



YOU CAN CHANGE FRESNO

LITTER STUDY GUIDE

LESSON 1



What is Litter?

One definition of litter states that it “consists of items found in socially unacceptable locations.” Litter can be a result of deliberate actions, or can be accidental—like when materials become windblown from the back of a vehicle.

| Why Should Litter Be Addressed?

To some people litter may seem like a relatively unimportant issue. However, the truth is that litter has important implications for the environment and in communities. Litter can negatively impact the health and safety of humans and animals, as well as the economic health and overall quality of life of communities.

| Health and Safety of People and Environment

Litter and debris in and around living quarters and businesses can attract insects and rodents, which pose a health and safety risk to people. Other types of litter that pose a threat to humans, animals and the environment include:

- Illegally disposed scrap tires, for example, fill with water and attract mosquitos, which carry several illnesses
- Refrigerators with the doors still attached are risks to children who can become locked inside
- Flammable and corrosive agents
- Byproducts from drug production such as methamphetamine (“meth” labs)
- Illegally disposed needles from legal and illegal drug use
- Lit cigarettes

| Types of Litter

- Cigarette butts
- Food packaging
- Plastic bottles
- Disposable cups
- Grocery bags
- Plastic straws
- Other trash discarded by pedestrians and motorists

Health Risks to People and Animals

- Some material types, like scrap tires and wood piles, can spontaneously catch fire, putting people, property and animals at risk
- Debris from improperly covered loads and vehicular debris (truck tire treads, for example) cause hundreds of deaths annually across the U.S.
- Debris that is carried to waterways via storm drains and wind can be ingested by aquatic animals and birds or entrap them

Aesthetics and Quality of Life

Litter along roadways, in public spaces, and on private property has negative impacts on aesthetics and quality of life. A community park or downtown area that has litter strewn about is likely to be less inviting to the public.

Studies show that once litter exists on a site, others are more likely to litter at that location. The existence of litter can further lead to neglect and abuse of the property, deteriorating the appearance and safety of a site.

Economic Impact

Litter cleanup cost alone costs the nation \$11.5 billion per year.

Litter can result in significant negative economic impacts. Besides the direct costs of cleaning up litter (which is conducted by businesses, state and local departments of transportation, parks management, etc.), there are many indirect costs. Litter can make an area less appealing to visitors and tourists, resulting in direct and indirect sales and tax revenue losses. Litter that ends up in waterways, for example, can have a negative impact on tourism-related businesses such as boat tours, commercial and recreational fishing, and tourism activity in general. Litter also results in a reduction of property value. According to a model developed by the National Homebuilders' Association, the presence of litter in a community reduces a property's value by 7%. Litter can also deter businesses from locating in a community, resulting in fewer local jobs.



The Broken Window Theory

Studies have shown that once an area has been subject to litter, people are more prone to not only litter, but also otherwise damage the property, often leading to graffiti and other vandalism and antisocial behaviors. A small quantity of litter essentially has the potential to initiate a significant downward spiral for a specific location, which impacts quality of life in the community overall.

Lesson 1 Review

1. All litter is intentional. **True or False**
(circle one)

2. The only problem litter poses is aesthetic in nature. **True or False**
(circle one)

3. Litter and illegal dumping can pose health and safety risks. **True or False**
(circle one)

4. Provide two examples of how litter can harm a community:

5. Describe the "Broken Windows Theory":

LESSON 2



Why Do People Litter?

Research shows that 85% of litter is related to individuals' attitudes and other individual factors. That means changing attitudes is key to preventing litter. In an observational study, 81% of littering was intentional, not accidental.

Recent studies looking at the types of littering behavior over time (from 1990 to present) have shown that there is a trend away from deliberate littering, with littering as a whole dropping by approximately 2% per year since the 1990s.

