Earth Day 2022 Toolkit





Introduction: Toolkit design and goal



Students collect cigarette butts during a beach cleanup. Photo by Maile Sur, 2014

Since 1970, Earth Day has become a day of action towards environmental consciousness that has led to the creation of the Environmental Protection Agency (EPA) and several environmental laws. Fast forward to today, Earth Day has become not only a worldwide observance, but a critical day to continue fighting for a clean environment as we have seen the effects of climate change. It's time to Invest in our planet because the earth is not disposable.

The Earth Day Toolkit is designed to assist tobacco prevention advocates like you in creating and implementing successful tobacco-free Earth Day events on college campuses. As climate change becomes more prominent in the world, few people are aware of the destructive relationship that exists between vaping, tobacco production and consumption, and the environment. It is the goal of the California Youth Advocacy Network (CYAN) and COUGH (Campuses Organized and United for Good Health) to educate college communities on the devastating impact tobacco has on the environment. Additionally, it is the aim of CYAN's College Program to support grassroots tobacco-free advocacy on college and university campuses.

Included in this Earth Day Toolkit are several documents designed to increase your knowledge of tobacco and the environment as well as assist you with planning of campus-based Earth Day events. The packet includes a short but comprehensive overview of tobacco and the environment and a detailed overview of how the environment is negatively impacted by tobacco. In addition to information about tobacco and the environment, we have included Earth Day event ideas, sample media pieces, and sample Earth Day flyers and advertisements.

We hope this information is both useful and motivating to you and those you work with.

The CYAN College Project & COUGH

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Background

From Production to Destruction











TOBACCO PRODUCTION

- Tobacco is grown in over 100 countries throughout the world.
- China is the world's largest producer followed by Brazil, India, the United States, Malawi, and Indonesia¹.

TOBACCO FARMING

- Before tobacco can be planted, the ground must be prepared by carefully plowing the land to kill the ground's old root system, leveling off the fields, burying old crop refuge, breaking up the soil, and incorporating pre-plant pesticides.²
- The tobacco plant requires an enormous amount of attention and care since it is susceptible to many diseases. This care includes the chemical application of fungicides, insecticides, fumigants, and pesticides.³
- It is recommended to farmers that during the first three months of growth, there should be 16 separate applications of pesticides.⁴

^{1.} United States Department of Agriculture. World's Leading Unmanufactured Tobacco Producing, Trading, and Consuming Countries. http://www.fas.usda.gov/tobacco/circular/2004/122004/TBL1dec2004.PDF

^{2.} The Science Behind Tobacco. Liberty Science Center. www.lsc.org/farming/plant.html

Ibid.

^{4. &}quot;Tobacco – The Smoke Blows South," Panos Media Briefing. No. 13, September 1994.



- **ALDICARB** is considered one of the most toxic pesticides registered in the U.S. The agricultural formulation of Aldicarb contains the toxic contaminant dichloromethane, which causes damage to hearing, vision, kidneys, and the liver. Dichloromethane is both a carcinogen and a mutagen and is also toxic to birds, fish, honeybees, and earthworms.
- **CHLORPYRIFOS** is considered a broad-spectrum organophosphate insecticide. Chlorpyrifos is known to contaminate air, groundwater, rivers, lakes, rainwater, and fog. Residues from Chlorpyrifos can be found up to 15 miles from the site of application.
- **1,3-DICHLOROPROPENE** (1,3-D), also known as Telone, is a highly toxic soil fumigant. The chemical seeps through soil easily and has been found in U.S. groundwater, drinking water, and rainwater. Studies have found 1,3-D to cause cancer in laboratory animals and genetic damage in insects and mammal cells.⁶

DID YOU KNOW?

- The U.S. Geological Survey estimates that at least 25.6 million pounds of pesticides are used on tobacco crops each year.
- The U.S. Environmental Protection Agency (EPA) has a list of over 450 registered and legal pesticide products for use on tobacco.
- This list includes chemicals that may cause cancer and birth defects as well as pesticides that are potent nerve toxins.⁵



^{5.} Hickey, Ellen, and Yenyen Chan. "Tobacco, Farmers, and Pesticides: The Other Story." San Francisco: Pesticide Action Network, 1998.

^{6.} Ibid.

