for the cars)
 - transportation (e.g., bring students to school)
 - o communication (e.g., phones to contact the doctor)
- The ways human wants are met
 - o housing (e.g., a game room)
 - industry (e.g., factory makes tablets to play games on)
 - o transportation (e.g., bicycles to ride in the park)
 - o communication (e.g., phones to talk to friends)

Unit 4—Indigenous Peoples through European Exploration (prior to 1585)

- Description (e.g., the clothing they wear), variation (different cultures wear different type clothing), and purpose of customs (e.g., clothing represents a person's status in the group)
- Customs (i.e., housing and clothing) of Southeast and Plains North American Indians
- Comparison of customs of the Southeast and Plains North American Indians
- Reasons people move to new places now (e.g., jobs, family, schools) and historically (e.g., better way
 of life, freedom, land)
- Identification that early explorers traveled from Europe to the Americas across the Atlantic Ocean
- Location of routes of early explorers (i.e., Christopher Columbus, Hernando de Soto, and Ferdinand Magellan) on a map
- Contributions of early explorers to European countries (e.g., new trade routes, better cartography, new land, and resources)

Unit 5—Early North American Settlements (1585–1600s)

- Characteristics of Jamestown—America's first permanent English colony
- Reasons the Jamestown settlement was established
- Daily life in the Jamestown settlement (e.g., farming, education, games)

- Ways the Jamestown settlement influenced the development of the United States (e.g., led to establishment of other colonies and developed a representative government)
- Reasons people came to the Thirteen Colonies (e.g., seeking wealth, land, religious freedom, adventure)
- Characteristics of the Tennessee frontier (e.g., everything had to be done by hand, chopping trees, growing food, making clothing and other goods for the home)
- Comparison and contrast of life on the Tennessee frontier and life in a city
- Motivations for people to move west and live on the Tennessee frontier

Unit Content Resources

Maps and Globes Including United States and Tennessee Geography

- Mr. Nussbaum Learning + Fun site includes a variety of geography activities and tools. Many include photographs and videos (http://mrnussbaum.com/world-geography-for-kids/). A few to highlight:
 - The Map Maker 2.0 tool allows the user to choose a black and white map to label, color, and add features. A short tutorial video is included. http://mrnussbaum.com/mapbuilder2/
 - The United States section features many different interactive maps, games, worksheets, etc. http://mrnussbaum.com/fifty-states-for-kids/
- This site provides a lesson plan on identifying landforms and bodies of water on a map.
 http://pmm.nasa.gov/education/lesson-plans/identifying-landforms-and-bodies-water-map
- National Geographic provides a lesson on mapping landforms.
 http://education.nationalgeographic.org/activity/mapping-landforms/
- TN History for Kids has a section on geography for elementary school students. http://www.tnhistoryforkids.org/geography/

Economics

- Social Studies for Kids provides a variety of economic information
 (http://www.socialstudiesforkids.com/subjects/economics.htm) including wants and needs.
 http://www.socialstudiesforkids.com/articles/economics/wantsandneeds1.htm
- PBS provides a lesson plan on needs vs. wants and includes a video.
 https://www.pbslearningmedia.org/resource/lpsc10.sci.life.lp_needwant/needs-vs-wants/#.Wt44kYgbOM9

Indigenous Peoples through European Exploration (prior to 1585)

- This site provides information on the Southeast North American Indians
 (https://www.warpaths2peacepipes.com/native-americans.htm)
 and Plains North American Indians (https://www.warpaths2peacepipes.com/native-american-indians/great-plains-indians.htm).
- Weebly contains a map, pictures, and information on the Southeast North American Indians. http://nativeamericanadventures.weebly.com/southeast.html

- Khan Academy provides cultural information on the Southeast North American Indians
 (https://www.khanacademy.org/humanities/ap-us-history/period-1/apush-before-contact/a/plains-indian-culture).
- Ducksters has information on early European explorers.
 - Christopher Columbus
 http://www.ducksters.com/biography/explorers/christopher_columbus.php
 - o Ferdinand Magellan http://www.ducksters.com/biography/explorers/ferdinand_magellan.php
- American History for Kids has information on Christopher Columbus. http://www.americanhistoryforkids.com/early-expeditions/
- Mr. Donn's site has information on Hernando de Soto. http://explorers.mrdonn.org/desoto.html