Convenience (Real or Perceived) of Receptacles

Studies show that whether adequate receptacles for trash, recyclables, and cigarettes are convenient is closely related to the existence (or non-existence) of trash at a location. Of course, convenience can be subjective. In particular, distances of over 20 feet were correlated with a higher rate of littering. Among smokers, the presence (or lack thereof) of a cigarette/ash receptacle was even more influential than the impact on other litter.

The Presence of Litter at the Site

Individuals are much more likely to litter in an already littered environment.

And once there, it attracts more litter. On the other hand, a clean and tidy community, including those with no litter, nice landscaping, and well-maintained infrastructure, discourages littering and improves overall quality of life in the community.

Demographics

| Location & Family Size

There is some evidence that people living in rural areas are more likely to litter than people living in cities. In addition, some research suggests that individuals from small households (1-2) are less likely to litter than those from large households (5+).

| Social Norms

Studies show that social norms have a strong influence over a person's decision to litter (or not), and that social norms regarding littering have changed over the last 50 years from a moderate level of concern to a strong feeling of personal obligation not to litter.

Recent research through telephone surveys and behavioral observations shows that people are considerably less likely to litter when they believe that it is wrong to do so, even when receptacles are not convenient. This is why it's important to change attitudes and social norms to stop littering.

| Age

Several studies show that age is negatively correlated with the likelihood of littering—that is, younger people are more likely to litter than older people.

- Individuals under the age of 30 are more likely to litter than those 30 or over.
- People aged 19 and below are more likely to litter than any other age group.
- It has also been suggested that adults aged 21-35 are three times more likely to litter than those over the age of 50 and two times more likely to litter than those aged 35-49.

| Gender

Gender does not influence the likelihood of littering to a significant degree, although some studies suggest that males are more prone to admit that they litter than females.



Where Do People Litter?

Roadsides

There are over 51 billion pieces of litter on our nation's roadways, 4.6 billion of which are larger than four inches in size.

Litter is thrown from vehicles, blown to roadsides from other locations, and is inadvertently blown from moving vehicles. Roadways impacted include federal highways, state highways, and city and county roads.

Litter is commonly quantified in terms of pieces of litter, as opposed to by weight. In litter composition studies, it is often categorized by size. For example: over four inches or four inches or less in size.

On average, there are 1.3 pieces of litter per every foot of roadway (to a 15-foot depth) in the U.S., or 6,729 pieces of litter per mile. On a per-mile basis, there is more litter along urban roadways (7,728 pieces of litter per mile) than rural roadways (6,357 pieces of litter per mile). However, because there are more rural roadways (by nearly three-fold), there is more litter among rural roads, nationally. Also on a per-mile basis, considering national, state, municipal and county roads, the average number of items per mile is greatest along national roadways, followed by state, county and lastly municipal roads.

Non-Roadside Locations

While we hear much about roadside litter, there are other places where litter commonly occurs. They include (but are not limited to) the following types of locations:

- Parks and recreation areas, particularly picnic areas
- Outside of buildings – particularly venues where people are expected to finish food, beverage, and smoking before entering (also referred to as “transition areas”)
- Vacant lots
- Parking lots
- Areas where trash and recyclables are managed, such as transfer stations, landfills, and trash and recycling convenience centers
- Festivals and events
- Loading docks
- Shopping areas
- Bridges and overpasses
- Near convenience and grocery stores
- Storm drains
- Transportation hubs (e.g. bus stops, train stations, etc.)

Having a better understanding of where littering occurs can help identify where recycling, cigarette, and trash receptacles may need to be located.



Roadside Litter

There are over 51 billion pieces of litter on our nation's roadways, 4.6 billion of which are larger than four inches in size.