METHYL BROMIDE USE

- A handful of crops tomatoes, strawberries, peppers, nursery crops, and tobacco are grown with methyl bromide, an odorless, toxic gas.
- The gas is used to furnigate and sterilize the soil by exterminating all living organisms.
- In 1997, over one million pounds of methyl bromide were applied to U.S. tobacco fields while over 5.5 million pounds were applied worldwide.
- The U.S. EPA classifies methyl bromide among the most lethal of extremely toxic pesticides.
- The ozone layer is also greatly affected by methyl bromide.⁷



The U.S. EPA classifies methyl bromide among the most lethal of extremely toxic pesticides.

STORAGE & DISPOSAL

- Used bottles and packets of pesticides should not be burned, buried, or disposed of in community environments.
- Farmers have few options for proper disposal.
- With no local hazardous waste collection centers or recycling centers in developing countries where tobacco is grown, the toxic pesticide containers end up in fields, rivers, and woods.⁸
- A study in Southern Brazil found that nearly 80% of tobacco growing families disposed of their waste inadequately by throwing the used pesticide containers in the woods or burning them.⁹

^{7.} Ibid.

^{8. &}quot;Hooked on Tobacco." February 2002. Christian Aid. www.christianaid.org.uk/indepth/0201bat/batsum.htm

^{9.} Golden Leaf Barren Harvest: The Costs of Tobacco Farming. Washington: Campaign for Tobacco Free Kids, 2001.

TOBACCO MANUFACTURING

- The manufacturing of tobacco results in a sizable amount of liquid, solid, and airborne waste.
- Liquid waste includes tobacco slurries, solvents, oils, and greases.
- Solid waste is inclusive of paper, wood, plastic, unusable tobacco, packaging materials, and contaminated dirt.
- In 1992, the EPA reported that 27 million kilograms (kg) or approximately 59.4 million pounds of chemical waste was generated from tobacco manufacturing, with 2.2 million kg (4.85 million pounds) of this hazardous waste released into the environment.¹⁰
- In 1999, a report disclosed findings regarding the production of what the tobacco industry call "healthier" cigarettes. Ironically, as these "low- nicotine" products are produced, the amount of nicotine waste and impact on communities and the environment is increased.¹¹



In the flue method, a common tobacco curing process, if wood rather than coal is used to create the heat for curing, severe deforestation can result.

^{10.} Novotny, Thomas, and Feng Zhao. "Consumption and Production Waste: Another Externality of Tobacco Use." Tobacco Control Journal 1999: 75-80.

^{11.} Ibid.



- The clearing of land to be used for tobacco farming as well as the curing of tobacco contributes greatly to the destruction of forests throughout the world.
- Curing of tobacco leaves is done through one of three methods - flue, fire, and air. The air curing process is the only one of the three processes that does not use wood for burning.¹²
- The flue method is the most prevalent tobacco curing process. In this process, if wood rather than coal is used to create the heat for curing, devastation to the land and severe deforestation can result.
- Once the forests are cleared and the resources depleted, the domino effect of ecological destruction occurs.

DID YOU KNOW?

- In countries throughout Africa, wood is seen as a "free good" and is relatively easy to obtain. ¹⁴ Roughly 5% of deforestation in all of Africa is caused by tobacco production.
- In Malawi alone, tobacco production is responsible for 26% of deforestation within the country. In the Namweran highlands region of Malawi, nearly 80% of all harvested wood is used for tobacco processing, even though only 3% of farmers in the area work on that crop. 15



All of this decreases the biological diversity and ecological sustainability of all living creatures in the land.¹³

^{12.} Geist, Helmut. "Global Assessment of Deforestation Related to Tobacco Farming." Tobacco Control Journal 1998: 294-298.

^{13.} Chapman, Simon. "Tobacco and Deforestation in the Developing World." Tobacco Control Journal 1994: 191-193.

^{14.} Ibid.

^{15.} Golden Leaf Barren Harvest: The Costs of Tobacco Farming. Washington: Campaign for Tobacco Free Kids, 2001.



- Tobacco production is heavily dependent upon wood and natural resources of countries throughout the world.
- Tobacco companies invest in reforestation programs with the intent to refurbish area woodlands and natural resources. However, these programs create greater problems for the environment.
- The root system of the eucalyptus tree, which is typically planted to replace the indigenous trees that have been removed, removes water from neighboring crops and vegetation. This is an inappropriate option for arid, water-scarce environments as it takes up to 10 years to mature.
- In addition to being a wholly non-indigenous species to most areas that grow tobacco, the eucalyptus tree's planting season coincides with tobacco and food planting season, making it very difficult for any farmer to put reforestation before food or possible income.¹⁶