Early North American Settlements

- These sites have information on the Jamestown settlement:
 - o https://www.historyisfun.org/jamestown-settlement/history-jamestown/
 - o https://historicjamestowne.org/education/for-kids-and-families/jamestown-rediscovery-kids/kids-in-jamestown-history/
 - o https://kidspast.com/world-history/jamestown
 - o https://www.livescience.com/38595-jamestown-history.html
- History.com has a short video and information on the Thirteen Colonies. https://www.history.com/topics/thirteen-colonies
- Ducksters has information on the Thirteen Colonies.
 https://www.ducksters.com/history/colonial_america/thirteen_colonies.php
- Tennessee 4 Me has information and a slide show on the Tennessee frontier. http://www.tn4me.org/era.cfm/era_id/3

Section V

Universal Design for Learning (UDL) Suggestions

Three principles of the UDL—multiple means of representation, multiple means of action and expression, and multiple means of engagement—guide development of instruction, instructional materials, and assessments to provide access to learning to the widest range of students. A welldesigned lesson using the principles of UDL reduces the need to make accommodations and modifications. However, some students with significant cognitive disabilities, especially students with visual and/or hearing impairments, physical disabilities, and students with complex communication needs, may require additional scaffolds, adaptations, and modifications to access content and support learning. UDL's three guiding principles guide educators in creating instructional materials and activities in a flexible manner to address the needs of different types of learners. Utilizing the three principles of UDL as a framework when designing instruction allows for individualization when needed. Table 5 provides strategies and examples for the UDL Principle I, Multiple Means of Representation: presenting information in a variety of ways to address the needs of different types of learners. Table 6 provides strategies and examples for the UDL Principle II, Multiple Means of Action and Expression: providing a variety of ways for students to interact with the instructional materials and to demonstrate understanding. Table 7 provides strategies and examples for the UDL Principle III, Multiple Means of **Engagement**: providing a variety of ways to engage and motivate students to learn.

The strategies and examples provided in Tables 5 through 7 are based on UDL principles and can assist all students in understanding the basic concepts. The strategies and examples, as well as individualization ideas, should serve as a catalyst for ideas that can be individualized to meet the needs of each student. Some of the examples include activities that work exceptionally well for students with vision, hearing, and/or physical limitations as well as all students. Each example has a code to indicate when it includes specific ideas or activities that meet these needs:

V = visually impaired (low vision, blind, or deaf-blind)

H = hearing impaired (deaf, hard of hearing, or deaf-blind)

P = physical disability (limited use of hands)

Table 5. Instructional strategy ideas using the UDL Principle: Multiple Means of Representation

Multiple Means of Representation		
Strategies	Examples	
Introduce information through a multi-sensory approach (e.g., auditory, visual, tactile).	Create a three-dimensional physical feature map (e.g., http://www.ehow.com/how 7898709 build-landform-school-project.html). V [Individualization idea: Play sounds that would be heard around certain physical features (e.g., running river water, ocean waves, birds in woods or mountains) while students see pictures and possibly feel representations of the landforms.] Demonstrate life on the Tennessee frontier by having students experience making products that are now typically purchased (e.g., making butter - http://www.geniuskitchen.com/recipe/making-butter-classroom-cooking-414117 ; pioneer toy -	
Model content through pictures, dramatization, videos, etc.	http://oneshetwoshe.com/pioneer-day-activities). Watch a physical feature video such as this one with an animated character showing photographs of landforms: https://youtu.be/KWTDmg8OI Y. [Individualization idea: Provide textured representation for the student to feel as each landform is introduced.] V Create and share a slide show of the customs of the Southeast and Plains North American Indians.	
Present information using graphic organizers and models.	Present and have students complete a class version Venn diagram comparing and contrasting the customs of the Southeast and Plains North American Indians. [Individualization idea: Use copies of the pictures from the slide show to place on the Venn diagram.] Show maps of the routes taken by explorers (e.g., https://kids.britannica.com/kids/assembly/view/88703 and https://kids.britannica.com/kids/article/Ferdinand-Magellan/353407).	
Provide appropriate and accessible text on the content for students to listen to or read.	Paraphrase information from a textbook on large sticky notes. Place the sticky note over the original text, leaving the graphics. Write or type with a bold and plain font (e.g., Verdana, 18 pt. font) with good spacing between lines (e.g., 1.5 vs. single spacing). V Have students read online information on early European explorers. [Individualization idea: Provide simplified text and pictures that have text to speech (e.g., http://bookbuilder.cast.org/view.php?op=view&book=70272&page=1) or text in which the reading level can be adjusted (e.g., https://newsela.com/read/lib-ushistory-early-colonies/id/28205/) and use a text to speech reader (e.g., https://naturalreaders.com/).]	