- Tobacco products
- Other litter (not elsewhere classified)
- Miscellaneous paper
- Packaging
- Miscellaneous plastic
- Beverage containers

Non-Roadside Litter

While roadside litter is often the focus of litter survey studies, other types of litter are also generated in non-roadway locations. Litter may have originated on the site, or may have migrated from a roadway, loading dock, garbage truck, or recycling bin with the help of wind or water. Examples of non-roadside litter types (which could also be found roadside) include:

- Signage not removed in a timely fashion (i.e., election signs, event signs, missing pet signs)
- Scrap appliances
- Abandoned automobiles
- Vehicle debris/parts
- Construction and demolition debris
- Scrap tires
- Typical household or business trash
- Snack wrappers
- Beverage containers
- Cigarette butts
- Gum
- Paper
- Abandoned boats left on moorings or at docks in waterways (also referred to as "derelict vessels")

Lesson 2 Review

1. The type of roadways with the most litter per mile are _____ roadways.
(national, state, county, or rural)

2. However, considering the number of miles of each of these types of roadways, _____ roadways are the largest source of roadside litter.
(national, state, county, or rural)

3. The most common type of littered item along roadways is: (circle one)
a) tobacco products b) beverage containers c) snack packaging

4. Littering is always intentional: **Yes** or **No**
(circle one)

5. List three reasons people might litter:

1. _____
2. _____
3. _____

6. What is one way litter can occur unintentionally?

Strategies to Prevent, Clean and Stop Littering

Extensive research, using observations of behavior as well as self-reported behavior, has been done to help guide strategies to end litter. Strategies include:

- Providing adequate and convenient waste management services
- Having adequate receptacles and implementing other environmental design strategies
- Education and outreach
- Monitoring and surveillance
- Penalties/enforcement and ordinances
- Cleanup efforts

Strategy 1: Provide Adequate and Convenient Waste Management Services

Some types of material are observed to be littered/illegally dumped because people either don't know what to do with it, or don't want to pay for proper management. This type of waste may be found roadside, on private property, or on empty lots in rural areas. Examples include:

- Abandoned vehicles and vehicle parts
- Electronics
- Appliances
- Scrap tires
- Waste oil and antifreeze
- Construction and demolition debris
- Mattresses/furniture
- Leaves and yard trimmings
- Other bulk items
- Hazardous waste, including household hazardous waste and medical waste

Communities can help end litter by ensuring that adequate, convenient programs exist, and that residents, businesses, and visitors are made aware of them, as well as the expectation that materials are to be managed properly. Practices that can help avoid illegal dumping include:

- Communities provide garbage and recycling collection to all "single-family" households. When residents pay for their own trash collection, some residents may illegally dispose of their trash to avoid paying that cost.
- Provide a convenient, low-cost means of managing yard trimmings and Christmas trees.
- Provide low-cost or no-cost collection of household hazardous waste (HHW) and scrap tires.
- Provide convenient options for management of construction and demolition (C&D) materials.
- Provide convenient options for management of appliances, or provide residents with information about programs that exist to manage these items at the end of their useful life.
- Inform residents of proper ways to manage medical waste.

Often programs are in place but residents and businesses are not aware of them. If programs are not being used, communities may try to identify the barriers (real and perceived) that exist—such as lack of knowledge, lack of convenience, cost, etc. This could be done through a community survey or as part of the litter enforcement process.

Strategy 2: Have Adequate Receptacles in Place and Implement Other Environmental Design Strategies

The presence or lack of appropriate receptacles for cigarettes, trash, and recyclables, significantly impacts littering behavior. This is especially true of cigarettes and other tobacco products. Therefore, having trash, recycling, and cigarette receptacles in convenient locations is imperative.

Transition points, or areas where it is required to finish/dispose of items, such as at a building entrance, are especially important areas for receptacle placement. People are more likely to use receptacles if they:

- are conveniently located (> 20 feet is associated with an increased rate of littering)
- are emptied as needed
- are in a clean, well-lit, highly visible area
- are brightly colored or themed as appropriate for the type of venue where they are located

Other environmental design elements can make it less likely that crimes, including littering, will take place. The concept is referred to as “Crime Prevention through Environmental Design.” Because people are more likely to litter or commit other crimes in areas where they cannot be seen, designing spaces where all areas are highly visible is one way to reduce litter and crime.