16. Ibid.

HOW THE TOBACCOIMPACTS THE EARTH

FIRE DANGER

- Globally, cigarettes are responsible for an estimated one million fires per year at a cost of US \$27.2 billion a year.
- In the United States alone, approximately 100,000 fires are caused from cigarettes each year adding up to \$6.95 billion in expenses.
- In 1986, the world saw the worst forest fire in China's history when a cigarette ignited a blaze that destroyed 1.3 million hectares of land, the equivalent of more than 3 million acres or 3 times the size of Rhode Island.¹⁷

TOXIC AIR CONTAMINANT

- Secondhand smoke, also known as environmental tobacco smoke (ETS), has been formally identified as an airborne toxic substance by the California Environmental Protection Agency.
- Secondhand smoke is a complex mixture of compounds produced by burning of tobacco products. It is also a source of other toxic air contaminants such as benzene, 1,3 butadiene, and arsenic.
- Each year in California, tobacco smoke is responsible for the release of 40 tons of nicotine, 365 tons of respirable particulate matter, and 1900 tons of carbon monoxide.¹⁸

^{17.} Mackay, Judith, and Michael Eriksen. The Tobacco Atlas. Geneva: World Health Organization, 2002.

^{18. &}quot;California Identifies Secondhand Smoke as a Toxic Air Contaminant." California Environmental Protection Agency. January 26, 2006

CIGARETTE LITTER

- Annually, an estimated 5.6 trillion filter-tipped cigarettes are smoked and disposed of throughout the world, leading to 135 million pounds of discarded cigarette butts.¹⁹
- Other products such as cigarette cartons, packs, cellophane wrappers, and chew containers are common forms of trash.
- In California, cigarette butts make up 34% of total litter collected, and California public agencies make spend an excess of \$41 million annually on litter cleanup.²⁰
- Ingestion of littered butts can cause serious health problems in humans and animals.²¹
- Littered cigarette butts release toxic chemicals such as nicotine and arsenic into the environment.²²
- Chemicals from cigarette filters bleed into soils, waterways, and runoffs from urban environments. Recent research suggests that littered cigarette butts are point sources for prolonged metal contamination in the environment, which increases the potential for harm to local organisms.₂₃
- Cigarette butts are considered non-biodegradable waste.²⁴ These tiny pieces of trash are made of cellulose acetate, which is photodegradable, but not biodegradable. The filters trap the toxins from the tobacco such as arsenic. When littered into the environment, all the toxic chemicals are released.²⁵



- 19. California Department of Public Health Tobacco Control Program. (2012). Environmental Impact of Tobacco Fact Sheet. Sacramento, CA.
- 20. Ibid.
- 21. Novotny, T. E., Hardin, S. N., Hovda, L. R., Novotny, D. J., McLean, M. K., Khan, S. (2011). Tobacco and cigarette butt consumption in humans and animals. Tobacco Control, 20(1), i17-i20.
- 22. California Department of Public Health Tobacco Control Program. (2012). Environmental Impact of Tobacco Fact Sheet. Sacramento, CA.
- 23. Moerman, J.W., Potts, G.E. (2011). Analysis of metals leached from smoked cigarette litter. Tobacco Control, 20(1), i30-i35.
- 24. California Department of Public Health Tobacco Control Program. (2012). Environmental Impact of Tobacco Fact Sheet. Sacramento, CA.
- 25. Smith, E. A., Novotny, T. E., (2011). Who's butt is it? Tobacco industry research about smokers and cigarette butt waste. Tobacco Control. 20(1) i2-i9

E-CIGARETTES AND THE ENVIRONMENT

- E-cigarette waste is harmful for the environment because it contains metal, circuitry, single-use plastic cartridges or pods, batteries, and toxic chemicals in e-liquids, such as nicotine.²⁶
- The e-liquid left in cartridges and refills contain nicotine salts and heavy metals, which can leach into soil and waterways or can be ingested by wildlife when improperly disposed of.
- E-cigarette waste cannot biodegrade even under severe conditions. Discarded e-cigarette cartridges break down into microplastics and chemicals that flow into storm drains, polluting waterways and wildlife. ²⁷
- The lithium-ion batteries in e-cigarettes have been known to explode and cause fires in garbage trucks and waste manage- ment plants if damaged or exposed to extreme heat.