Multiple Means of Representation	
Strategies	Examples
Teach information using songs.	Teach cardinal directions using a geography song (e.g., https://www.youtube.com/watch?v=UeeLivQH7Ok).
	Teach wants and needs using a song (e.g., https://www.youtube.com/watch?v=NyX PLSoJIw or
	https://www.youtube.com/watch?v=h1z4-YiZopY).

Table 6. Instructional strategy ideas using the UDL Principle: Multiple Means of Action and Expression

Multiple Means of Action and Expression		
Strategies	Examples	
Use technology/assistive technology to optimize student access and interaction with the instructional materials and content.	Create a narrated slide show of common physical features, including landforms and water, using simple text and pictures. [Individualization idea: Have students use a single switch to advance slides.] P Have students explore interactive landform map (e.g., http://www.eduplace.com/kids/socsci/books/applications/imaps/maps/g2_u2/). Provide students with online activities about North American Indians (e.g.,	
	Provide students with online activities about North American Indians (e.g., Various North American Indians - http://mrnussbaum.com/flash/indians3.swf and Plains Indians http://www.ballard-tighe.com/eaweb/ea13.swf). [Individualization idea: Have the student use an adapted keyboard, adapted mouse, or single switch] P	
	Have students play an explorers online interactive game (e.g., http://www.learner.org/interactives/renaissance/spicetrade/). [Individualization idea: Read directions, summarize directions, show the amounts on a bar chart to help the student see more/less, etc.]	
Allow for instructional materials that can be modified to	Provide printed information about life on the Tennessee frontier. [Individualization idea: Place printed text and pictures on a slant board for ease of viewing and proper posture.] V/P Present key ideas on the Jamestown settlement using text and pictures.	
provide access.	[Individualization idea: Create and attach tactile graphics or representative objects to a board with hook and loop tape and place within student's range of motion so the student can pull off each to explore and/or answer questions.] V/P	
Provide multiple means for students	Record correct answers and distractors on a voice output multiple message switch(s) and have students answer questions using the switch. V/P	
to make choices and select answers.	Place answer choices on an eye gaze board for the student to select from. P	
and select answers.	Have students use three switches with generic labels (e.g., a, b, c; red, blue, green; or three different textures) to which they listen and then select the correct answer. V/P	
Provide simulation activities.	Have students participate in a "living museum" by selecting a person from history (e.g., a fictional colonist, Christopher Columbus, a fictional Tennessee frontiersman, etc.) and sharing a few key facts about the person with other classes and/or family members. [Individualization idea: Help the student choose a person and decide which information to include in the presentation through a series of choices. Record, or have a peer record, the information on a voice output switch for the student to activate when presenting.]	

Multiple Means of Action and Expression			
Strategies	Examples		
Provide graphic organizers and templates.	Have students sort wants and needs on a T-chart using pictures. [Individualization idea: Have students sort objects and/or photos into two baskets.] V		
	Have students indicate location of cities on a map of the U.S. [Individualization idea: Provide pictures of key cities labeled with the city name for students to place on the map.]		

