WatA

Waste to Art

KA220-HED Project

TEACHER'S HANDBOOK

Co-funded by the European Union

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

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KA220-HED Project
2023-1-TR01-KA220-HED-000157753

This project has been funded with support from the European Commission under the Erasmus+ Programme. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

About the WatA Project

This handbook has been prepared within the Waste To Art (WatA) Project realised within the scope of Erasmus+ KA220-HED/Cooperation Partnerships in Higher Education. The handbook aims to encourage teachers to use waste materials in their classroom art activities and provide them with the necessary essential information on this subject.

What does the WatA Project aim for?

Art education trains the creative power and potential of the individual and organizes aesthetic thought and consciousness. Art enables the individual to adjust his social relations, cooperate and help each other, choose and express the truth, enjoy the joy of starting and finishing a job, and be productive. But besides all its positive aspects, artistic activities cause the highest waste production in schools due to the intensive use of materials such as paper, cardboard, paint, etc. In addition, extremely large consumption of natural resources occurs for the production of materials such as paper, cardboard, paint, and adhesive used in these activities, and a significant amount of industrial waste is generated during the production of these materials. WatA project aims to reduce the use of traditional materials by encouraging the use of waste materials in art activities in schools, thus protecting natural resources and reducing the amount of waste released into nature by transforming waste material into aesthetic value.

The use of traditional materials in art activities has various restrictive qualities for both teachersand students, most of the time, students and teachers have to do the same things over and over again, which causes the students to lose their interest in art lessons. The use of waste materials requires a different field of creativity since waste materials are not as continuous as traditional materials and because of the necessity of using new and different materials in every work. Thanks to the use of different waste materials, teachers will be able to abandon routinized traditional teaching methods and develop innovative teaching methods for students with the endless possibilities brought by this new approach. Students, on the other hand, will be able to develop their creativity and aesthetic awareness by looking for creative and innovative ways of using the waste they see around them, instead of seeing them as just a waste.

Art education plays a very important role in the development of individuals, as stated at the beginning, therefore every individual should have equal access to arts education. However, it is observed that disadvantaged students, who cannot reach the necessary materials for art activities due to financial inadequacy or geographical factors, are deprived of this right in the lessons where activities based on visual arts are held. Unlike traditional activity materials, waste materials are easily accessible for disadvantaged students as they bring almost no financial burden and can be found in almost every geographical condition.Through the impact of the project, will become widespread use of waste materials in in-class art activities, so the project will make an important contribution to reducing the problem of accessing the activity materials that hinder the participation of disadvantaged students.

WatA

Waste to Art

PROJECT PARTNERS

ANKARA UNIVERSITY (TR) (Project Coordinator)

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UNIVERSITY OF LATVIA (LV)

UBED-International Association of Great Educators and Special Educators (TR)

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Environmental Awareness and Conservation of Natural Resources

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The Concept of Natural Resources

Environment

Animate and inanimate surroundings in which beings live. It includes human beings, animals, plants, objects, water, soil, air and interrelations between them plus aesthetic, natural science and cultural history values.
Environment can be defined as a sum total of all the living and non-living elements and their effects that influence human life. While all living or biotic elements are animals, plants, forests, fisheries, and birds, non-living or abiotic elements include water, land, sunlight, rocks, and air.

What are Natural Resources?

Natural resources are resources that are drawn from nature and used with few modifications. This includes the sources of valued characteristics such as commercial and industrial use, aesthetic value, scientific interest, and cultural value.

On Earth, it includes sunlight, atmosphere, water, land, all minerals along with all vegetation, and wildlife. The materials we use from nature such as wind energy, water, plants, animals, and fossil fuels to make the things we need are called natural resources. They are the basis of life on Earth.

Natural Resources fall under 2 main Categories:

- Renewable Resources
- Non-renewable Resources

Renewable Resources

These resources can be replenished naturally. Some of these resources, like solar energy, air, wind, water, etc. are continuously available and their quantities are not noticeably affected by human consumption.

Though many renewable resources do not have such a rapid recovery rate, these resources are susceptible to depletion by over-use. Resources from a human use perspective are classified as renewable so long as the rate of replenishment/recovery exceeds that of the rate of consumption. They replenish easily compared to non-renewable resources.

