

SWACHH MOHALLA SQUAD A GUIDEBOOK FOR YOUTH





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Yogi Adityanath





MESSAGE



Dear Children of Uttar Pradesh,

Our beautiful state is home to millions of young minds like yours—bright, energetic, and full of ideas that can shape the future of our state, our country and indeed, the entire world. As we work towards making Uttar Pradesh cleaner and greener, you have a very important role to play in this journey.

The good news is you do not have to wait to grow up to make a difference. The small actions you take today—like using less plastic, sorting waste and even planting a tree—can have a big impact on our environment. Imagine if every child in Uttar Pradesh did just a little bit every day to keep their surroundings clean. Together, we can make Uttar Pradesh a model of cleanliness and teach adults as well.

Our government is committed to providing you with the tools, knowledge, and support to make a real impact. This guidebook is here to help you understand how you can reduce waste, recycle, and take care of our planet. By reading and using this guidebook, you have already taken an important first step in the journey of a cleaner tomorrow. I encourage you to act on reducing waste, sharing this knowledge with your friends and family to join in.

Remember, every little effort counts. When all of us work together, we can create a cleaner, healthier Uttar Pradesh for everyone. My best wishes to Nagar Nigam Ghaziabad for undertaking this positive step to bring a change on the ground level.

Thank you for being a part of this important mission. I believe in your power to create change, and I look forward to seeing the positive impact you will create in our state.

Yogi Adityanath

Urban Development, Overall Urban Development, Urban Employment and Poverty Alleviation, Energy, Additional Sources of Energy



Main Building Room No.- 93/94 U.P. Sachivalaya, Lucknow-01

A. K. Sharma

MESSAGE



Dear Young Champions,

When I was your age, things were quite different. There were hardly any plastics around us! We used cloth bags for shopping, purses were made of cotton rather than PVC, and our toys were often made of wood rather than plastic. Electronics were rare, and most things were built to last a long time, without needing frequent replacements.

But now, plastics are everywhere, and they've become a big part of daily life. It's hard to imagine going even one day without using something made of plastic. However, with all these conveniences comes a serious problem—plastic pollution. It's not just about keeping our streets clean; waste, especially plastic waste, harms the environment and even affects our health. When plastic isn't disposed of properly, it ends up in rivers, fields, and even the food we eat. It also effects the health of animals and water species.

This guidebook has been specially created to help you learn about plastic pollution and other waste issues and to give you the tools to make a real difference. By exploring this guide, you'll discover practical ways to reduce waste and find smart, eco-friendly alternatives that can keep our neighbourhoods healthy and beautiful.

With your help, we can reach our goal of 'Garbage-Free Cities by 2026.' I encourage you to lead the way by talking to your family and friends and showing them how we can all work together to reduce pollution. You are the leaders of tomorrow, and I hope this guidebook becomes a valuable resource that helps you be the driving force for the Swachh Bharat Mission as true 'Champions of Change.' I congratulate the Ghaziabad Nagar Nigam and hope this guidebook will be used not only in Ghaziabad but across all of Uttar Pradesh.

Yours Sincerely,

Arvind Kumar Sharma,

Minister of Urban Development, GoUP

मनोज कुमार सिंह मुख्य सचिव Manoj Kumar Singh Chief Secretary







लोक भवन, लखनऊ - 226001 Government of Uttar Pradesh Lok Bhawan, Lucknow-226001

MESSAGE



Dear Children and Youth.

You are part of one of the most fortunate generations in independent India, growing up in an era of amazing advancements. Technology, innovation, and even AI are opening up incredible opportunities. Your city has also expanded globally, and you have access to all kinds of foods, gadgets, and learning resources like never before!

But with all this progress, we also face a growing challenge: waste. The more things we use, the more waste we create. Plastic wrappers, discarded electronics, unused food, and packaging—all of these can end up polluting our neighbourhoods, rivers, and parks. If we don't handle this waste properly, it affects not only our surroundings but also our health by making the air we breathe and water we drink less safe.

Your future is bright, and you have the power to make it clean and healthy too. The first step is learning and taking action, and this guidebook will show you how. By sorting waste into the right bins, reusing items, and reducing single-use plastics, you can make a real difference. Encourage your family and friends to join you in these habits—compost food scraps, choose reusable containers, and safely dispose of hazardous items like batteries. Even planting trees helps, as they can absorb pollutants and improve the cleanliness of your surroundings. Every small action you take adds up, helping to create a cleaner, greener environment for everyone.

On behalf of the Government of Uttar Pradesh, I would like to thank the entire team at Nagar Nigam Ghaziabad and Department of Urban Development, UP for creating this guidebook, which will empower each of you as the Next-Gen Leaders. I urge all young citizens to embrace this guide and act as a catalyst of change in making Uttar Pradesh a model of cleanliness and sustainability.

With best wishes,

Yours Sincerely.

Manoj Kumar Singh

Amrit Abhijat I.A.S Principal Secretary



Urban Development, Urban Employment & Poverty Alleviation Programme Department Government of Uttar Pradesh, India 601, Bapu Bhawan, Lucknow-226001

MESSAGE



Dear Future Leaders,

Congratulations on taking the first step towards becoming a part of the Swachh Bharat Mission! It's been ten years since we started this critical journey, and now we look to young minds like yours to help us make our cities cleaner.

When I was studying for the UPSC exams as a young person, I never imagined that one day we would face such a serious waste crisis. When I was a child, life was simpler—we didn't have so many things, and what we did have was used and reused for years. People stored items carefully, and waste was minimal.

Today, we face a different reality. With the availability of countless products and a throwaway mindset, our society produces more waste than ever. We buy things quickly, often don't store them for long, and throw away items without thinking. This leads to a huge waste problem, as these items end up polluting our cities, rivers, and green spaces. This guidebook is here to help you understand why this happens and, more importantly, how you can make a difference.

As you grow up, you deserve to have a green and healthy future, and you have the power to start building it now. This guidebook introduces the 5Rs—Refuse, Reduce, Reuse, Recycle, and Repurpose—as a foundation for creating less waste and managing it wisely. By following these steps, you can make a real difference. Start by choosing items you can use again, like cloth bags or metal water bottles, instead of single-use plastics. Say no to unnecessary plastic items, such as straws or excessive packaging, to help reduce waste at the source. When you do need to dispose of something, make sure it's recycled properly so that it can be processed and used to create new products, instead of ending up in a landfill. These small actions help keep materials in circulation longer and reduce the amount of waste polluting our environment.

I encourage you to use what you learn here to make a difference in your home, school, and community. By spreading awareness and actively engaging as young leaders, we can strengthen our collective efforts to build a cleaner and greener Uttar Pradesh. Remember, our team at Urban Development Department, GoUP is here to support you every step of the way, and we look forward to the positive changes you will bring to our shared vision of a Swachh Bharat.

Wishing you great success in your efforts!