Table 7. Instructional strategy ideas using the UDL Principle: Multiple Means of Engagement

Multiple Means of Engagement			
Strategies	Examples		
Provide a schedule and visual timer.	Provide a schedule with tangible symbols. V/P Have students select the next activity on the schedule and set the timer or visual timer to indicate how long the student has before a break.		
Vary the challenge and amount of information presented at a time.	Present north and south on the map's compass rose and have students move a small toy car north and south while saying the direction the car is traveling. Add east and west next with the same activity. Finally have students move all four directions in the same session.		
Make connections to topics or activities that are motivating.	Show clips from favorite/familiar movies that show landforms. Have students use a picture of a favorite pet, cartoon, person, etc., to talk about traveling to colonial America (e.g., The pet dog gets a job on a ship as a watch dog. He wants to go so he can find a new place to play. He gets sick from the high waves, etc.).		
Allow choices as possible.	Allow students to choose whether to look at a book or watch a video about maps, physical features, etc., during independent work time.		
Provide opportunities to work collaboratively with peers.	Provide opportunities for students to work in a general education classroom with peers when learning how to use maps, or have peer tutors come into the special education classroom to work on a map project.		
Teach student self-regulation skills.	Provide students communication symbols to request a break or express feelings and model how to use them appropriately.		

UDL Resources

- The National Center on Universal Design for Learning has a plethora of information on UDL and examples and resources. www.udlcenter.org
- Symbaloo is a free online tool that allows an educator to create bookmarks using icons. It is easy to
 create and allows an educator to provide students links to sources of information that can be used
 for specific instructional units. www.symbaloo.com
- This site provides a brief description of Symbaloo and multiple ways to use the online tool.
 https://www.theedublogger.com/2014/04/09/11-ways-to-use-symbaloo-in-the-classroom/
- Perkins School for the Blind provides information on using tangible symbols to increase communication, create personal schedules, and provide choices. http://www.perkinselearning.org/videos/webcast/tangible-symbols
- Natural Reader provides a free online text to speech reader. https://naturalreaders.com/

Section VI

Transfer and Generalize Concepts, Knowledge, and Skills

For learning to be meaningful for all students, including students with significant cognitive disabilities, it is important to intentionally make connections to future content, real-world application, and college and career readiness skills. For example, explain how the student can use maps in their daily lives to determine the location of animals at the zoo, to navigate a walkthrough of exhibits in a museum, or to find transportation to work and stores in the future. In addition, the instruction of social studies concepts, knowledge, and skills may be the catalyst to developing other areas such as needed communication skills, reading/listening comprehension, age-appropriate social skills, independent work behaviors, and skills in accessing support systems. Table 8 provides instructional ideas to help transfer and generalize concepts, knowledge, and skills and suggested opportunities to embed other skills into instruction.

Table 8. Transfer and Generalization Ideas

Area	Instruction	Opportunity to Embed Skills
Communication	While teaching vocabulary, make connections to real-life or future opportunities to use the words (e.g., discussing a topic with co-workers).	Use the context of the content area instruction to increase language skills, work on articulation, or access alternative and augmentative communication (AAC) systems.
Reading and Listening Comprehension	Provide information through reading books and articles on colonial life when working on reading/listening comprehension.	Provide practice on communication skills when students are answering questions about the book or article. Provide opportunities for cause and effect switch usage as students activate a recording of a social studies song (e.g., needs and wants).
Age-Appropriate Social Skills	Make connections between the Connecting Concepts and real-life experiences showing how they can help students make decisions (e.g., ability to independently locate a section of the library).	Provide opportunities to work along same-age peers during social studies instruction to practice age-appropriate social skills.
Independent Work Behaviors	Encourage and reinforce independent completion of tasks to build independent work skills.	Use positive behavior supports to encourage and reinforce independent work skills during social studies activities.
Skills in Accessing Support Systems	Encourage students to ask appropriately for assistance from peers and adults when working on the content.	Use this time to have the student work on appropriate behavior and communication skills.

Section VII

Concepts and Vocabulary Multi-Age Planning: Grades Three through Five

Multi-age planning requires that instructional decisions address the span of the grade levels of the students in the class. Recognizing the Connecting Concepts and the General and Specific Vocabulary that apply to multiple units within and across a grade span provides information to teach concepts that build a foundation for specific curricular content (i.e., specific people, places, events, and time periods). This section illustrates the grade-level **Connecting Concepts** and the **General and Specific Vocabulary** across grades. This view (see Tables 9–13) allows educators of multi-age and multi-grade classrooms to address the same or similar concepts and vocabulary to all students along with the specific curricular content.