This includes good lighting and landscaping that enhance visibility throughout the entire space. Another strategy is territorial reinforcement, which is a unified design throughout the public space and a well-maintained, neat appearance that gives the public the impression that the space is well controlled and therefore not an appropriate place to litter or commit other crime

Strategy 3: Education and Outreach

Education and outreach are important when it comes to changing or encouraging people to behave a certain way. Messaging can be broad, but usually there is a more specific target audience that needs to receive, understand, and act upon a specific message.

Education and outreach can serve many purposes relative to preventing and cleaning up litter. Examples include:

- Make generators of waste and other materials aware of the potential negative impacts of litter
- Help establish a social norm that littering is unacceptable/broadly promote anti-littering
- Make generators of waste and other materials aware of the availability of options for properly managing materials
- Educate generators about steps they can take to minimize waste and litter
- Make generators of waste aware of the ordinances that exist against litter, and the enforcement actions that can result from violations of these ordinances
- Solicit volunteers to help with cleanup activities

When considering the target message, take the following into account:

- What is the intended message?
- What action is desired of the target audience?
- What seems to motivate the target audience?
- How can the target audience be reached?
- What will get their attention?
- How can the target audience stay engaged?

It is important to ensure the message is conveyed in a manner that is clear, concise, interesting, correct, and consistent with other publications and messaging. Studies show that people need to hear a message several times before it “sinks in.” It is also important to remember that different types of messages motivate people differently. Similarly, different modes of receiving information are more effective for some people than others.

Strategy 4: Actively Monitor/Conduct Surveillance

Known littering and dumping locations should be actively monitored. Litter/illegal dumping “hotspots” might be monitored with law enforcement patrols or surveillance cameras. Some communities do not have surveillance cameras in place, but post signs saying that the area is under surveillance and showing the potential fine for littering. This strategy has received mixed results.

Strategy 5: Develop and Enforce Litter and Illegal Dumping Laws, Rules and Ordinances

There are a myriad of laws and ordinances that describe litter and litter-related crimes. There are state laws, administrative rules (e.g. enforceable by the state environmental and other agencies) and local ordinances.

State laws that often relate to litter and illegal dumping include:

- Litter (commercial/residential)
- Sanitation/health
- Public nuisance
- Water protection

And, to a lesser extent:

- Abandoned/junk vehicles
- Abandoned vessels/property
- Laws pertaining to specific types of waste (e.g. electronics, lead acid batteries, appliances, waste tires, hazardous waste, etc.)
- Laws pertaining to specific locations (e.g. state beaches)
- Administrative laws governing state agencies and those that are permitted by state agencies/use state agency land (e.g. fish and wildlife, environmental management, state parks, etc.)

In some states, local ordinances cannot cover the same violations that state laws do. In others, some laws at the local level must be at least as strict as the state law.

Local litter-related ordinances may include:

- Litter/commercial litter
- Solid waste (storage, collection, and transport, theft of service, stockpiling of waste, permitting of haulers)
- Marine debris/littering of waterways
- Sign ordinances (particularly for temporary signs)
- Nuisance ordinances/laws, including those for specific material types (e.g. waste tires)
- Neglected property/vacant lots
- Abandoned vehicles
- Abandoned vessels

Litter and illegal dumping are most often enforced via state and local law through local law enforcement and code enforcement officers. Local ordinances are municipal/county laws that, if violated, can usually result in code violations or civil offenses, or perhaps misdemeanors. It would be less common for a local ordinance violation to result in felony charges. Violations of state laws may be civil offenses or criminal offenses, including misdemeanors and felonies.