With Regards,

Yours Sincerely,

Amrit Abhijat





भारतीय जनता पार्टी, उत्तर प्रदेश

प्रदेश उपाध्यक्ष - भाजपा, उत्तर प्रदेश महापौर - गाजियाबाद नगर निगम

MESSAGE



My Dear Young Citizens,

I am so proud to share this special guidebook with each of you, as you are a vital part of our city's journey toward a cleaner, greener future. Ghaziabad isn't just run by adults our children and young people have a big role to play too! You are the heart and spirit of our city, and your actions and ideas make a real difference. Marking the 10-year anniversary of the landmark Swachh Bharat Mission, launched by the Government of India on October 2, 2014, Nagar Nigam Ghaziabad, in partnership with Chintan Environmental Research and Action Group, is delighted to introduce the Swachh Mohalla Squad Guidebook. This comprehensive resource was created especially for you, the future caretakers of our planet, to provide the necessary knowledge, skills, and inspiration to become catalysts of positive change in your communities. Aligning with the Swachh Bharat Mission's principles, in this book you will find practical tips, fun activities, and interesting facts that will help you make small but powerful changes in your daily life. We encourage you to explore the resources and insights presented here and take actionable steps within your community. Remember, change starts right where you are. You are not just influencers but tomorrow's leaders and change agents. With your energy, creativity, and passion, each of you can inspire those around you to adopt better waste management practices. As future leaders, you hold the key to transforming our society. Your actions today will impact local surroundings and contribute to a broader movement towards sustainability.

Together, let's commit to being proactive stewards of our planet, ensuring a better future for generations to come. I urge you all to utilize this guidebook as a valuable resource and strive to create a cleaner, healthier environment.

With best wishes!

Sunita Dayal



PREFACE



In a world facing increasing environmental challenges, the importance of effective waste management cannot be overstated. As communities grow and develop, our shared responsibility to protect the planet and promote sustainable living also grows. Our Nagar Nigam is dedicated not only to waste management and scientific disposal but also to raising civic awareness and encouraging everyone to participate actively. We are all 'Champions of Change', and I believe that the children and youth of our city have a vital role in shaping responsible waste practices and supporting essential civic services to keep our environment clean and sustainable for the future.

In this guidebook, you'll learn practical ways to manage waste- how to sort it, reduce it, and recycle it. These may sound like small actions, but when you practice them every day, they add up to something powerful. Imagine sharing what you learn with your parents, friends, and even your neighbours. You can show them the importance of good waste habits and inspire them to make better choices. Together, we can make our neighbourhoods cleaner and keep our parks, streets, and playgrounds beautiful.

Our city needs your support to stay clean and work towards a zero-waste future. This guidebook is here to help you, so read it, put its ideas into action, and encourage others to join you. Whether it's teaching an adult to recycle properly or reminding friends to reduce plastic use, every small effort brings us closer to a healthier, happier Ghaziabad. Remember, every time you choose to reduce, reuse, or recycle, you're helping build a brighter future for our city. I believe in the energy and determination of young people like you, and I am excited to see the positive changes you'll bring. Thank you for stepping up as true Champions of Change for Ghaziabad. Together, we can make our city a model of cleanliness and sustainability for everyone to admire.

On behalf of Nagar Nigam Ghaziabad, I extend gratitude to the whole team of Chintan Environmental Research and Action Group for co-partnering in preparing this manual. I also wish to acknowledge the concerted services rendered by team members from the health department for their valuable contribution in the preparation of this guidebook.

Shri. Vikramaditya Singh Malik, IAS

(Wamphalik



CONTEXT



Hi there, future changemakers!

Did you know that the way we manage waste can have a big impact on the air we breathe and the environment around us? Sometimes, when garbage is burned or left in landfills, it creates smoke and pollution that's harmful to everyone. Even the dust from roads and construction adds to the problem. But here's the good news: you can help fix this!

This guidebook, The Swachh Mohalla Squad, was made for you with the help of several young people just like you. The idea came during a conversation between the Ghaziabad Nagar Nigam Commissioner and Chintan. They wanted to make a 'light but laser sharp resource' to help children and youth learn about waste and air pollution—to be able to join the dots and act on the issues!

You'll find plenty of cool facts, activities, and ideas inside that will show you how to make a difference in your neighbourhood, school, or even your entire city! Whether it's sorting waste, reusing items, or planting trees, every small step you take adds up to big change.

We know your teachers and parents are there to guide you, but you're the real leaders in this mission. Children today push for change, and often become the change while doing so. This guidebook is here to give you the tools, ideas, and confidence you need to take action and make a lasting impact in your mohalla.

Ready to dive in? Start from the beginning to get the full picture, and then explore the parts you find most exciting. Let's work together to make our mohallas cleaner, greener, and more sustainable.

We can't wait to hear your stories and ideas about how you've used this guidebook to bring about change!

Happy reading, and even happier doing!

Bharati Chaturvedi

Founder & Director, Chintan



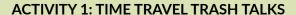


WHAT IS WASTE?

Have you ever wondered where all the things we throw away go? It ends up as **waste**. Waste can be anything we don't need anymore, like food scraps, paper, plastic, and even broken toys. This doesn't mean others can't use it. It only shows our own limitations.



Example: you might throw away a shirt that no longer fits you. However, if your neighbor could wear it, it wouldn't be considered waste. If you don't give it to her because you don't like her and throw it away, then it becomes a waste.



Find someone who is at least 30 years older than you and ask them these questions. Then, write, draw, or paint about your knowledge and understanding:

Is the idea of waste **ancient** or **modern**? Have people always had the concept of waste, or is it a more recent idea?

Is everything we throw away waste? If something you don't need can be used by someone else, is it really a waste?

Can waste be a resource? How can we turn things we might throw away into something useful? How did people do this earlier?



WHY IS WASTE A PROBLEM?

Too much waste is a big problem for our planet. It pollutes our air, water, and soil, directly and indirectly affecting our health. For example, polluted air and contaminated water can lead to respiratory diseases and unsafe drinking conditions. Waste that isn't managed properly also creates breeding grounds for mosquitoes and flies, spreading diseases and reducing the quality of life.

Beyond the pollution, waste reflects a deeper issue – the overuse of natural resources. Every item we throw away represents trees cut down for paper, metals mined from the earth, and energy used in manufacturing. For instance, producing one plastic bottle requires about 1/4th of a bottle's worth of oil, and discarding it wastes both the oil and the energy used in production. Globally, nearly 1 million plastic bottles are bought every minute, contributing to this massive waste of resources. When we throw away aluminum cans, we're also wasting the 2-3 times more energy required to mine and process bauxite compared to recycling aluminum. Recycling just one aluminum can saves enough energy to power a TV for 3 hours, highlighting the importance of reusing and recycling.

This over-extraction of natural resources harms ecosystems, disrupts wildlife, and increases the strain on limited resources. Over time, excessive waste leads to depleted forests, polluted oceans, and exhausted mines, affecting both the environment and communities worldwide.