Table 9. Physical and Human Geography Concepts and Vocabulary

- **3.11.b:** Ability to identify major U.S. mountains (i.e., Appalachian) on a physical map
- **3.11.c:** Ability to identify major U.S. bodies of water (i.e., Great Lakes) on a physical map
- **3.11.d:** Ability to identify major U.S. landforms (i.e., Grand Canyon, Great Plains) on a physical map
 - 3.11.UC: Recognize a description of a physical feature (i.e., river, mountains, bodies of water, U.S. landforms).
- **3.21.a:** Ability to identify the routes of early explorers of the Americas (i.e., Christopher Columbus, Hernando de Soto, and Ferdinand Magellan)
- 3.21.b: Ability to identify the contributions of early explorers of the Americas (i.e., Christopher Columbus, Hernando de Soto, and Ferdinand Magellan)
 - 3.21.UC: Identify why people move to new places (e.g., jobs, family, schools).
- 5.29.a: Ability to identify that the Wilderness Road was a way to travel through the Appalachian Mountains into Tennessee
- **5.29.b:** Ability to identify the Cumberland Gap as a narrow pass through the Appalachian Mountains that is part of the Wilderness Road
- 5.29.c: Ability to identify that the Wilderness Road was an important route that helped people establish new settlements and trade in Tennessee
 - 5.29.UC: Recognize that important routes are used by people to explore and settle new lands.

- Grand Canyon
- Great Lakes
- Great Plains
- Hernando de Soto
- Los Angeles
- Miami
- Mississippi River
- New York City
- Seattle
- Tennessee
- United States/ U.S.
- Washington, D.C.

Grade 5:

- Wilderness Road
- Cumberland Gap
- Trail of Tears

Table 10. Culture Concepts and Vocabulary

Culture

Advancement and growth of human culture and civilization relates to development of literature, the arts, science, mathematics, and engineering in times past and present, and affects how people live in particular places.

places.				
Grades 3–5	Concepts	Vocabulary		
 3.19.a: Ability to identify similarities in the customs (i.e., housing and clothing) of the Southeast and Plains North American Indians 3.19.b: Ability to identify differences in the customs (i.e., housing and clothing) of the Southeast and Plains North American Indians 3.19.UC: Recognize a description of a custom. 3.31.b: Ability to identify factors that motivated people to move west and live on the Tennessee frontier (e.g., search for a new life and fertile farmlands) 3.31.UC: Recognize characteristics of life on the Tennessee frontier (e.g., everything had to be done by hand, chopping trees, growing food, making clothing and other goods for the home) 4:20.a: Ability to recognize a technological advance during the American Industrial Revolution (i.e., Eli Whitney's invention of the cotton gin) 4.20.b: Ability to recognize a contribution of Samuel Slater to the American Industrial Revolution (i.e., helping to develop the American factory system) 5.05.a: Ability to identify the contributions of inventors to American society (i.e., Alexander Graham Bell, Thomas Edison) 5.05.b: Ability to identify the impact of inventors on American society (i.e., Alexander Graham Bell, Thomas Edison) 5.05.UC: Recognize that inventions are contributions to American society. 5.28.a: Ability to identify American Indian tribes living in Tennessee prior to Tennessee statehood (i.e. Cherokee, Creek) 5.28.b: Ability to identify the customs of tribes living in Tennessee prior to Tennessee statehood (i.e. Cherokee, Creek) 5.28.b: Ability to identify the impact on the lives of the American Indians to leave their homelands and caused thousands to make a difficult journey (i.e., "Trail of Tears") 5.38.c: Ability to identify the impact on the lives of the American Indians who were forced to leave their homelands in Tennessee (e.g., loss of homelands, loss of life, hunger, disease) 	Understand: • that people have different customs (e.g., housing and clothing) • the reasons people move • the challenges faced when moving from one place to another • the effect of new developments on people's lives • how people and places can affect art, such as music	General: customs death disease frontier homeland hunger incandescent light bulb inventor/invention music performance radio show society statehood telephone Specific: Grade 3: Plains North American Indians Southeast North American Indians Southeast North American Indians Grade 4: American Industrial Revolution Eli Whitney Samuel Slater Grade 5: Alexander Grade 5: Alexander Graham Bell Andrew Jackson Cherokee Indians Creek Indians Creek Indians Elvis Presley Grand Ole Opry Indian Removal Act Thomas Edison Trail of Tears W.C. Handy		