In addition to state-level criminal laws and local-level ordinances and codes, there are also state-level administrative rules and regulations that can be enacted by state agencies, such as departments of natural resources, forestry, fish and wildlife, state parks, etc. Officers of these agencies can typically enforce a state criminal law, but might prefer to use an administrative process if a license or permit is issued by the agency to the offending individual (e.g. a solid waste facility permit, a commercial fishing license, etc.), as this can be a swifter and more meaningful penalty or deterrent.

Additional ordinances that are not typically part of litter or solid waste management ordinances and generally have a different primary purpose but can result in reduced litter include smoking bans and bans, deposits or fees on specific packaging types.

| Strategy 6: Clean Up Litter and Illegal Dumps

Because litter begets litter and often other anti-social behaviors including other crimes, and because illegal dumps can pose a health and safety hazard, it is critical to clean up litter and illegal dumps as soon as possible. Cleanup of public roadways, waterways, and other public spaces such as parks, recreation areas, and other public lands is always the responsibility of the jurisdiction. Litter along federal highways is the responsibility of local or state governments.

Many private businesses and other private property owners take responsibility for cleaning litter on their own property in a timely fashion, which is ideal. When the property owner cannot be located or lacks resources to clean the property, the local government must initiate cleanup.

Local governments or organizations will often conduct cleanups on private or publicly owned property, when the property owner is unable or unwilling to clean up the property. Cleanups may be done with staff, volunteers, those serving community service hours, or with prison/work furlough laborers.

| Who Else Helps Keep America Beautiful?

Keep America Beautiful Affiliates – There are over 1,200 affiliate and partner organizations to Keep America Beautiful. These affiliates and partners help organize litter cleanups, with the help of volunteers. Keep America Beautiful affiliates are also proactive with conducting education and outreach to help stop litter in their communities.

Environmental Organizations – Environmental organizations like The Audubon Society, The Sierra Club, The Ocean Conservancy and The Surfrider Foundation organize cleanups at beaches and other locations.

Other Volunteers/Organizations – Often with the assistance of Keep America Beautiful affiliates, or on their own, other volunteer organizations such as scouts, sororities and fraternities, and others, volunteer to conduct cleanup activities. Through the Adopt-a-Highway, Sponsor-a-Highway and Adopt-a-Spot programs, corporations and organizations can receive recognition on a sign for providing volunteers to regularly clean a section of highway or a specific location.



BEAUTIFY FRESNO

There are a lot of things we can't change.
But we can change Fresno by not littering and
picking up trash where we see it.

Lesson 3 Review

1. What kinds of litter do you find in your community? Circle all that apply.

Regular trash/recyclables

Construction and demolition debris

Electronics

Scrap Tires

Appliances Abandoned
vehicles/vehicle parts

Mattresses/furniture

Hazardous waste

Medical waste

Other bulky waste Items

2. Are there specific public areas that lack adequate receptacles for trash, recycling, and/or cigarette butts? If so, describe.

3. Are there any materials you circled above that have convenient, low-cost programs for recycling or throwing away litter, but people may lack awareness of them?

4. Are there specific types of people that can be identified that are likely generating/littering this material (e.g. visitors, businesses, people that live in areas where they have to subscribe to trash services, haulers, etc.)?

5. What could be done to help reduce litter in your community?

Environmental Stewardship

What is environmental stewardship?

The responsible use and protection of the natural environment through conservation and sustainable practices to enhance ecosystem resilience and human well being.

What are stewardship actions?

The activities, behaviors, decisions, and technologies carried out by stewards—individuals, groups, or networks of actors.

The choices you make every day make a big difference.

The things we do every day affect the environment. By reusing products, reselling, and recycling you dramatically reduce your carbon footprint from the provision of goods.

Plastic

Reuse things you take to school with you every day. Change out your paper sack lunches to reusable lunch bags/boxes. Use washable ziplock bags and reusable water bottles and utensils to avoid disposable products. Use items every day that you can take home and wash instead of just throwing them away.