A California survey found that 56% of fires at waste facilities between 2016 and 2018 were reported to have been caused by batteries, most of which were lithium-ion ones. ²⁸



E-CIGARETTE DISPOSAL

- E-cigarette waste from single-use plastics (e.g., the vaping device itself, pods, cartridges, e-liquid containers, and product packaging) are hazardous for the environment because it creates plastic waste, toxic bio-hazard waste, and electronic waste, all of which needs to be disposed of separately.²⁹
- E-cigarette manufacturers do not provide guidance to consumers on how to dispose of used devices or podcartridge products. Puff Bars, which are marketed as disposable e-cigarettes, provide minimal instruction on how to dispose of the device properly. ³⁰
- There is no industry guideline for recycling e-cigarettes in the U.S. and no requirement in place to hold manufacturers accountable for the post-consumer waste they helped produce.
- About 46.9% of e-cigarette device owners said their vape device didn't include disposal information on where to send used batteries or empty pods. 57.8% of past-30 day vape users found it inconvenient to dispose of e-cigarette waste responsibly.
- 26. Truth Initiative (2021). Tobacco and the Environment. Retrieved from https://truthinitiative.org/research-resources/harmful-effects-to-bacco/tobacco-and-environment.
- 27. Truth Initiative (2021). A toxic, plastic problem. E-cigarette Waste and the Environment. Retrieved from: https://truthinitiative.org/research-resources/harmful-effects-tobacco/toxic-plastic-problem-e-cigarette-waste-and-environment.
- 28. Ibid.

- 29. Truth Initiative (2020) What are Puff Bars? Retrieved from: https://truthinitiative.org/research-resources/emerging-tobacco-products/what-are-puff-bars.
- 30. Truth Initiative (2021). Tobacco and the Environment. Retrieved from https://truthinitiative.org/research-resources/harmful-effects-to-bacco/tobacco-and-environment.
- 31. Ibid.

Earth Day Events





EDUCATION IDEAS

- Host a game or trivia night to test students' knowledge on the harmful effects of e-cigarettes and single-use plastic vape products on the environment. This is an opportunity to correct any misinformation and to educate students on the environmental impact of tobacco use.
- Kahoot or Jeopardy are virtual platforms where you can create interactive games for both virtual and in-person events. If possible, a gift card incentive can be provided to participants.
- Host a virtual Q&A on social media platforms (e.g., Instagram) to educate students and followers. This is a great opportunity to involve student partners, such as peer health educators or student ambassadors, by having them answer questions from fellow peers.
- Organize an art or video contest to encourage students to get creative and express themselves, while educating peers on the environmental impact of tobacco and/or encouraging peers to quit vaping and tobacco.
- Ask campus administration to post a tobacco-free message on the homepage of the campus website or a campus learning management system (e.g., Litmos) with high web traffic from students. This posting can include information about tobacco and the environment, details about your virtual event, and resources to support students in quitting tobacco.
- Co-host events or make announcements at club meetings with other campus organizations to spread awareness of the negative environmental impact of e-cigarettes, disposable vaping devices, and single-use products (e.g., pods and cartridges).
- If your campus is partially open or has hybrid operations, consider partnering with departments that are currently inperson (e.g., residential halls, departments with lab classes, student athletics, etc.) to host on-campus events and provide educational materials.
- Send a Letter to the Editor or create a newsletter with information about how tobacco is harmful for the environment. This can include information on the current tobacco-free policy and available tobacco treatment resources for the campus community.
- Promote your Earth Day event on the student radio, any campus podcasts, or various campus social media accounts.



ADVOCACY IDEAS



- Educate campus leaders and decision makers on tobacco's destructive relationship with the environment, specifically with your campus, by setting up a virtual meeting or attending a general assembly meeting. In-person meetings may be an option if safe and available.
- Educational visits with campus decision makers are an opportunity to assess the current smoke or tobacco-free policy on campus and discuss the adoption, implementation, or compliance of the policy once campuses reopen and how the current policy can be strengthened.
- Attend associated student government meetings and other student-led campus organization meetings to provide

information on campus tobacco prevention efforts, the smoke or tobacco-free policy, and oncampus cessation services that are available to students for support of their quit efforts.

Arrange a virtual nicotine waste cleanup and encourage students to clean up the campus or
their local community. You can have participants submit photos to highlight on a campus
website or post on social media using a unique hashtag. For campus cleanups, you can
make the connection that vaping and tobacco use on campus is still an important issue
even during the pandemic.

DID YOU KNOW?

Even if campuses are still operating virtually due to the pandemic, Earth Day is an opportunity to advocate for a smoke and tobacco-free policy on campus with the focus of creating a plan to reopen smoke and tobacco-free to protect the health of the campus community and the environment.