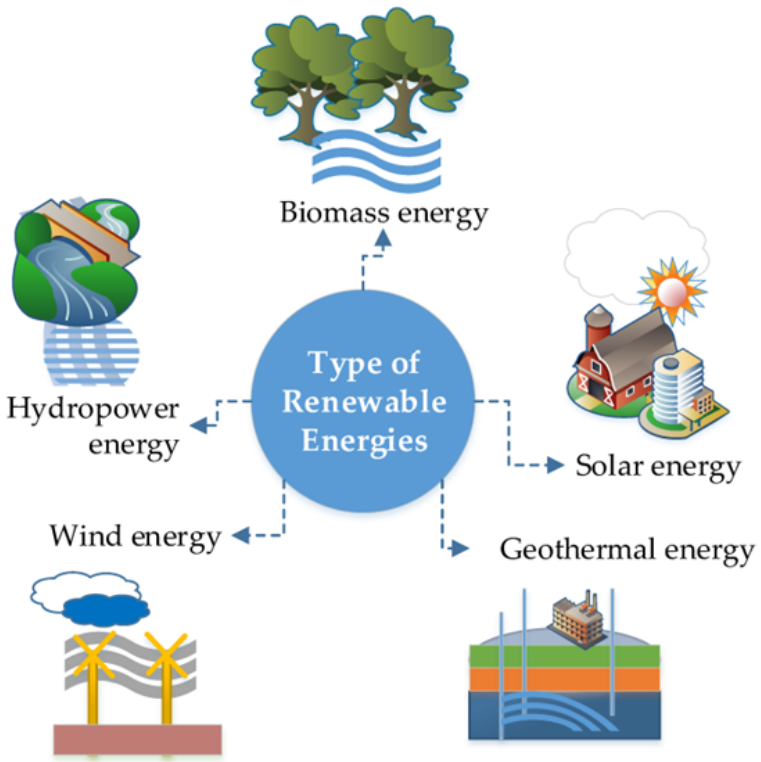
Solar energy:
Power from the sun, used through solar panels to generate electricity or heat.

Wind power:
Energy generated by wind turning turbines to produce electricity.

Geothermal energy:
Heat from inside the Earth used for heating and electricity.

Hydroelectric energy water:
Electricity produced by moving water, usually from dams.

Biomass energy:
Energy from organic materials like wood, crops, and waste.



Examples :

Solar energy, wind power, geothermal energy, hydroelectric energy water , and biomass material made from plants and animals .

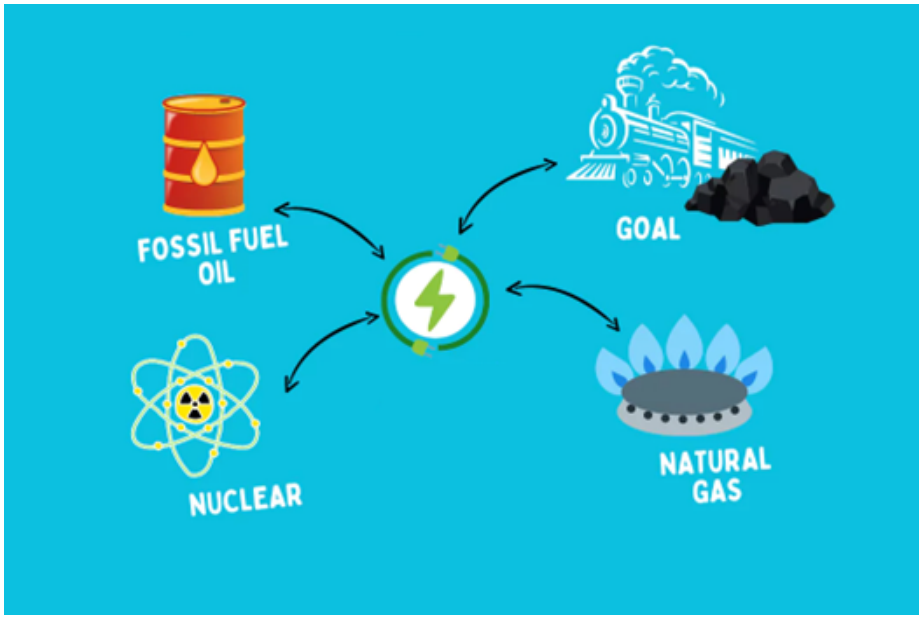
Non-renewable Resources

Nonrenewable resources are those natural resources that are depleted more quickly than they can regenerate. Fossil fuels like oil and natural gas were formed over millions of years. Once mined and used completely, nonrenewable resources are gone forever.