Photo: Pawan Prasac

Managing waste takes a lot of time, hard work, money, and resources. It also puts pressure on our systems like garbage collection and recycling, which makes it a big challenge. In the end, reducing waste isn't just about keeping the environment clean—it's about making sure we use our planet's resources carefully and not waste them.

CHAPTER 1 IS RECYCLING YOUR BEST FIRST CHOICE?

The waste hierarchy is a helpful guide that shows us how to manage waste in the best way. It tells us to first try to prevent and reduce waste before thinking about recycling or throwing things away. This way, we can make a bigger positive impact on the environment.

THE 5Rs PRINCIPLE

REDUCE: The first step is to minimize waste by using fewer resources.



Example: instead of buying bottled water, carry a reusable water bottle. This reduces the need for single-use plastic bottles and cuts down on waste.

REUSE: Before throwing something away, think about how you can use it again. Reusing items helps reduce waste and minimizes the need to buy new things.

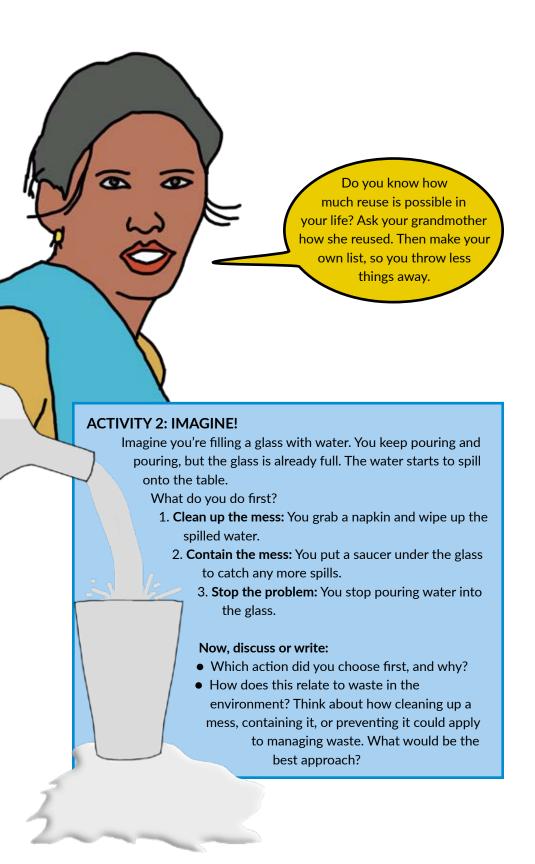


Example: takeout containers from restaurants can be easily reused to store dry rations or other household items.

RECYCLING: If something can't be reused, see if it can be recycled. Recycling turns waste into new products, saving natural resources and reducing how much we throw away.



Example: For example, when you're done with an aluminum can or a newspaper, dispose of it in a blue bin responsibly. This ensures it can be processed and turned into a new metal or paper product, saving resources.



Let's explore two important concepts of waste hierarchy: refusing and repurposing.

REFUSE (PREVENTION): This concept focuses on preventing waste before it even occurs. Just like stopping the water from overflowing prevents a mess, refusing unnecessary items helps reduce the amount of waste generated.



Example: you can refuse plastic straws, single-use bags, or excessive packaging when shopping. By making mindful choices and only accepting what you truly need, you can significantly minimize waste and lessen your impact on the environment.

REPURPOSING: This involves taking items that would typically be discarded and finding new uses for them instead.



Example: An old glass jar can be repurposed into a decorative planter. Repurposing not only extends the life of an item but also reduces the demand for new products, helping to conserve resources and reduce waste. By creatively rethinking how we use things, we can contribute to a more sustainable environment.

By adopting the expanded 5 R's concept (mentioned above), individuals and communities can adopt a more comprehensive approach to waste management and sustainable living.

WOULD YOU LIKE TO BE A WASTE WARRIOR?

Remember the overflowing glass of water? The best solution was to stop the problem before it got worse. That's what Waste Warriors do—they stop waste before it overflows into a bigger mess. But it's not just about making small changes ourselves; it's about pushing others to do the same, talking about the problem, and inspiring more people to take action.

Would you like to lead the way? Let's discuss how you can make a difference!

CHAPTER 2: WHY REDUCE?

"Reduce" means to use less of something. When it comes to waste, this means using fewer items that end up in landfills or other disposal facilities. By reducing our consumption, we can help conserve resources, protect the environment, and minimize our impact on the planet.

Reducing waste also lowers our **carbon emissions**. Carbon, particularly in the form of carbon dioxide (**CO**₂), is a significant greenhouse gas that contributes to climate change. The burning of fossil fuels, industrial processes, and even the decomposition of waste in landfills release carbon into the atmosphere. By generating less waste, we can decrease the carbon footprint associated with the production, transportation, and disposal of goods.

Choosing to reduce isn't a sign of sacrifice or humiliation; it reflects wisdom and a deep care for our planet. It shows that we value sustainability and are committed to making a positive difference for future generations.

TIPS FOR REDUCING WASTE:

- Consuming Less: This means buying only what you truly need and avoiding unnecessary purchases. For instance, instead of asking for new gifts for your birthday, you could request experiences like a day out with friends or donations to a local charity. This way, you reduce clutter and promote sharing and kindness instead of accumulating more items.
- Using items efficiently: Make the most of the items you have. This could mean using the entire product before discarding it, or finding new uses for items that are no longer needed for their original purpose. Extending the life of a pair of shoes by 9 months can prevent about 200 kg of CO2 emissions per year—equivalent to driving 1,200 kilometers!
- Choosing reusable alternatives: Opt for items that can be used multiple times, rather than single-use items. For example, reusable straws are a good alternative, but it's even better to refuse them if possible.

By reducing waste, we can help to:

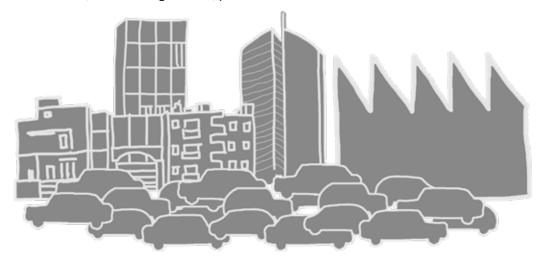
- Conserve natural resources: Each year, India generates around 6.2 crore tons of waste, and reducing this helps lower the demand for raw materials like wood, oil, and metals used to make new products.
- Protect the environment: India produces over 30 lakh tons of plastic waste annually. Reducing waste prevents this pollution from harming ecosystems and iconic wildlife like tigers, whose habitats are impacted by waste.
- Save money: Carrying a reusable water bottle can save you around Rs 2,500 annually if you avoid buying single-use plastic bottles, assuming you buy one daily.
- Protect yourself: Reducing waste means better air quality, less toxic chemicals in water and soil, leading to a cleaner environment and improved human health. Cleaner cities also mean a reduced risk of diseases.