TOBACCO TREATMENT IDEAS

ENCOURAGING QUIT ATTEMPTS

- Utilize social media to post messages on the devastating
 effects of e-cigarette and tobacco use on the environment and
 encourage students, faculty, and staff to quit to protect their
 health and the environment. Social media posts should also
 include a link to further resources to support quit attempts,
 such as cyanonline.org/quit-tobacco or the campus health
 center.
- Digital Earth Day pledges are a tool to engage students in participating in Earth Day events. Instagram allows for easy sharing and tagging so people can share why they choose to live-tobacco free.
- Challenge students to start their quit journey on Earth Day and pledge to protect their health, the community, and the environment.



DID YOU KNOW?

Social media posts along with an educational video on vaping and the environment are available at https://catobaccofreecolleges.org/calendar/2022/4/22/earth-day-2022

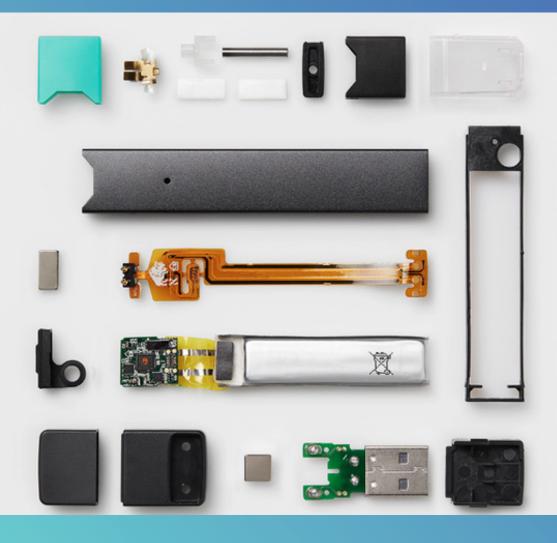


CYAN provides free materials to colleges and universities to assemble quit kits.

SUPPORTING QUIT ATTEMPTS

- Make quit kits and/or Earth Day tote bags available for students to pick up on campus. You may partner with the health center or campus pharmacy if open. Shipping may also be an option to consider if resources are available.
- Partner with departments operating on campus (e.g., residential halls, athletics, departments with lab classes) or local community organizations, such as food distribution centers or restaurants, to distribute educational resources, tote bags, and/or quit kits.
- If buildings on campus offer free hand sanitizer or masks, consider making educational materials or tote bags available along with more information or resources to support quitting.
- Ask the student health center staff to host office hours or drop-by meetings on Earth Day to provide support or answer questions for students interested in quitting vaping or tobacco.
- Advertise campus resources that are available (e.g., health center). Additional resources to support young people in quitting are available on cyanonline.org/quit-tobacco, which include information on KickIt California, free apps and texting programs, and a digital quit kit.