Non-renewable resources are natural resources that cannot be replenished on a human timescale. Once these resources are used up, they are gone for good, or it takes millions of years to form new deposits. The primary non-renewable resources are fossil fuels coal, oil, and natural gas, minerals, and metals.

Fossil Fuels Coal, Oil, Natural Gas: These are formed from the remains of ancient plants and animals, buried and subjected to heat and pressure over millions of years.

Minerals and Metals: These include resources like copper, gold, iron, aluminum, and rare earth elements, which are extracted from the Earth for use in manufacturing, construction, electronics, and other industries.



Examples:

Fossil fuels coal, oil, and natural gas , minerals, and metals.

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Environmental Awareness and Conservation of Natural Resources

Biodiversity

Biodiversity is one of the basic principles of sustainable development. Biodiversity covers all species of plant, animal and micro-organism plus the genetic variability that they embody and the ecosystems of which they form part. Today the threats to biodiversity are truly disheartening.

The majority of the biodiversity on the planet is in tropical forests in developing countries, which are experiencing rapid population growth.

It includes:

- Genetic diversity differences within species
- Species diversity variety of species
- Ecosystem diversity different environments like forests, oceans, deserts

Biodiversity is important because it keeps ecosystems balanced, supports food and medicine production, and helps life adapt to changes.

Population growth and the development necessary in order to sustain it threaten to wipe out 70 of all living species by the end of the century.

Reasons For The Depletion Of Natural Resources

The depletion of natural resources doesn't just affect the Earth s ecosystems but also has profound social, economic, and health implications. It underscores the importance of sustainability, resource management, and finding alternatives to preserve the planet for future generations.

The primary drivers of resource depletion are multifaceted and interconnected, encompassing demographic pressures, industrial and technological advancements, and unsustainable consumption patterns. Rapid population growth increases the demand for resources, while industrialization and urbanization exacerbate resource extraction and environmental degradation. Furthermore, the pursuit of economic growth often overlooks the ecological limits of resource availability, leading to overexploitation and irreversible environmental impacts.

Compounding these challenges are anthropogenic factors such as pollution, deforestation, and climate change, which not only degrade natural resources but also disrupt the delicate balance of ecosystems.

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Environmental Awareness and Conservation of Natural Resources

Pollution: Pollution from industrial activities, agriculture, and urban areas can contaminate resources like water and soil, making them unusable and thus contributing to their depletion. Pollution and depletion of natural resources are interlinked issues that pose significant challenges to the sustainability of the planet. Pollution types can be classified as air, water, soil and plastic pollution.

The reasons for these pollutions can be shown as dense population, human consumption habits, industrial production wastes, proliferation of agricultural lands, and the necessity of large lands and water for agricultural lands. Such pollution leads to the overuse of various natural resources.

Over-exploitation

Over-exploitation refers to the excessive use of natural resources at a rate faster than they can be replenished. This often leads to resource depletion, where the availability of these resources declines significantly or is exhausted entirely.

Overexploitation:

Forests, fossil fuels, water, marine resources and soil are most affected.

Overexploitation of natural resources can also be associated with industrialization, urbanization and overpopulation.

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Environmental Awareness and Conservation of Natural Resources

Climate Change

Climate change and the depletion of natural resources are closely interconnected issues, each exacerbating the other in a cyclical pattern.

Changes in climate patterns can affect the availability of water, soil fertility, and biodiversity, leading to the depletion of these resources. Addressing these challenges requires understanding their interplay and the broad range of impacts they have on the environment, economy, and society.

Deforestation:

In particular, deforestation to clear agricultural land leads to an increase in carbon emissions, which in turn leads to a warming of the world. In addition, the consumption of fossil fuels is another reason for the increase in carbon emissions.