Cut up any plastic rings so they don't harm wildlife. Plastic rings are made out of materials that don't meet recycling requirements so they end up in landfills full of birds and other creatures looking for food.

Energy

Turn off the lights when not using them and whenever you leave a room.

Unplug electronics when not in use.

Reduce your water usage by taking shorter showers and turning off the water when you're not using it, like while you're brushing your teeth.

What is Fast Fashion?

Inexpensive clothing produced rapidly by mass-market retailers in response to the latest trends. This includes clothing from places like Shein, H&M, Zara and Forever 21. According to the UN Environment Programme (UNEP), the industry is the second-biggest consumer of water and is responsible for about 10% of global carbon emissions.

Fast fashion brands use synthetic fibers like polyester, nylon, and acrylic which take hundreds of years to biodegrade. A 2017 report from the International Union for Conservation of Nature (IUCN) estimated that 35% of all microplastics—tiny pieces of non-biodegradable plastic—in the ocean come from washing synthetic textiles like polyester in washing machines.

It's estimated that 85% of all textiles are thrown away every year. To reduce waste and dependence on fast fashion, you can donate old clothing instead of throwing it out, buy second hand clothing from thrift stores or participate in clothing swaps. You can also up-cycle old clothes by fixing small defects or using them to make something new.



| Food

Organic waste, such as food scraps, yard trimmings, paper, and cardboard, make up half of what Californians send to landfills.

Try to eat leftovers instead of throwing them away. Start a compost bin. Eat locally produced/organic foods.

Dispose of things the right way

- Make sure you know which trash goes in the right trash bin
- Enforce recycling at home
- Don't recycle disposable bags
- Don't recycle anything smaller than a credit card like bottle caps, straws, paper clip, etc—example: keep the bottle caps screwed onto the bottle so it's easier to capture and sort
- Make sure your recycling is clean, empty, and dry

| What is Senate Bill 1383?

California SB 1383 is a bill that sets goals to reduce disposal of organic waste in landfills, including edible food. The bill's purpose is to reduce greenhouse gas emissions, such as methane, and address food insecurity in California. Aspects of this law ensure that food scraps are composted and compost is purchased by cities.



Lesson 4 Review

1. Environmental stewardship is something only individuals can do. **True or False**
(circle one)

2. Name one way you can reduce how much plastic you use:

3. Name one way you can reduce the amount of energy you use:

4. Name one way you can prevent food waste:

5. California SB 1383 is a bill that sets goals to reduce disposal of _____
in landfills.

What Does it Mean to Beautify an Area?

Beautify means to improve the appearance of something.

Beautifying a local community happens through cleaning streets and other public places, creating attractive community gathering and socializing spaces, beautifying the facades of buildings and planting trees and flowers in public areas.

Community beautification raises community and individual pride, and often brings a community closer together for common activities, with noticeable crime reduction effects.

| Beautifying Fresno

You can beautify your community through volunteering. There are many opportunities to do community service that don't require prior skills and experience—and many that will build skills and experience for future career opportunities.