Earth Day Materials





E-Cigarettes and the Environment

Key Messages for Youth and Young Adult Advocates

KEY MESSAGE #1 - VAPING GENERATES A SIGNIFICANT AMOUNT OF TOXIC AND PLASTIC WASTE

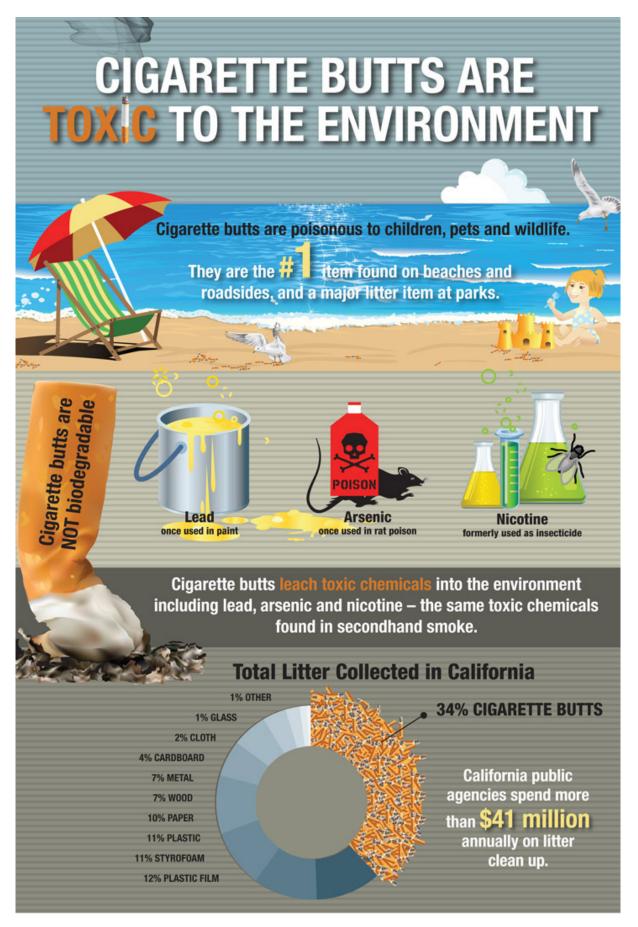
- E-cigarette waste consists of microplastics, metals, nicotine, and combustible lithium ion batteries. Liquid nicotine is classified as hazardous waste by the Environmental Protection Agency (EPA).
- Vaping devices and their component parts are considered single-use plastics, which are plastic items made to be disposed of after use. This includes the device, pods, cartridges, e-liquid containers, and any product packaging.
- Single-use plastic accounts for half of all plastic created worldwide each year and the production is a major contributor to climate change and planet-warming greenhouse emissions.
- Disposable vapes, such as Puff Bar and Stig, are also considered single-use plastic products and cannot be thrown away in the trash or recycled with other plastics.
- Both vaping devices and its batteries contain hazardous substances, such as lead and mercury.
- It is estimated that over a billion pieces of plastic vape waste is created each year.

KEY MESSAGE #2 - E-CIGARETTES AND THEIR COMPONENT PARTS ARE DAMAGING TO THE ENVIRONMENT

- The residue of e-liquid from discarded pods and cartridges leak nicotine and other toxic chemicals into the soil, waterways, and can be ingested by wildlife.
- E-cigarette waste is not biodegradable, even under severe conditions.
- E-cigarettes left on the street will eventually break down into microplastics and chemicals that flow into the storm drains to pollute our waterways and wildlife.
- Lithium-ion batteries in e-cigarettes have been known to explode and cause fires in garbage trucks and waste management plants if damaged or exposed to extreme heat.

KEY MESSAGE #3 - THERE IS NO SAFE WAY TO DISPOSE OF VAPE WASTE

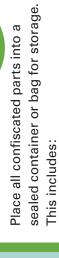
- Vape waste contains plastic waste (the device), toxic bio-hazard waste (nicotine), and electronic waste (the battery), each of which needs to be disposed of separately.
- More than half (57.8%) of past-30 day vape users found it inconvenient to dispose of e-cigarette waste responsibly.
- Many young e-cigarette users reported throwing away, improperly recycling, or littering disposable vaping devices or single-use plastic product accessories.
- While vapes such as Puff Bar, Stig, Ezzy, Switch, and Hyppe Bar are marketed as disposable, they are considered hazardous to the environment and should not be disposed of in the trash or recycled with other plastics.
- E-cigarette manufacturers do not provide guidance to consumers on how to dispose of used devices or their plastic components. Puff Bars, which are a disposable vaping device, provide minimal instruction on how to dispose of the device properly.
- There is curently no industry guideline for recycling e-cigarettes in the U.S. and no requirement in place to hold manufacturers accountable for the post-consumer waste they helped produce.





roper handling and disposal of





Step 2

- Devices and batteries E-liquids and bottles
 - Tanks, cartridges,
 - and pods





Handle e-cigarettes with bare hands



Throw any component in the trash or recycling bin



https://www.calrecycle.ca.gov/HomeHazWaste/Directory/

Cal Recycle

Transport to a hazardous waste disposal site.

To find the nearest location, visit:

Step 3





Additional Resources: Tobacco Use is an Environmental Issue

TOBACCO FREE CATALOG

The tobacco Education Clearinghouse of California, or TECC offers a collection of tobacco related educational materials available to order for use in the field.

www.tobaccofreecatalog.org

TOBACCO FREE CA

Tobacco Free CA is a website from the California Department of Public Health which offers information on tobacco, including effects on the environment. "Thrown Away" is an ad about butt litter, which may be shared with college campuses throughout the state.

www.tobaccofreeca.com

CALIFORNIA YOUTH ADVOCACY NETWORK

The California Youth Advocacy Network (CYAN) provides resources for education, including an informational video on the impact of nicotine vape waste and single-use plastic e-cigarette products on the environment, as well as social media posts that are available for download. CYAN also provides information on free resources for youth and young adults to support them in quitting.

www.cyanonline.org