Excessive agriculture causes soil erosion and disruption of the natural water cycle, while industrial wastes cause soil and water pollution. These situations also lead to a reduction in natural resources, as rivers dry up and forests decline.

Each of these factors contributes to the complex problem of natural resource depletion, often with interconnected and compounding effects.

As can be seen, the causes of natural resource depletion are connected processes. Industrialization requires labour. Labor means population growth. Population growth brings urbanization. Industrial plants and industrial production produce waste.

In addition,

the increasing population being potential consumers, expanding agricultural areas to meet their needs, expanding farming, harmful gases emitted by the vehicles used by urban dwellers for private or commercial purposes, increasing the amount of garbage, increasing population and urbanization increase the heat and change the climate. All these are effective in depleting natural resources.

The Need to Prevent the Depletion of Natural Resources:

It is crucial to understand why preventing the depletion of natural resources is essential for sustainable development and the preservation of our planet. Natural resources form the foundation of our planet's ecosystems and are integral to the survival and prosperity of human societies. These resources, including water, forests, minerals, and fossil fuels, support life, drive economic growth, and provide essential ecosystem services.

Waste Diversion

Waste can be categorized in several types, each with different origins. Here are the main types of waste and explanations of where they come from:

Types of Waste:

Municipal Solid Waste MSW

Origin: Households, commercial establishments, and institutions like schools and hospitals .

Examples: Paper, plastic, glass, metal, food waste, textiles, and other everyday items discarded by individuals and businesses.

Explanation: This waste is generated through daily human activities, such as food consumption, packaging, and household maintenance. It s the most commonly recognized type of waste and includes the trash we throw out in our homes and offices.

Industrial Waste

Origin: Factories, manufacturing plants, and industrial processes.

Examples: Chemicals, metals, solvents, plastics, scrap materials, construction debris, and hazardous substances.

Explanation: This type of waste is produced by industrial operations. The production of goods and materials, as well as construction and mining activities, result in large amounts of waste. Some of this can be toxic, such as heavy metals or chemicals, requiring special disposal methods.

Electronic Waste E-Waste

Origin: Households, businesses, and electronic device manufacturers.

Examples: Old computers, smartphones, televisions, batteries, and other electronic devices.

Explanation: E-waste comes from discarded or obsolete electronic devices. With rapid technological advancements, people frequently replace devices like phones and computers, creating large volumes of e-waste. Many of these items contain valuable metals but can also contain hazardous substances like lead or mercury.

Hazardous Waste

Origin: Industrial facilities, chemical plants, and healthcare sectors.

Examples: Batteries, pesticides, medical waste, asbestos, solvents, and heavy metals.

Explanation: Hazardous waste comes from activities that involve dangerous chemicals, substances, or materials. This waste is toxic, flammable, or corrosive and poses serious risks to human health and the environment if not handled properly.

Possible Types Of Waste Generated in a School

The main types of waste generated in a school environment typically include a variety of materials, reflecting the diverse activities that occur in educational settings.

- *Plastic Waste*
- *Organic Waste*
- *Electronic Waste*
- *Glass Waste*
- *Stationery and Miscellaneous Waste*
- *Construction and Maintenance Waste*

The Activities That Cause The Most Waste in a School

The activities that generate the most waste in a school setting are often related to daily operations, events, and the use of materials for educational purposes.

Here are some of the key activities that contribute significantly to waste production in schools:

Classroom Activities:

Paper Usage: Daily worksheets, assignments, tests, and project submissions result in substantial paper waste. Printed handouts and notes are frequently used in traditional teaching methods.

Art and Craft Projects: Art classes often use a variety of materials such as paper, cardboard, paint, glue, and other supplies that can generate a lot of waste. Stationery Usage: Items like pens, pencils, markers, and notebooks, when discarded after use, contribute to waste.

Cafeteria and Lunch Breaks:

Food Waste: Uneaten food, expired items, and food scraps contribute significantly to organic waste.

Disposable Packaging: The use of single-use items like plastic cutlery, straws, paper napkins, and food wrappers creates a large amount of waste.

Beverage Containers: Disposable plastic bottles, juice boxes, and milk cartons add to the volume of recyclable waste, which is often improperly disposed of.

