Safe Routes: Unit Scope and Sequence

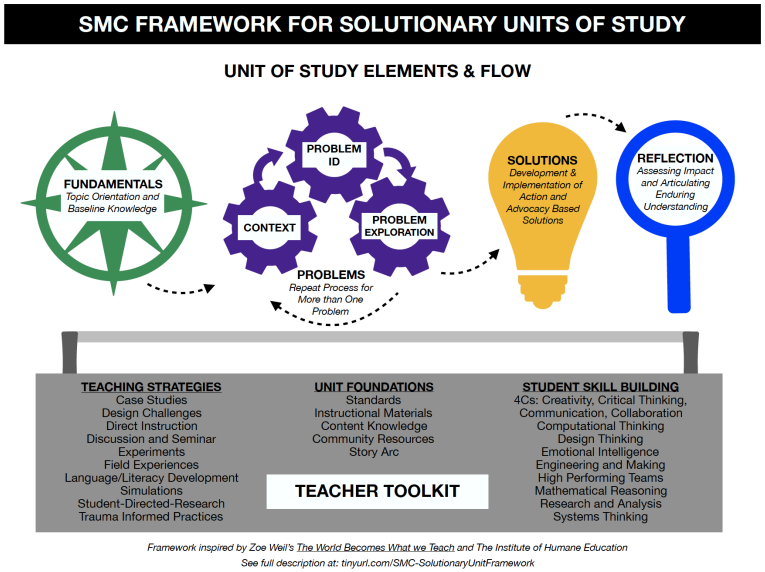
Grades K-5

UNIT CONCEPT

Walking or rolling to school are the healthiest modes of transportation for people and the planet. To reach this conclusion, students learn about the risks and benefits of various types of transportation, the infrastructural features and challenges of their neighborhood/community, and methods to implement solutions to foster a healthy and safe lifestyle.

UNIT TYPE & PHILOSOPHIES

The unit is an integrated unit, and will include science, history-social studies, and health, and extensions to literacy (reading, writing, listening & speaking) and mathematics. Additionally, the unit includes an emphasis on environmental literacy and career technical education (CTE). This unit also follows the structure of a Solutionary Unit of Study, which draws from multiple PBL learning theories (Project, Problem, Phenomenon, Place), Inquiry Based Learning, and Inquiry Based Learning. *See a graphic overview to the solutionary unit framework to the right and a written description of the framework here: tinyurl.com/SMCSolutionaryUnit.*



The Solutionary unit also draws on 21st Century Skill Building such as: 3-Star Learning Experiences, World Economic Forum, P21 Framework for 21st Century Learning

Solutionary include essential questions (EQ) and enduring understandings (EU). See examples below:

- EQ: How can learning more about modes of transportation to and from school, and our neighborhoods, keep us and the planet safe and healthy?
- EU: By learning more about the design of our community and safe transportation practices, we can make smart decisions that ensure the health of the members of our community and the planet.

Curriculum Scope and Sequence

General Overview of The Unit Phases and Timeline: The following table provides a big picture overview to the flow of learning segments within the unit. In order to complete the required learning segments within this unit in three to four weeks, instructors will need to commit at least 45-75 minutes each day of instruction.

Phase 1 *LS 1*	**Unit Fundamentals:** In addition to defining the concept of transportation and providing an overview to the unit, students will participate in team formation activities that build the foundations for student teams to be successful in working together.
Phase 2 *LS 2-5*	**Context and Problem Cycles:** ● Modes of Transportation: Students will do a comparative analysis of the main modes of transportation used to travel to and from school, and determine which are healthiest for people and the planet. ● Routes in General: ● Local Routes: Students will consider the question, “Is it safe to walk or roll to and from school?” The process for identifying the answer to this question will be the same for all communities; however, the answer will vary based on the local context.
Phase 3 *LS 6*	**Solutionaries:** Students will design and implement solutions to the problems they outlined in Phase Two.
Phase 4 *LS 7*	**Reflection:** Students will reflect on the impact of their solutions, on their enduring understandings from the unit, and on how they grew personally from being a changemaker in their community.
Skill Building	**Skill Building:** Students will have opportunities to build their skills for being able to walk or roll to school. Skill building can take place during any phase.