UNDERSTANDING CARBON EMISSIONS

Carbon is an important element found in nature, essential for life on Earth. It is also a major part of carbon dioxide (CO_2), a greenhouse gas that traps heat in the atmosphere. **Carbon emissions** are the release of CO_2 and other carbon compounds into the air, mostly from burning fossil fuels, industrial activities, and improper waste management.

These emissions are a big problem because they lead to **air pollution**, **climate change** and **global warming**. When too much carbon dioxide is in the air, it makes the Earth warmer, causing strange weather, rising sea levels, and harming animals, plants and humans.

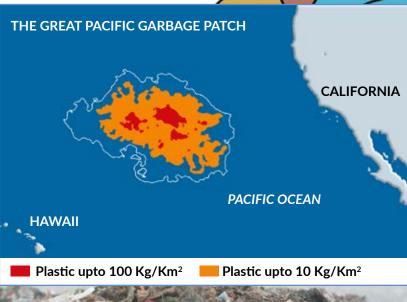


CARBON FOOTPRINT

Your **carbon footprint** is the total amount of greenhouse gases, including carbon dioxide, that you create through your daily activities. This is usually measured in equivalent tons of CO2 (meaning: Carbon is the unit for measurement of all GHG gases). Things like how you travel, the energy you use, and the waste you produce all affect your carbon footprint. By reducing waste and making smarter choices, like using less plastic and saving energy, you can lower your carbon footprint and help create a healthier planet for everyone.

Interesting fact: The Great
Pacific Garbage Patch: This
massive patch of plastic
debris in the Pacific Ocean
is estimated to be the size of
Mumbai city.





Here is one place where a wastepicker like me can make a lot of money - there are so many plastics for us to sell. But it doesn't make me happy. I'd rather we reduce plastics and give me a decent job where I can earn in a world with less plastics

This huge plastic patch shows how our waste can accumulate and harm the planet. If everyone reduced plastic use and disposed of it properly, we could prevent these massive waste zones from forming.

Think about it—how can you and your colony reduce plastic use to prevent patches like this from growing?

CHAPTER 3: WASTE SEGREGATION

Waste segregation is the process of dividing waste into different types so that they can be handled properly. This makes it easier to manage waste and reduce pollution

WHY IS WASTE SEGREGATION IMPORTANT?

Segregating waste is essential for effective waste management. It helps to:

- Improves livelihood: separating recyclables from other waste ensures that they are clean and uncontaminated, preventing them from being discarded due to contamination. Consequently, these materials can be effectively recycled, providing a valuable resource for wastepickers.
- Reduce landfill waste: Segregation helps to reduce the amount of waste that ends up in landfills, which can help to conserve space and prevent pollution.
- Create valuable resources: Recyclable materials can be processed into new products, saving resources and energy. Wet waste can be converted into compost for plants.
- Protect Wastepickers: Effective waste segregation ensures that wastepickers, who often work in challenging conditions, can safely collect and sort materials without injury or exposure to harmful substances.



HOW IMPROPER WASTE MANAGEMENT LEADS TO AIR POLLUTION

Air pollution and waste management are closely linked. Improper waste management can contribute significantly to air pollution in several ways:

1. Waste Burning:

- Open burning: Burning waste in the open air releases harmful pollutants like carbon monoxide, particulate matter, and volatile organic compounds.
- Incineration: While incineration can be a controlled method of waste disposal, it can also release air pollutants if not properly regulated.

2. Landfill Emissions:

- Methane gas: Landfills are a major source of methane, a potent greenhouse gas that contributes to air pollution and climate change.
- Fires: Improperly managed landfills can catch fire, releasing harmful smoke and pollutants into the atmosphere.

A significant portion of air pollution in Indian cities is caused by waste management, particularly the open burning of garbage. Estimates suggest that between 2% and 24% of municipal solid waste is burned openly.



TYPES OF WASTE

Understanding the different types of waste is essential for proper waste management. By knowing how to categorize waste, we can ensure it is disposed of or recycled correctly, reducing its negative impact on the environment. Let's explore the four main categories of waste: dry, wet, special care waste, sanitary waste and E-waste

DRY WASTE

Non-Biodegradable/Recyclable/Inorganic Waste: Blue bin

- Includes: Paper, cardboard (shouldn't be too soiled or wet), plastic
 products like disposable food containers, toys, furniture, metal, glass,
 tiles, ceramic crockery (unbroken), and wooden furniture.
- Why is it a problem? If not recycled properly, dry waste can end up in landfills, contributing to pollution and taking up valuable space.
- Recycling: Most of the dry waste items can be recycled and turned into new products, conserving resources and reducing waste. For instance, recycling 1000 kg of paper can save 17 trees and 26.5 thousand litres of water.

WET WASTE

Biodegradable/Compostable/Organic Waste: Green bin

- Includes: Leftover food in less quantity, vegetable and fruit peels, cores, seeds, etc, garden waste like twigs, dry leaves, etc. animal bones, egg shells, coffee grinds, tea leaves, used tissue paper
- Why is it a problem? If Wet waste lands up in landfills, it can rot and release methane which is a greenhouse gas contributing to global warming. Additionally, methane is flammable and can cause fires in landfills, polluting the air over a large area. About 50-60% of total household waste generated in urban areas is biodegradable.
- Composting: Composting turns wet waste into nutrient-rich compost, which can be used to fertilize plants and improve soil health.

SPECIAL CARE WASTE

Black bin

- Includes: Batteries, chemicals and pesticide cans/ containers/ bottles, sharps (like needles or syringes), blades, expired medicines, broken mercury thermometers, , and contaminated gauge, CFL bulbs and tube lights and other items that can be harmful to health or the environment.
- Why is it a problem? Improper disposal of special care waste can lead to pollution, health hazards, and environmental damage.
- Proper disposal: special care waste should be handled and disposed of according to local regulations. Often, there are designated collection points for this kind of special care waste.

SANITARY WASTE

Red bin

- Includes: Used diapers, sanitary towels or napkins, tampons, condoms, and any other similar waste that might be contagious or contains bodily fluids.
- Why is it a problem? Improper disposal of sanitary waste poses a health hazard to sanitation workers or waste collectors.
- Proper disposal: Sanitary waste should be wrapped in paper and handed over to the local waste collector or dropped at designated disposal sites.
- Alternative: Using a menstrual cup for one year saves the equivalent of 250–300 disposable pads or tampons.

By making informed choices about menstrual products and disposing of them responsibly, you can help protect the environment and promote menstrual hygiene.