Culture		
 5.51.a: Ability to identify the significance of performances and radio shows to the development of the music industry in Tennessee (e.g., Grand Ole Opry, WSM) 5.51.b: Ability to identify the contributions of individuals to the development of the music industry in Tennessee (i.e., W.C. Handy, Elvis Presley) 5.51.UC: Recognize that the music industry is an important industry in Tennessee. 		• WSM

Table 11. Economics Concepts and Vocabulary

Economics

Human and physical capital, natural resources, and technology on a local and global scale impact production, distribution, and consumption of goods and services. Decisions about how to use resources influence the welfare of individuals and societies.

Table 12. Civics and Politics Concepts and Vocabulary

Civics and Politics

Responsible and effective citizens understand structures of power and authority and the principles they reflect; their role within a community, a nation, and the world; and develop civic efficacy. Connections to the past and the way governments, principles, and traditions have developed impact current societies.

civ	iice	an	A	D٥	litics
LΝ	/ICS	an	а	PO	HTICS

- 5.09.UC: Recognize that adopting an amendment to the U.S. Constitution is a way to change the law.
- 5.16.b: Ability to identify a program of President Franklin D. Roosevelt's New Deal, such as Social Security
- 5.16.c: Ability to identify the impact of President Franklin D. Roosevelt's New Deal (i.e., retirement benefits, unemployment benefits, the expansion and development of national parks, the creation of jobs) on American society
 - 5.16.UC: Recognize that the U.S. government can help people to meet their needs (e.g., when they don't have enough money).
- **5.24.a:** Ability to identify events that led to the Civil Rights Movement (e.g., discrimination against African Americans, segregation of African Americans)
- **5.24.b:** Ability to identify the contributions of individuals to the Civil Rights Movement (i.e., Martin Luther King Jr., Rosa Parks, Diane Nash)
- 5.24.c: Ability to identify different approaches (e.g., Brown v. Board of Education court case) used to achieve civil rights during the Civil Rights Movement
 - 5.24.UC: Recognize that people act in different ways to bring about change.
- 5.38.a: Ability to identify the Indian Removal Act as a law passed during the presidency of Andrew Jackson that gave the federal government the authority to relocate American Indians living in Tennessee
 - 5.38.UC: Recognize that American Indians living in Tennessee were forced to leave their homelands because other people wanted their land.

Grade 5:

- 19th Amendment
 - American Indians
- Andrew Jackson
- Brown v. Board of Education
- Civil Rights
 Movement
- Diane Nash
- Franklin D. Roosevelt
- Great Depression
- Indian Removal Act
- Martin Luther King Jr.
- Progressive Era
- Roosevelt's New Deal
- Rosa Parks
- Social Security
- Women's suffrage movement

Table 13. History: Change, Continuity, and Context Concepts and Vocabulary

History: Change, Continuity, and Context

Historical events, the processes of change and continuity over time, the context within which events occur, and the significance of the contributions by individuals from various ethnic, racial, religious, and socioeconomic groups impact the development of civilizations and societies around the world.

