# TITLE: What’s your walk score?

***Subtitle: Walkable neighborhoods as healthy, social and safe communities***

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**Field tested with:** 10th grade Biology students, Watsonville High School, Watsonville, CA

**Module Type:** On-campus outside activity

**Duration:** 1 hr. 50 min. class session, plus 30 min. homework

**Key materials:**

* Community Walkability Worksheet (1 per student)
* Campus Map – included in worksheet (1 per student)
* Pen and clipboard for recording data (1 per student)
* Calculators or smartphone calculator app (optional)

**Concepts:** walkability, physical fitness, neighborhood safety, universal access

**Skills:** How to assess land use and access to services; understanding the importance of walking safety; building capacity to improve the walkability of students' own neighborhoods

**NGSS DCI:** LS2: Ecosystems: Interactions, Energy, and Dynamics

**NGSS Practices:** 2. Developing and using models; 8. Obtaining, evaluating, and communicating information

**NGSS CCC:** 1. Patterns; 6. Structure and function

# Overview:

This project is an opportunity for students to learn:

* Why safe and healthy communities are related to walkability
* How walkability of neighborhoods/schools can be assessed through a walk score
* How to think about, interpret, and communicate spatial information
* What factors in their community can be improved to increase walkability

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# Background for Teachers

**Why this matters:** Students, particular those in low income communities, are increasingly faced with poor nutrition and exercise options. One way to combat this while also building community and the capacity to make healthy living decisions is to teach about walkable communities. Teaching about walkable communities will also get students to think about the land uses in the neighborhood around them, make them more aware of their surroundings, and provide direction for improving their communities..

**Assumed background:** Prior knowledge about the importance of health and daily exercise, along with an understanding of civic engagement within their city are all that are needed for this module. This module serves as a hands-on add-on activity for a nutrition and health class.

**Special context:**

A. Before there were cars in every driveway and gas stations on every corner, and before Henry Ford designed the “horseless carriage”, traditional towns and cities were created on a human scale. Walking was the practical transportation mode of choice for most Americans, people’s age, ethnicity and class didn’t matter. Compact, mixed-use development allowed most business and recreation trips to be made by foot.

 The most obvious advantage of a walkable community for individuals is the health benefit of \_\_\_*physical exercise*\_\_\_. The rise in obesity in the United States has is associated with decades of development patterns that have made walking difficult or impossible. According to the Centers for Disease Control and Prevention, 30 percent of U.S. adults 20 years of age and older (that’s over 60 million people!) are obese. The percentage of young people who are overweight has more than tripled since 1980. Among youth between 6 and 19 years old, 16 percent (over nine million young people!) are considered overweight. Being overweight or obese puts people at risk for cardiovascular disease, diabetes, hypertension, high cholesterol, cancer, and higher rates of anxiety and depression.

 Many American families have become dependent on the automobile. At the same time, technological innovations, like televisions and personal computers, and the decline of jobs requiring physical labor have made America less walkable and reduced our social interactions. It’s now common to go through the day without walking more than a few hundred feet—from the kitchen to the garage, the parking lot to the office, the school steps to the curb, the parking space to the store, and the driveway back to the house. Walkable communities with universal access for the young, old, disabled and under-employed promote \_\_\_*social interaction* \_\_ by allowing people to connect with each other on the sidewalk or in the store, at work or in the park, and thereby build a sense of community.

 Sometimes people avoid walking because they don’t feel that the walking routes are safe or convenient. \_\_\_\_\_*Safe\_\_\_\_\_* routes to school or work are routes where there is little graffiti, trash, or sidewalk maintenance issues and thus very little threat of crime or threat to one's personal health. Walkable communities promote access to urban services through pedestrian infrastructure that can be used by the entire community, including the young, old, and disabled.

 Walkability allows you to assess how walkable your neighborhood is with physical fitness, social interaction and safety in mind. A walk score can help you measure walkability. While initially developed for real estate, the concepts are equally valuable for surveying the campus of a school or the neighborhood surrounding your home.

