

WHY ALL THE PLASTIC? (LEVEL 1)

Description	The learner will have the opportunity to conduct science experiments to better understand the characteristics of plastic and its impact on the environment and present their learnings as a poster to convince their family to reduce – reuse – recycle
Leading Question	Can you develop an alternative to plastic?
Total Time Required	4.5 hours total over 5 days.
Supplies Required	A tool to dig with, any two sticks to write on, pens, any fruit core or green leaf, a piece of plastic. Pens, paper, discarded cloth, jute, paper, plastics, etc.
Learning Outcomes	<ol style="list-style-type: none"> 1. Understanding what is biodegradable and composting 2. Historical understanding of the evolution of materials 3. Critical thinking and design.
Previous Learning	None

DAY 1

Today you will learn about plastic and recycling.

Suggested Duration	Activity and Description
5 minutes	<ul style="list-style-type: none"> • You will have the opportunity to understand more about plastic
5 minutes	<ul style="list-style-type: none"> • Discuss with someone the day of the week, the date of the month, and the month of the year we are in.
20 minutes	<ul style="list-style-type: none"> • Design your own weekly calendar on a large piece of paper with space to write the daily plan i.e. make 7 boxes and write the dates of the month. • Write the first letter of the month and first letter of the days of the week (if learners are unable to parents can support with the writing)
20 minutes	<ul style="list-style-type: none"> • For each of the days of the week, mark or draw the project activity that you intend to do on the calendar i.e. Day 1: Make a calendar, Day 2: Dig and Bury (Learners can draw the digging tool) Day 3: Uses of plastic (Draw

something that is plastic) Day 4: Alternatives to plastic (and Day 5: What happens to plastic?)

DAY 2

Today you will learn what biodegradable is and how to recycle.

Suggested Duration	Activity and Description
30 minutes	<ul style="list-style-type: none"> ● Learn the word biodegradable – something that breaks down naturally and turns into soil. ● We will do an experiment to explore what happens to plastic and natural food items. ● Dig two small holes in the soil of the garden/lawn (or plant pots if a backyard is not available.) ● Put any plastic trash in one and fruit core or green leaf in the other. ● Cover both the holes with soil and insert a stick marking the plastic hole with P and the fruit core/green leaf with F or L ● Think about what you think you will find after a week.
20 minutes	<ul style="list-style-type: none"> ● Illustrate and label the process of garbage disposal in your home. You can track how the plastic items are trashed. For example: <ul style="list-style-type: none"> - Step 1: Buy relevant plastic item - Step 2: Item is thrown into the dustbin / trash bags in their home - Step 3: Item is then segregated and thrown into a trash chute - Step 4: Item is then collected by the garbage truck - Step 5: Item is then thrown into the sea / landfill

DAY 3

Today you will learn what plastic is used for around the house.

Suggested Duration	Activity and Description
15 minutes	<ul style="list-style-type: none"> ● Identify 5 most common uses of plastic at home and make a list (or illustrate a list) <ul style="list-style-type: none"> - Prompt: grocery bags, plastic containers, toiletry bottles or sachets, bags of chips, plastic toys

30 minutes	<ul style="list-style-type: none"> ● Interview your grandparents and other members of your home and understand whether they used as much plastic for as many different things. ● Prompt questions: Did you have as much plastic at home when you were growing up? What did you use instead of plastic?
15 minutes	<ul style="list-style-type: none"> ● Draw comparison images of things from the past without plastic and in the present with plastic.

DAY 4

Today you will learn about different materials you can use other than plastic.

Suggested Duration	Activity and Description
5 minutes	<ul style="list-style-type: none"> ● Discuss with the family what material options can be used instead of plastic. E.g. cloth, paper, glass, jute, etc.
15 minutes	<ul style="list-style-type: none"> ● Try and identify the key characteristics that made plastic so special by testing it out to understanding why it is used so commonly ● Potential other materials include: cloth, paper, glass metal etc.
20 minutes	<ul style="list-style-type: none"> ● Prompt questions: <ul style="list-style-type: none"> - Do other materials get wet? Do the items inside get wet? (e.g. cloth and paper) - Are other materials as durable - are they torn or destroyed as easily? (e.g. paper and glass) - Are other materials heavy and easy to carry or travel with? (e.g. metal and glass) - Can all materials be made into any shape? (e.g. paper and glass) ● Pick 3 of the commonly used plastic items as identified the previous day
20 minutes	<ul style="list-style-type: none"> ● Experiment with trying to replace plastic with the chosen other material options (e.g. what else can you store shampoo in? How else can you package chips? Etc.) ● Reflect on whether these new solutions would work or not given the previous experiment and whether this will meet all the special characteristics of plastic

DAY 5

Today you will practice drawing and presenting about recycling.

Suggested Duration	Activity and Description
20 minutes	<ul style="list-style-type: none"> ● Dig around the holes and check the progress of the plastic and food. Based on the observation, share what you think will happen and why. (It is advised to wait for 2 weeks to see real impact)
30 minutes	<ul style="list-style-type: none"> ● Compile all of their work from the week to do a presentation including the images, lists, drawings and calendar and share your main learnings with the family
10 minutes	<ul style="list-style-type: none"> ● Design a chart of the top three plastic items that you would like to: <ul style="list-style-type: none"> - Reduce the use of, - Replace with something different, - Reuse by drawing different things in each of the columns

ASSESSMENT CRITERIA

- Analytical thinking and observations made.
- Ability to prepare and ask meaningful questions and follow up questions.
- Critical thinking and problem solving to design alternatives to plastic.
- Clarity of messages when drawing, writing or speaking.

ADDITIONAL ENRICHMENT ACTIVITIES

- The activity can be extended with more time to observe the biodegradation that typically takes 4 months.