groups impact the development of civilizations and societies around the world.				
Grades 3–5	Concepts	Vocabulary		
3.24.a: Ability to identify characteristics of the	Understand:	General:		
Jamestown settlement (e.g., first permanent English	 reasons and 	• battles		
colony in North America, established trade with	challenges of	 bomb/bombing 		
American Indians)	exploring and	 boycotts 		
3.24.b: Ability to recognize how the Jamestown	moving to new	 colony/colonists 		
settlement influenced the development of the United	places	 conflict 		
States (e.g., led to the establishment of other colonies,	 ways America grew 	 economics 		
developed representative government)	and developed	• frontier		
o 3.24.UC: Recognize the Jamestown settlement as	over time	 government 		
America's first permanent English colony.	 causes of 	harbor		
3.27.a: Ability to identify reasons (e.g., religious	disagreements and	 policies 		
freedom, economic opportunity, better life) for which	conflict between	protests		
people came to the colonies	countries and	religious freedom		
o 3.27.UC: Identify challenges with moving to a	groups of people	settlement		
new place.	 how the expansion 	• ships		
3.31.b: Ability to identify factors that motivated	of European	• trade		
people to move west and live on the Tennessee	settlers and	tidac		
frontier (e.g., search for a new life and fertile	colonists in	Specific:		
farmlands)	America affected	Grade 3:		
4.01.a: Ability to identify the impact of colonial	American Indians	American Indians		
settlement on American Indians (i.e., conflicts	 importance of 	Jamestown		
between colonists and American Indian nations)	people's actions in	Grade 4:		
o 4.01.UC: Recognize that colonial settlements	history			
caused changes in American Indian nations.		American Revolution		
• 4.04.a : Ability to identify the consequences of the		Revolution		
French and Indian War on the British rule of the		Battle of Saratoga		
colonies (i.e., Proclamation of 1763)		Battle of Yorktown		
• 4.04.c: Ability to identify major causes of the American		British		
Revolution (i.e., The Stamp Act, 1765, The Townshend		French and Indian		
Acts, 1767, "Taxation without Representation")		War		
4.09.a: Ability to identify the contributions of		Midnight Ride of		
individuals to the American Revolution (i.e., the		Paul Revere		
Midnight Ride of Paul Revere)		Taxation without		
4.09.b: Ability to identify the significance of major		Representation		
battles of the American Revolution (i.e., Battle of		The Stamp Act,		
Saratoga, Battle of Yorktown)		1765		
4.09.UC: Recognize that individuals and groups		The Townshend Asta 4767		
contribute during times of war.		Acts, 1767		
4.18.a: Ability to recognize that the United States		Thirteen Colonies		
fought wars against American Indian nations		Grade 5:		
4.18.b: Ability to recognize that American Indians		Andrew Jackson		
living in the southern United States were forced to		Battle of Franklin		
leave their homes during Andrew Jackson's presidency		Battle of		
		Gettysburg		
		Battle of Shiloh		

History: Change, Continuity, and Context			
 4.18.c: Ability to identify the impact of the Indian Removal Act during Andrew Jackson's presidency (i.e., Trail of Tears) 4.18.UC: Recognize that American Indian nations were located in the southern United States during the presidency of Andrew Jackson. 4.23.a: Ability to identify major causes of America's westward expansion (i.e., Manifest Destiny) 4.23.UC: Recognize that the United States gradually expanded from the eastern United States to the western United States. 4.34.a: Ability to identify the significance of major battles (i.e., Battle of Shiloh, Battle of Gettysburg) of the Civil War 4.34.UC: Recognize that battles occur during times of war. 5.18.a: Ability to recognize the direct consequences of the bombing of Pearl Harbor (i.e., destruction of the American fleet, loss of American lives) 5.18.b: Ability to recognize that the bombing of Pearl Harbor caused the United States to enter World War II 5.18.UC: Recognize characteristics of world wars. 5.42.a: Ability to identify Civil War battles fought in 		 Battle of Stones River Indian Removal Act Manifest Destiny Pearl Harbor Trail of Tears World War II 	

Tennessee (i.e., Battle of Stones River, Battle of

• **5.42.b:** Ability to identify the significance of Civil War battles (i.e., Battle of Stones River, Battle of Franklin)

o **5.42.UC:** Recognize that a war includes a series of

Franklin)

to Tennessee

battles

Section VIII

Tactile Maps and Graphics

The maps and graphics guidelines will help create tactile versions of instructional maps, diagrams, models, and timelines to use with students who are blind or deaf-blind. The tactile maps and graphics may be beneficial to other students as well. A tactile graphic is a representation of a graphic (e.g., picture, drawing, diagram, map, etc.) in a form that provides access through touch. It is not an exact copy of the graphic. The section provides basic guidance and links to more comprehensive resources.