**Scaffolding supplements:**

NPR audio/article: <http://www.npr.org/blogs/health/2014/07/14/327338918/to-make-children-healthier-a-doctor-prescribes-a-trip-to-the-park>

Module Description

## Materials:

* Walkability worksheet that includes survey checklist and map (1 per student)
* Pen and clipboard for recording data (1 per student)

## Preparation:

* Teachers should practice walking school campus routes in advance to observe safety and accessibility issues
* Consider signed permission slips as liability waivers if off school grounds

## Timeline:

One full class period plus 30 minutes at the beginning of the next class period.

## Starting Point For Inquiry:

The link to the NPR audio article above can be used as a starting point before the module is introduced to get students to think about their route to school that morning. Encourage them to silently listen with their eyes closed so as to think about how many blocks they could shave off their bus route in order to integrate more exercise into their commute.

## Detailed Procedure:

1. Introduction - Background concepts and keywords, including activity introduction (20 min)
2. Field Activity – Split class into groups to practice walk score on their school campus (1 h)
3. Recap – Review what groups saw when practicing walkability of campus (20 min)
4. Independent surveys – Students will be asked to conduct two additional walk score surveys of their campus as homework during their lunch period or before/after school (30 min)
5. Calculate walk scores – In an additional class period after independent surveys have been completed the teacher can walk students through how to calculate the walk scores for their three routes (30 min)

## Assessment Methods:

1. Satisfactory understanding: Minimally completed the survey activity by only participating in the teacher-led route and not done their own routes as homework. Students in this category may have not summed neighborhood segments to arrive at their walk score and may not have suggestions for how to make their neighborhood more walkable.
2. Basic understanding: Students in this category have completed all routes *and* summed up weighted scores to arrive at a total walk score. In addition students have a working knowledge of the vocabulary. Students in this category have some suggestions when prompted for how to make their neighborhood more walkable.
3. Excellent understanding: Students have tallied all segment walk scores and can assess whether or not their neighborhood is walkable by referring to specific examples. Students have full understanding of the vocabulary as it relates to their school or neighborhood. Students have specific suggestions for how to make their neighborhood more walkable and can relate these back to the factors in the walk score survey.

## Possible pitfalls:

Students may have difficulty recognizing why something is or is not walkable given that most students are driven to school and that campuses are designed to be walkable. Teachers are encouraged to bring in examples from their own region to highlight less walkable suburbs and more walkable central business districts with which students may be familiar.

## Glossary:

**Walkability** is a measure of how friendly an area is to [walking](http://en.wikipedia.org/wiki/Walking). Factors influencing walkability include the presence or absence and quality of [footpaths](http://en.wikipedia.org/wiki/Footpath), [sidewalks](http://en.wikipedia.org/wiki/Sidewalk) or other pedestrian [rights-of-way](http://en.wikipedia.org/wiki/Right_of_way_%28public_throughway%29), traffic and road conditions, land use patterns, building accessibility, and safety.

**Walk Score** is an index of the walkability of a community. Walk scores are calculated by how accessible community services (the grocery store, park, doctor, etc.) are to your home or school and whether the routes to get to these destinations are safe, aesthetic, and universally accessible.

**Access** is the right or opportunity to get near to, have or use something. Access is often regulated by indicators (no skateboarding, park hours, one way streets, social norms) which tell us where and when we can/cannot be. Walkable neighborhoods should be accessible to everyone, including those with disabilities, the elderly, the young, and the under-employed.

# NGSS Standards Addressed

**Disciplinary Core Ideas**

LS2: Ecosystems: Interactions, Energy, and Dynamics

**Science & Engineering Practices**

2. Developing and using models

8. Obtaining, evaluating, and communicating information

**Cross Cutting Concepts**

1. Patterns - Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.

6. Structure and function - The way an object is shaped or structured determines many of its properties and functions.

# Guide to supplemental materials

**Labs (or Activities)**

Field Project: Walkability\_worksheet.doc