When you dispose of your menstrual waste without wrapping it in paper, it can touch the hands of the waste collector. We don't like it, it is not dignified for you either. Both of us will benefit if you become more responsible and wrap diapers and menstrual waste in a newspaper

E-WASTE

Keep it separate

- Includes: Includes anything running on direct electricity or on battery like computers, laptops, phones, televisions, printers, and other gadgets.
- Why is e-waste a problem? E-waste contains harmful chemicals and metals, such as lead, mercury, and cadmium, which can pollute the environment and harm people coming in contact with it, if not disposed of properly. In India, over 16 lakh tons of e-waste are generated annually, making it one of the world's 3rd largest e-waste producers.
- Proper disposal: E-waste should be recycled or handed over to authorized recyclers with the facilities to safely dismantle and process it.

INERT WASTE

The waste that does not burn, compost or change its composition. On roads, it comes from tyres, from air. Sweeping in your neighbourhood and home accumulates dust. The ash flies when you burn anything. Dust enters your nose, throat and lungs as of air pollution. Luckily, planting shrubs and trees helps trap dust and prevents it from entering our bodies.

- Includes: Construction debris (malba), bricks, concrete, tiles, dust and soil.
- Why is it a problem? Inert waste does not decompose but may cause air pollution and also it can take up space in landfills.
- Proper disposal: Inert waste should be disposed of in designated sites where it won't interfere with other types of waste. It can also be disposed of in the dry waste bin if the quantity is very less.

Remember:

Proper waste
segregation is essential for effective
waste management and environmental
protection. By understanding the different
types of waste and disposing of them
correctly, we can help to reduce
pollution and create a
healthier planet.



HOW INDIA MANAGES WASTE- STUDY BOX

India has implemented various rules and regulations to address the challenges of waste management and promote a cleaner environment. The two major frameworks we'll discuss are the Solid Waste Management Rules (2016), which replaced the earlier Municipal Solid Waste (Management and Handling) Rules (2000), and the Plastic Waste Management Rules (2016). These have been updated through their respective amendments, including the Solid Waste Management (Amendment) Rules (2020) and the Plastic Waste Management (Amendment) Rules (2024).

These rules and amendments provide guidelines for waste management in India. They cover topics like waste collection, transportation, processing, and disposal. They also emphasize the importance of reducing plastic pollution and recycling. These rules help keep our cities clean and protect our environment.

Some key aspects of the rules include:

- Segregation of waste: The rules mandate the segregation of waste at source, which means separating different types of waste into different bins like green, blue and red.
- Recycling and composting: The rules encourage recycling and composting to reduce the amount of waste that ends up in landfills.
- Waste disposal: The rules allow only inert waste (non reactive, non-biodegradable and non hazardous) to reach landfills.
- Public participation: The rules emphasize the importance of public participation in waste management and encourage citizens to take responsibility for their waste.
- Wastepickers: Rules encourage their integration into formal waste management systems, such as door-to-door waste collection and segregation.
- Plastic waste: The Plastic Waste Rules aim to reduce plastic pollution by banning single-use plastic, promoting recycling, and making producers responsible for plastic packaging waste.
- Extended Producer Responsibility (EPR): The rules require producers of
 plastic packaging to take responsibility for the end-of-life management of
 their products, including collection, recycling, and disposal.



INDORE: A MODEL FOR CLEAN CITIES



Photo: Swachh Bharat Mission

Indore, a city in Madhya Pradesh, has consistently ranked among the cleanest cities in India. It has won the prestigious Swachh Survekshan Award multiple times, recognizing its efforts in waste management and overall cleanliness.

What Indore did Right:

- Waste Management: Indore created a complete waste management system that includes picking up segregated waste from homes, sorting it, and processing it properly.
- Public Participation: The city encouraged citizens to take part in waste management initiatives, helping to raise awareness and promote responsible behavior.
- Innovative Solutions: Indore used new ideas, like GPS-enabled vehicles for waste collection and turning waste into useful products.
- Enforcement of Regulations: The city strictly followed waste management rules, making sure everyone complied and took responsibility.

By combining these strategies, Indore has become a clean and sustainable city, setting a great example for other cities in India.

WASTE SEGREGATION IS SIMPLE!

To figure out which bin your waste belongs in, ask yourself these simple questions:

If it is a natural product that will biodegrade naturally over time, then it will go in the **wet waste bin** (Green)

If it runs on or requires a battery or power supply to work, then it will go in the **e-waste category**.- collect it and give it to authorized recyclers in your area Sanitary waste like napkins and diapers, which can be a health risk for waste workers goes into a **sanitary waste** bin (Red).

If it requires special handling due to being toxic or potentially harmful to human health or environment, it goes into **special care waste bin** (Black) If it doesn't fit into any of the above groups, it will go in the **dry waste bin** (Blue).

What will you do with waste from construction?

The government has notified rules for construction and demolition waste that require it to be taken to specific places and handled differently. Instead of polluting dust, this waste can give us pavers, sand and more building materials.

ACTIVITY 3: WASTE AUDIT AT HOME

- Gather Materials: Get a pen, paper, and five bins labeled "Dry Waste," "Wet Waste," "Special Care Waste," "Sanitary Waste," and "E-Waste." Ask your parents to help you set this up in a designated area at home.
- Observe Your Waste: For one week, collect all the waste generated in your home. Work with your parents to sort it into the appropriate bins daily. Record your observations and dispose of the waste after sorting it each day.
- Analyze Your Findings: At the end of the week, sit with your parents to analyze the amount of waste as per your recorded observations.
 Together, identify areas where your family can reduce waste.

Discuss how making small changes, like using reusable bags or reducing food waste, and finally segregating waste at home can help the environment.

Waste (plastic bottle, wrapper, glass, metal, paper, vegetable peels, diaper, paint cans,etc)	Waste category (Dry, Wet, Special Care, Sanitary and E-Waste)	Total quantity	Total weight (kg)	Replaceable? (Y/N)	Avoidable? (Y/N)

CHAPTER 4: PLASTICS

Plastics are everywhere, from packaging to daily-use items like bottles and bags. In India, plastic consumption has skyrocketed, reaching around 20 million metric tons annually, with per capita usage estimated at 15 kg per person per year. The rise of single-use plastics, especially, has become a significant environmental challenge. Items like plastic bags, straws, and disposable cutlery dominate this waste stream, making up 43% of India's plastic consumption.

THE PROBLEM WITH PLASTIC

Plastic is one of the most widely used materials globally, with over 300 million tons produced each year. India faces unique challenges with plastic pollution, despite the government banning single-use plastics in 2022, that are difficult to recycle and often escape formal waste collection systems or are not collected by wastepickers because of their low value. However, its environmental impact is severe.

THE TYPES OF PLASTICS:

- 1. Single-use plastics: Items used briefly, like plastic bags and straws, then thrown away. In 2022 alone, 34 lakh tons of single-use plastics were generated in India.
- **2. Durable plastics:** Used in toys, bottles, and appliances, these can last decades but are still harmful if not disposed of carefully.
- 3. Plastics in disguise: Multi-Layered packaging like tetrapaks, paper cups with plastic lining, glitter, tea bags, etc which are often non-recyclable due to their complex composition or small size.