Importance of Tactile Maps and Graphics

It is important to provide tactile graphics for young readers (BANA, 2010). It helps students understand and gain information when presented with social studies concepts, knowledge, and skills. Social studies instruction often uses maps and timelines to illustrate where and when people existed and events occurred. The following guidance includes information to build upon when creating tactile graphics.

Tactile Graphic Guidance

- Determine need for graphic: When encountering graphics in instructional materials, determine if
 the graphic is essential to understanding the concept. The Braille Authority of North America (2010)
 provides a decision tree to help in this determination. It can be accessed online at
 http://www.brailleauthority.org/tg/web-manual/index.html by selecting "Unit 1 Criteria for
 Including a Tactile Graphic."
- 2. Consult with the local educator trained to work with students with visual impairments.
- Determine the essential information in the graphic. Read the surrounding information and the
 caption to determine which information in the graphic to exclude. For example, a map to illustrate
 location of key countries would not need state lines and capital cities and may not need all of the
 surrounding countries.
- 4. **Reduce unnecessary detail in the graphic.** Identify details that are not necessary for interpreting the information in the graphic. For example, a graphic of landforms may show crevices on the mountains, leaves on a tree, and waves in an ocean. Eliminate unnecessary details, as they are difficult to interpret tactilely.
- 5. **Remove frames or image outlines if they serve no purpose.** Ensure that all lines are necessary (e.g., line that indicates a body of water), and remove any that are not.
- 6. **Modify the size of the graphic.** Modify the graphic as needed to reduce clutter and allow a blank space between adjacent textures. In addition, consider the size of the student's hand.
- 7. **Use solid shapes as feasible.** When solid shapes do not clearly represent the information, use clear solid lines.
- 8. **Systematically teach exploration and interpretation of tactile graphics.** Systematic instruction and repetition are important when teaching a student to understand a tactile graphic. Pairing the tactile graphic with a 3-dimensional object may help (e.g., pair a raised line drawing of a T-shirt, an example of clothing as a need, with a T-shirt).

Specific Graphic Type Guidance

Following is information for specific types of graphics that may support instruction in science and social studies.

Graphic Organizers/Concept Maps

• It is best to present information to compare or make connections in a tactile graphic. A tactile graphic presents the information in a spatial display and aids in comparison better than a list.

Diagrams/Models

- Limit the number of areas, lines, and labels. Having more than five makes interpretation difficult.
- Consider pairing a tactile graphic with a 3-dimensional model.

Timelines

• Present timelines in the same direction every time (i.e., horizontal or vertical).

Maps

- Distinguish water from land using a consistent background texture for the water.
- Align the direction of the compass rose arrows with the lines of longitude and latitude on the map.

Creating Tactile Graphics

Following are some ways to create tactile graphics. Additional information can be found at www.tactilegraphics.org.

Commercial products

- Capsule paper or swell paper—print
- Thermoform

Textured shapes can be made from:

- Sticky back textured papers found at craft stores,
- Corrugated cardboard,
- Fabric with texture (e.g., corduroy, denim),
- Silk leaves,
- Cork,
- Felt
- Vinyl,
- Mesh tape (used for drywall), and
- Sandpaper.

Raised lines can be made from:

- Glue (best not to use water-based glue), and
- Wax pipe cleaners.

Resources

- Creating Tactile Graphics, created by the High Tech Center Training Unit, provides basic principles of tactile graphics, characteristics of good tactile graphics, the planning process, guidelines for designs, and more. http://www.htctu.net/trainings/manuals/alt/Tactile Graphics.pdf
- The Texas School for the Blind and Visually Impaired provides basic principles for Preparing Tactile
 Graphics, element arrangement on a tactile graphic, resources for preparing quality graphics, etc.
 http://www.tsbvi.edu/graphics-items/1465-basic-principles-for-preparing-tactile-graphics
- Perkins School for the Blind has short videos that explain the importance of tactile graphics and information on spatial relationships and graphic literacy, moving from models to graphics, and strategies for reading tactile graphics. http://www.perkinselearning.org/videos/webcast/teaching-tactile-graphics

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Picture Citations

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