Specific Learning Segments

Segment and Lesson Plans		Overview	Time		Student Outcomes and Product	Standards and/or Skills
			Required	Extend		
LS 1	Fundamentals & Group Formation	This Learning Segment serves as an introduction to the Safe Routes unit, and an introduction to the teams that students will be working on for the duration of the unit. *Activities include:* ● Introduction to Transportation ● Group Formation: Public and Operations Agreements ● Group Formation: Team Bonding	60 min		Students will create public and operations agreements with their team members and establish a team name. Students will also be oriented to the topic of transportation.	CCSS/ELA-Literacy/ SL.5.1.A-D
LS 2	Analyzing Modes of Transportation	Learning Segment Two introduces issues related to the modes of transportation, such as the impact of these modes of transportation on human health and the planet. *Activities include:* ● Identifying Modes of Transportation ● How do Vehicles Work? *Cars, bikes, scooters, walking, etc.* ● Analyzing modes of transportation: human health, the planet, safety, etc.	240 min	60+ min	Students will be able to compare and contrast cars to human-powered transportation, to decide which methods are healthiest for people and the planet.	Science: K-LS1-1, K-PS2-1, K-PS2-2, 4-LS1-1 Health: Importance of Nutritional Foods and Physical Activity; Structures of the human body EP&Cs: 4A,B,C; 5A,B
LS 3	Defining and Exploring Transportation Routes	Learning Segment Three introduces the concept of a transportation *routes*, and invites students to analyze the relationship among transportation routes and the built and natural landscapes. *Activities include:* ● Pairing modes of transportation with type of transportation route.	90 min	30+ min	Students will be able to define and distinguish between the natural and built landscape. Students will identify that transportation	- Science: 2-ESS2-2, 4-ESS2-2, 5-ESS2-2 - ELA: Speaking and Listening - Math: 2.MD.1-4 2.MD.9-10 - Science: Grade 4: Sculpting Landscapes

		• Identifying the difference between natural and built landscapes. • Analyzing how transportation routes impact the built and natural landscapes. Examples Extension Lessons focus on the causes and effects of the growth and development of transportation routes overtime: • Population Growth or Changing Landscapes • Built Landscape and Ecosystem Destruction			takes place on built landscape, and that the built landscape from human transportation has an impact on ecosystems.	- History: Grade Four: Physical and Human Geographic Features That Define California - EP&Cs: 2A
LS 4	Transportation Routes in My Community	Learning Segment Four provides the context for students to understand the concept of a neighborhood, and to map and model their school's neighborhood. *Activities include:* • Defining Neighborhoods • Mapping at Different Scales: Classroom, School, and Neighborhood • Digital Mapping with Scratch	260+ min	90+ min	Students will be able to distinguish between a neighborhood and community, and then model their school and surrounding community at different scales.	- Hist/SS 2.2 - Science: 2-ESS2-2 4-ESS2-2 - Math: 2.MD.1-4 2.MD.9-10 - H/SS: K.4; 1.5; 1.6; 2.1 - EP&Cs: Principles 2,4,5
LS 5	Transportation Route Problems in My Local Community	Learning Segment Five asks students to consider the extent to which the transportation routes in their community are safe for walking and rolling to school on a regular basis. *Activities Include:* • Defining a safe route • Analyzing current routes for safety - examples of what can be analyzed include: quality and quantity of routes for walking and rolling, traffic congestion, local accident data, levels of pollution (air and other), weather,	150 min	60+ min	Students will analyze and collect data related to different issues that are associated with transporting to and from their school.	ELA.S&L 2.1 a,b,c History-Social Science 2.2 Health Grade 2 1.12.M, 3.1, 3.2, 4.1, 4.2 Science:K-ESS2-1; K-ESS3-2, K-PS3-1; K-PS3-2; Instructional segment 3: Weather Patterns EP&Cs: Principles 2,3,5

		etc. Example Extension Lessons: Problems and Solutions • Car Pollution • Stranger Safety • Free Range Children Debate • Pedestrian Safety • Crash Safety - Engineering Design Challenges				Science (car crash safety) 4-PS3-1 4-PS3-3
LS 6	Transportation Solutionaries	Learning Segment Six calls on students to brainstorm and design solutions for solving some of the problems they identified in Learning Segment Five. Students will then implement these action plans. *Activities include:* • Design Challenge - Designing an ideal route to school for your neighborhood (digitally and/or on paper) • Designing Action and Advocacy Campaigns around possible solutions • Implement Solutions Example Extension Lessons • Collective Transportation	250 minutes from framing to finalizing action plans Implementation time will vary		Students will design an ideal route to school that contains solutions to the problems they identified in previous learning segments. Students will take action by implementing their solution. Students will learn that everyone can implement change, no matter their size.	Science: K-2-and 3-5 ETS (Engineering) 1-LS1-1 HSS Grade 3
LS 7	Reflection	Students will reflect on their enduring understanding.	30 min+		Students will articulate their enduring understanding.	CSS/ELA-Literacy/SL .5.1.A-D
Skill Building Field Experience: Lesson		The Skill Building Field Opportunities are opportunities for students to build their skills for walking or rolling to school. Teachers must	Time Varies at least 120 min each		Students will take part in a skill building field	

Example	determine two things: 1) Type of Field Experience: walking or rolling (skating/scooting or biking) 2) At what point in the unit does skill building make their most sense for their students. Most recommended include: - Incorporate into LS2 - Incorporate into LS5 - Incorporate into LS7		experience for either walking or rolling.	