PLASTIC POLLUTION:

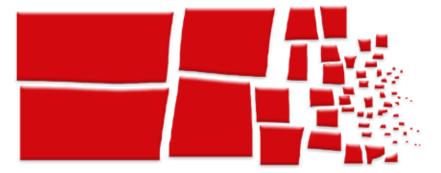
An estimated 8 million tons of plastic waste enter our oceans annually, harming marine life. Animals can mistake plastic for food, leading to 1 million marine deaths each year due to starvation or blockages. India has implemented strict rules to control plastic waste. Under the Plastic Waste Management Rules, 2016 and Plastic Waste Management (Amendment) Rules, 2024, key regulations include:

- Extended Producer Responsibility (EPR): This means that companies
 that produce plastic are responsible for managing the plastic waste
 they create. They must ensure that the plastic is collected and recycled
 properly.
- 2. Plastic Bag Thickness: Plastic bags must now be at least 120 microns thick, making them easier to recycle. Thinner bags are banned as they are more harmful to the environment.
- **3. Ban on Single-Use Plastics:** Many single-use plastic items, like straws, cups, and plastic cutlery, have been banned to reduce plastic pollution. These items are used once and then thrown away, adding to the waste problem.

These rules help reduce plastic pollution, encourage recycling, and promote better waste management across the country.

MICROPLASTICS:

Tiny pieces of plastic (smaller than 5 mm) result from the breakdown of larger items, cosmetics, and synthetic fabrics. Microplastics are now found in over 90% of bottled water and have been detected in every corner of the globe, including remote areas. Research shows microplastics are present in almost every part of the human body, including the brain, blood, lungs, and reproductive organs.



PLASTIC DOWNCYCLING

Not all plastics can be recycled, and it's important to know which types can be processed. Here are some common recyclable plastics:

- PET (Polyethylene Terephthalate): Found in water bottles and soda bottles. This plastic is widely accepted for recycling.
- HDPE (High-Density Polyethylene): Found in milk jugs and detergent bottles. It can be recycled into products like plastic lumber.
- **PP (Polypropylene):** Used in food containers, bottle caps, and straws. It is recyclable but not always accepted by local programs.

Downcycling is a more accurate term than recycling for many plastics. This process involves converting plastic waste into lower-quality products, which eventually end up in landfills or the environment. For example, plastic bottles might be downcycled into park benches or carpeting, but these products have a limited lifespan and eventually become waste themselves.

Recycling or downcycling only delays the problem. It does not eliminate plastic waste but rather postpones its final destination. To truly tackle plastic pollution, refusing, reducing, and reusing are far more effective strategies. By avoiding single-use plastics and choosing sustainable alternatives, we can significantly cut down on plastic waste and its harmful effects on the environment.



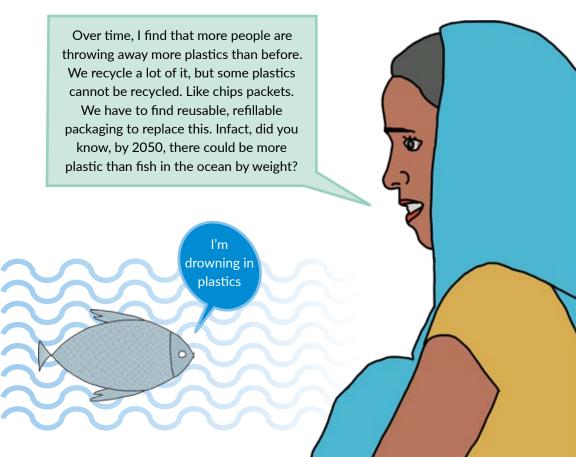
GLOBAL PLASTIC TREATY

To fight the plastic problem, countries around the world are working on a **global plastic treaty**. This treaty will create rules for countries to lower plastic production, improve how we manage waste, and promote ecofriendly options. By joining together, countries hope to stop the 1 million tons of plastic that end up in oceans each year and protect our planet for the future.

Your Role as Waste Warriors: Reducing Plastic Use

We can reduce plastic pollution by choosing **eco-friendly alternatives** and avoiding single-use plastics. Here are some simple ways to reduce plastic use:

- Reusable bags: Using cloth or jute bags can prevent the use of billions of plastic bags. In India alone, over 15,000 tons of plastic bags are used daily.
- No straw: Ditching plastic straws can significantly reduce waste.
 An estimated 500 million straws are used daily in the U.S. alone. If absolutely necessary, one can use reusable steel or bamboo straws
- Reusable water bottles: Refilling a bottle instead of buying new ones
 can prevent over 1 million plastic bottles from being thrown away
 every minute worldwide.
- Avoid single-use items: Opt for reusable or biodegradable options for utensils, plates, and cups.



ACTIVITY 4: BE A DETECTIVE, FIND THE HIDDEN PLASTIC!

Objective: Discover hidden plastic in "paper" cups.

What You Need:

- 1 paper cup
- A bowl of water
- A Towel

Steps:

- **1. Soak the cup:** Dip the paper cup in the bowl and wait for sometime
- 2. Remove the outer layer: Rub the outer layer of the cup with your fingers and try to remove the paper. Keep the outer layer moist.
- **3. Expose:** Once the paper layer starts coming off, you'll see the transparent plastic layer.

Conclusion:

You discovered plastic in a "paper" cup! Hidden plastics are in many items, like bubble gum, tea bags and non-woven bags. Being aware helps us reduce waste and protect the environment.

Bonus activity:

Find more items at home that may have hidden plastic and share it with your teacher!



CHAPTER 5: COMPOSTING

WHAT IS COMPOSTING?

Composting is a natural process that mimics how nature breaks down organic matter. It's like a mini-ecosystem! When you throw food scraps, leaves, and other organic materials into a compost bin, tiny organisms like bacteria, fungi, and worms break them down. They create a nutrient-rich soil called compost.

Compost is a **superfood for plants**. It's packed with essential nutrients that help plants grow strong and healthy. It also improves soil structure, making it easier for plants to absorb water and nutrients.

FOOD WASTE AND CARBON EMISSIONS

When food waste goes to landfills, it decomposes without air, releasing methane, a harmful greenhouse gas. Methane is about 25 times more potent than carbon dioxide in trapping heat in the atmosphere, making it a major contributor to climate change. This means that when we waste food, we're not just wasting resources like water, energy, and land, but we're also increasing our carbon emissions.

By composting, we reduce the amount of food waste that ends up in landfills, lowering methane emissions and helping to fight climate change.

Sometimes I find so much wasted food, I want to cry. **Did** you know that every year, about **130 crore tons** of food is wasted globally? That's roughly one-third of all the food produced for human consumption!