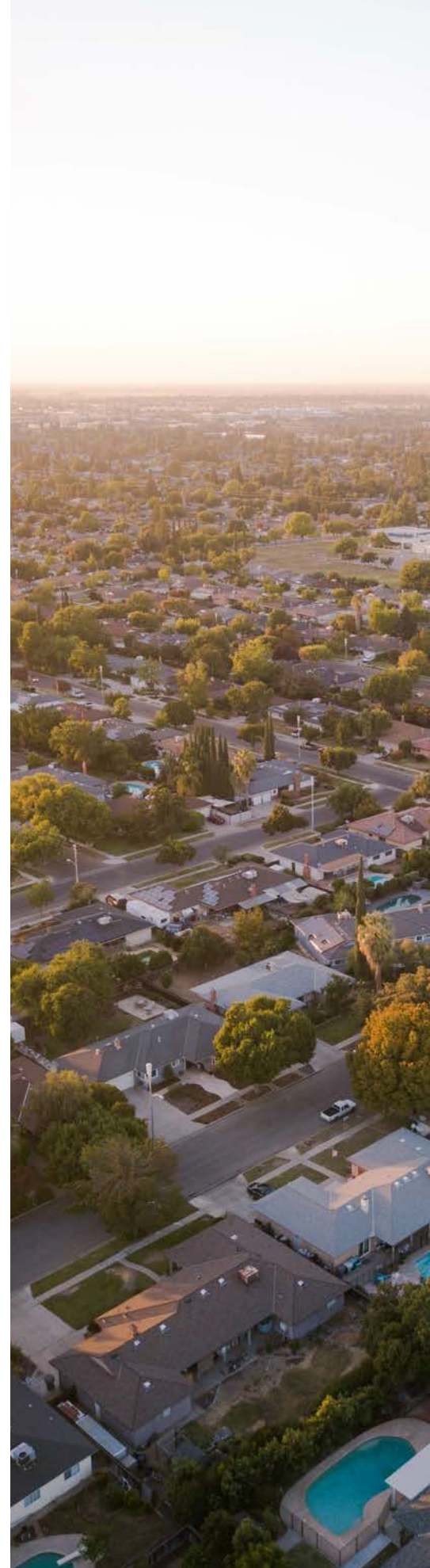
Beautifying an area could mean a lot of different things. And you can volunteer to help in a number of different ways. You could volunteer to clean up a public space, or if you enjoy making art, you can volunteer to paint over graffiti or join other local artists in designing and painting murals. If you enjoy working outside, you could volunteer to plant flowers or trees.

| Benefits of Volunteering

Volunteering can provide a healthy boost to your self-confidence, self-esteem, and life satisfaction. You are doing good for others and the community, which provides a natural sense of accomplishment. Your role as a volunteer can also give you a sense of pride and identity.

Spreading happiness and making your community a better place

- Gaining new skills
- Meeting new people with common interests
- Building your resume
- Helping protect wildlife and our environment





Where Should I Volunteer?

Beautify Fresno

Beautify Fresno seeks to encourage everyone to see the beauty in our city and to take action to beautify Fresno. The mission of Beautify Fresno is to inspire everyone to take pride in their community and to show them that everyone can take action to make our community a clean and beautiful place to live. Students, school clubs, service clubs, churches, professional organizations, and anyone who wants to lend a hand are encouraged to consider hosting a clean-up event or volunteer with Beautify Fresno.

Contact: (559) 621-8626

The San Joaquin Parkway and Conservation Trust, Inc.

You can beautify your community through volunteering. There are many The River Parkway Trust was founded through the dedication and passion of volunteers who were concerned about development in the San Joaquin River bottom. Over the last 30 years, thousands of volunteers have donated their time and talent to programs and projects like habitat restoration, River Field Trips for children, summer camp, fundraising, advocacy, and more.

Contact: (559) 248-8480

Habitat for Humanity of Fresno and Madera

Habitat for Humanity is a nonprofit organization that helps people in your community and around the world build or improve a place they can call home. Volunteers can work to revitalize our community by participating in clean up opportunities.

Contact: (559) 237-4102

Tree Fresno

The Mission of Tree Fresno is to transform the San Joaquin Valley with trees, greenways and beautiful landscapes. You can volunteer to plant trees, care for trees and greenery, or participate in community events.

It's easy to find and sign up for volunteer opportunities. Like the organizations listed above, most nonprofits have a simple online form on their website that you can fill out in order to become a volunteer!

Contact: (559) 221-5556

Lesson 5 Review

1. What does it mean to beautify an area?

2. Name one way you can beautify an area.

3. Name two benefits of volunteering.

4. Most volunteer opportunities are hard to sign up for. **True or False**
(circle one)

5. What's one nonprofit organization you'd be interested in volunteering for?