In India, around **50 kg of food per person** is wasted annually, amounting to about **680 lakh tons** across the country. Imagine all the resources—water, energy, and land—that went into producing food that's never eaten! Take less food on your plate and fill it up again, please don't waste it



ANCIENT INDIAN PRACTICE:

Composting has been an ancient practice in India, dating back thousands of years. Indian farmers have long used composting to improve soil fertility and increase crop yields. In traditional Indian agriculture, crop residues, cow dung, and kitchen waste were composted in simple pits. Ancient texts like the **Vrikshayurveda**, a Sanskrit text on agriculture from over 2,000 years ago, discuss methods of preparing organic manure to nourish plants. This shows that sustainable waste management through composting has been part of Indian farming since ancient times.

HOW TO COMPOST

Composting is easy, and you can start in your home or apartment. Here's how you can get started:

- Choose a composting method: You can opt for aerobic composting (with oxygen) using a simple compost bin, vermicomposting (using worms), or Bokashi composting (which involves fermentation).
- 2. **Collect organic materials:** Gather kitchen scraps like fruit peels, vegetable waste, and even eggshells. These are your "green" materials, which provide nitrogen. You'll also need "brown" materials like dry leaves, newspaper, and cardboard, which provide carbon.
- 3. **Mix materials:** Alternate layers of green and brown materials to maintain balance. Too much green material will make your compost too wet, and too much brown will slow down the process.
- 4. **Turn and aerate:** Turning the compost regularly adds air to the mix, which speeds up the decomposition process.
- 5. **Be patient:** Composting can take a few weeks, depending on the materials used and the conditions, but the nutrient-rich compost you'll get at the end is worth the wait!



Community Composting:

Scan the QR code to watch a video on pit composting

Watch the video to understand how to do pit composting at no or low cost and start a pit composting initiative in your community park or green belt.

BENEFITS OF COMPOSTING

By composting, even in small spaces, you can help:

- Reduce waste going to landfills -Approximately 40-60% of our household waste is compostable
- Reduce air pollution- Less waste rotting in landfills means lesser methane and carbon dioxide emissions.
- Create nutrient-rich soil
- Fight climate change by reducing methane emissions, a greenhouse gas 25 times more potent than carbon dioxide.

ACTIVITY 5: COMPOST WITH YOUR FAMILY!

Invite your parents to join you in starting a small composting project at home. Here's how:

- 1. Talk to your family about composting: Share what you've learned about composting and why it's important. Explain how food scraps can be turned into nutrient-rich compost instead of being thrown away.
- 2. Set up your compost bin together: Ask your parents to help you find a small container, like a plastic bin or bucket. Together, choose a spot for it in your home or garden.
- 3. Collect materials as a team: Make it a family effort! Encourage everyone to save fruit peels, vegetable scraps, and paper, instead of tossing them. You can even set up a separate container in the kitchen where everyone can drop their compostable waste.
- **4. Composting routine:** Work with your parents to turn the compost regularly and add new materials. You can take turns, making it a fun family activity!
- 5. Harvest your compost together: When the compost is ready, you can use it for your garden or potted plants, or even share it with neighbors.

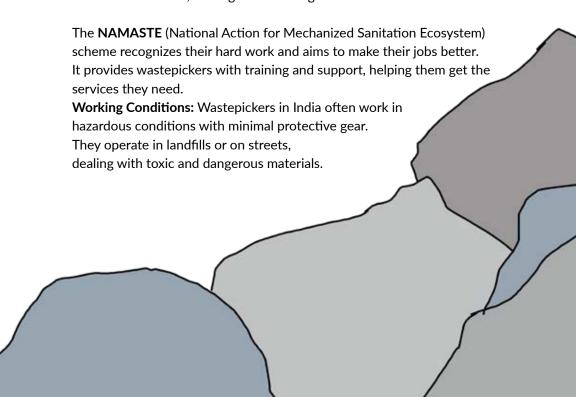
By involving your parents in this activity, not only will you create compost, but you'll also be helping your whole family adopt a greener lifestyle!

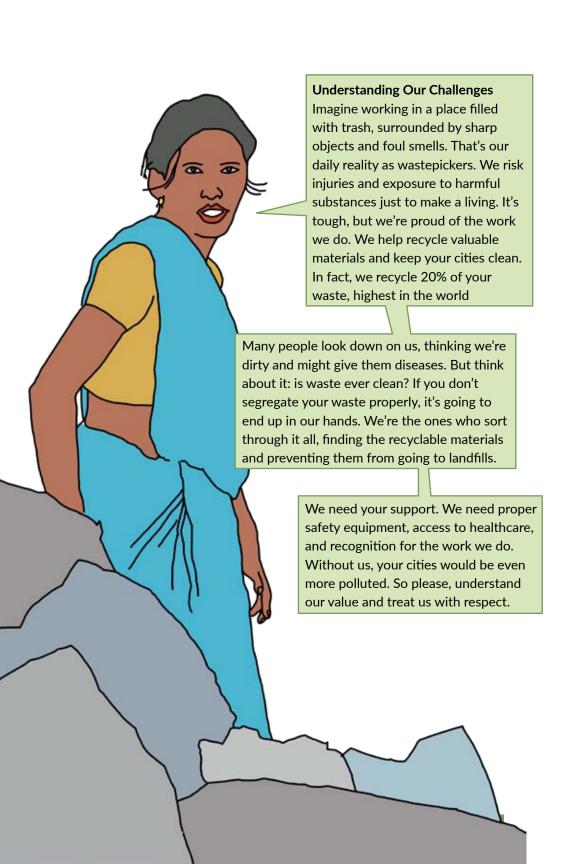
CHAPTER 6: WASTEPICKERS-OUR RECYCLING HEROES

WHO ARE WASTEPICKERS?

In India, wastepickers are very important for managing the huge amount of waste we produce every day. It is estimated that there are between 15 to 40 lakh wastepickers in the country, and they help recycle about 20% of the waste. They collect and sort recyclable materials from trash, which helps keep our cities cleaner. Their roles include:

- Collecting Recyclables: They sift through trash to find valuable materials like paper, plastic, metal, and glass.
- Reducing Waste: By recycling these materials, they help decrease the amount of waste that ends up in landfills. Estimates suggest that they may be responsible for up to 80% of plastic waste collection in India.
- **Keeping Your City Clean:** Their efforts contribute to a cleaner city and the environment, making waste management efficient.





Did you know that people were forced to lift up human waste previously? These were not wastepickers but manual scavengers.



MANUAL SCAVENGING

Manual scavenging refers to the practice of cleaning human waste from dry toilets, open drains, and sewers by hand. This work is often done without any protective gear, making it highly dangerous and degrading.

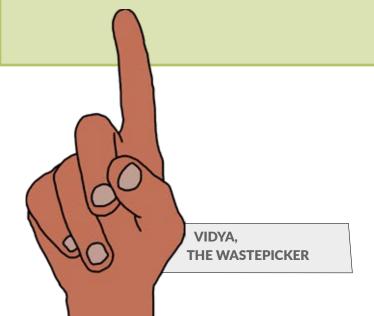
In India, manual scavenging has been banned under the **Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013**, because of the following reasons:

- Health Risks: Handling human waste exposes workers to diseases and severe infections.
- **Human Dignity:** The practice is considered inhumane and reflects social discrimination.

There are simple ways you can support people like me:

- Segregate Your Waste: Please sort your waste into recyclables, compostables, and hazardous waste. It makes my job safer, and I can avoid getting injured by dangerous items like broken glass or syringes.
- Spread the Word: You might not realize it, but our work keeps the streets clean and helps the environment. You can help by telling others about our contributions and advocating for better working conditions.
- Water and Shade: On hot days, we walk a lot, often without access to water. It means a lot when someone offers us water or lets us rest in the shade for a while.
- Donate Warm Clothes: During winter, the cold becomes unbearable for many of us. Donating blankets or warm clothes helps keep us warm while we work.
- Safety Gear: If you can, organize to provide us with gloves, masks, and boots. It helps protect us from the many dangers we face handling waste every day.
- **Support Local Programs:** There are government and NGO initiatives that aim to help us with health services, education, and safety. You can volunteer, donate, or raise awareness about these programs.

Your small actions can have a big impact on our lives.



THE CONSEQUENCE OF CARELESSNESS: A REAL STORY

In a lively colony in Ghaziabad, Amit was the dedicated waste collector who earned around ₹12,000 a month, barely supporting his family of four. One day, while sorting through mixed waste, Amit's hand was cut by an infected syringe, forcing him to take time off as the injury became infected.

As Amit couldn't collect the waste, garbage piled up in the colony, turning the once-clean streets into stinky mounds of trash. This growing heap attracted pests and spread unbearable odors throughout the neighborhood.

With Amit unable to work, his family's expenses plummeted. They had to cut back significantly, canceling tuition for his kids and often relying on just one meal a day, sharing a simple dish to stretch their limited resources.

The unsanitary conditions soon led to health problems for several families, making everyone realize how vital Amit's work was for keeping their community clean and healthy. It highlighted the importance of careful waste disposal and the need to treat wastepickers, waste collectors, and other sanitation workers with the respect and support they deserve.

CONCLUSION BE A WASTE WARRIOR!

Throughout this guidebook, we've learned about the importance of waste management and the impact it has on our environment. We've explored topics like waste reduction, waste segregation, composting, air pollution, and the valuable work of wastepickers.

Most importantly, we've discovered that individuals like you can make a big difference! By taking small, responsible actions in your daily life, you can help create a cleaner, healthier planet for everyone. Together, we can be the change we want to see!

KEY TAKEAWAYS:

- Refuse,Reduce, Reuse, Repurpose & Recycle:The initial idea is to know and incorporate the 3R principle in our lives and take it to 5Rs for sustainable waste management.
- Proper waste segregation: Sorting waste correctly helps to improve recycling rates and reduce landfill waste.
- Composting: Composting organic waste can create nutrient-rich soil and reduce greenhouse gas emissions.
- **Air pollution:** Air pollution is a serious problem that can be exacerbated by improper waste management.
- Wastepickers: These unsung heroes play a vital role in waste management and deserve our support.

Be a Waste Warrior!

Now it's time to take action! Let's pledge to be Waste Warriors and make a positive impact on our environment. We can reduce waste by making conscious choices, reuse items whenever possible, and recycle materials that can be repurposed.

By working together, we can create a cleaner, healthier, and more sustainable future for ourselves and generations to come. Let's be the change we want to see in the world!

ADDITIONAL RESOURCES

- AQI la Girl A comic book on air pollution
- Dabang girl A comic book on single use plastic
- Climate justice league A comic book on climate change

Scan the QR code to access the above resources:



GLOSSARY

Biodegradable: Waste that can be broken down by living organisms, such as food scraps and garden waste.

Carbon Footprint: The total amount of greenhouse gases, including carbon dioxide, that you create through your daily activities.

Climate Change: Long-term changes in Earth's climate, primarily caused by the increase in greenhouse gas emissions.

Compost: A nutrient-rich soil amendment made from decomposed organic materials.

- **Dry Waste:** Non-biodegradable, recyclable, or inorganic waste. Examples include paper, cardboard, plastic products, metal, glass, and wood.
- **E-waste:** Electronic waste, such as computers, laptops, phones, televisions, printers, and other electronic devices.
- **Extended Producer Responsibility (EPR):** A policy that requires manufacturers and importers of products to take responsibility for the end-of-life management of their products, including collection, recycling, and disposal.
- **Greenhouse Gas:** A gas that traps heat in the atmosphere, contributing to climate change.
- **Inert Waste:** Waste that does not decompose but may cause air pollution and take up space in landfills. Examples include construction dust, debris, bricks, concrete, and tiles.
- Landfill: A large designated area for the disposal of waste.
- **Microplastics:** Tiny pieces of plastic (smaller than 5 mm) that can harm all the living organisms and pollute the environment.
- **Organic Waste:** Biodegradable or compostable organic waste, such as **food scraps, garden waste, and paper.**
- **Recycling:** The process of turning waste materials into new products.
- Reduce: Using fewer resources and generating less waste.
- Reuse: Using an item again for its original purpose or for a new purpose.
- **Single-use Plastic:** Plastic items that are designed to be used only once and then thrown away, such as plastic bags, straws, and cutlery.
- **Special Care Waste:** Waste that can be harmful to human health or the environment, such as batteries, chemical containers, sharps, CFLs, etc.
- **Sustainable Development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- **Waste Hierarchy:** A system that prioritizes waste management practices, aiming to reduce waste generation and prioritize recycling over landfilling.
- **Waste Segregation:** Separating waste into different categories for proper disposal or recycling.
- **Wastepicker:** Informal waste collector who collects recyclable materials from trash.
- **Wet Waste:** Biodegradable or compostable organic waste, such as food scraps, vegetable and fruit peels, and garden waste.

THINGS TO DO

THINGS TO DO

THINGS TO DO



About Chintan

Chintan works to make our planet cleaner and life healthier by managing waste better and reducing pollution.

We believe in responsible use of resources and focus on minimizing waste, tackling air pollution, and addressing climate change. Our work supports vulnerable communities such as wastepickers, the poor, women, and children, helping them lead better lives. With over 20 years of experience, Chintan combines traditional Indian practices with modern science to create awareness and encourage positive actions for a sustainable future.

If you want to volunteer at Chintan, contact:

Chintan Environmental Research and Action Group

238 Sidhartha Enclave, New Delhi-110014

Tel: +91 11 46574172

Email: info@chintan-india.org Website: www.chintan-india.org

About the guidebook

Empower yourself to protect the planet! This guidebook is a comprehensive yet fun resource for young readers to explore waste and its impact on your life—whether it's through air pollution, health, or climate change. By learning about these issues, you'll uncover solutions that can address many other challenges, helping you take your first step toward becoming a true environmental hero.