School Events and Activities:

School Fairs and Festivals: Events involving food stalls, decorations, and promotional materials often result in a large amount of single-use plastic and paper waste.

Sports Events: Disposable water bottles, food packaging, and other single-use items are commonly discarded at sports events.

Cultural Events and Assemblies: Decorations, banners, and disposable items used during these events contribute to waste.

Administrative Operations:

Printing and Photocopying: Excessive use of paper for notices, newsletters, circulars, and administrative documents generates a significant amount of paper waste.

Office Supplies: Discarded or outdated office supplies, including folders, paper clips, and outdated electronic devices, add to the waste.

Science and Laboratory Activities:

Chemical Waste: Experiments in science labs can produce chemical waste that needs to be carefully managed and disposed of.

Glassware and Equipment: Broken or outdated lab equipment, including glassware, contributes to waste if not properly managed.

Maintenance and Facility Operations:

Cleaning Supplies: Disposal of cleaning materials, such as paper towels, disposable gloves, and packaging from cleaning products, contributes to waste.

Renovation and Repairs: Activities related to building maintenance, such as painting, repairing furniture, and fixing facilities, generate construction and debris waste.

Technology and E-Waste:

Outdated Electronics: Computers, printers, projectors, and other electronic devices that are no longer functional or needed contribute to e-waste.

Ink and Toner Cartridges: Used cartridges from printers and copiers can be a significant source of waste if not properly recycled.

Extracurricular Activities:

Club Activities: arious clubs, such as art clubs, robotics clubs, and other hobby groups, can produce waste from materials used in their projects.

Workshops and Camps: Workshops and camps that use materials like paper, craft supplies, and disposable items also generate waste.

Natural Resources Conservation Practices; Reduce, Reuse, and Recycle

Reduce, Reuse, Recycle:

The Reduce, Reuse, Recycle concept is a fundamental principle of waste management and environmental sustainability, promoting more responsible consumption and conservation of resources.

REDUCE

Definition: Minimizing the amount of waste we generate by using fewer resources in the first place.

Example: Choosing products with minimal packaging, avoiding single-use items, and buying only what is necessary. By reducing consumption, we lower the demand for resource extraction and decrease the volume of waste produced.

REUSE

Definition: Extending the life of products by finding new ways to use them instead of discarding them.

Example: Using a reusable water bottle, repurposing old containers for storage, or donating clothes and items to others. Reusing items reduces the need for new products, conserving resources and reducing waste.

RECYCLE

Definition: Processing used materials to create new products, reducing the need for raw materials and decreasing the amount of waste sent to landfills.

Example: Recycling paper, glass, plastic, and metals into new products. Recycling helps conserve natural resources, save energy, and reduce pollution by reintroducing materials back into the production cycle.

Reducing waste is the most effective way to combat waste.

Together, these three actions help minimize waste, conserve resources, and protect the environment.

Concept of Upcycling

What is Upcycling?

Upcycling is the process of transforming waste materials, unwanted products, or discarded items into new, higher-value products with improved functionality or aesthetic appeal. Unlike recycling, which typically involves breaking down materials to create new raw inputs, upcycling focuses on creatively reusing and repurposing objects in their existing form to extend their lifecycle and reduce environmental impact.

Environmental, Social and Economic Benefits of Upcycling

One of the primary benefits of upcycling is its positive impact on the environment. By reimagining and repurposing old items, upcycling helps reduce the amount of waste sent to landfills and decreases the demand for new raw materials. This process conserves natural resources, lowers greenhouse gas emissions associated with manufacturing, and reduces pollution from waste disposal.

Upcycling also has significant economic and social benefits. It encourages innovation and creativity, providing opportunities for small businesses, artisans, and hobbyists to turn discarded materials into unique, marketable products. Upcycling can also promote sustainable consumer behavior by encouraging people to see potential in items they might otherwise discard.

Waste Types That Can Be Used In Upcycling

Upcycling can take many forms, from turning old glass bottles into lamps or planters to repurposing wooden pallets into furniture. Fashion is another popular area for upcycling, where old clothing is redesigned into new styles, reducing the need for fast fashion and its environmental footprint.

The proper waste for upcycling includes any materials or items that can be creatively transformed into something new and valuable without undergoing extensive industrial processing. These materials are typically considered unwanted, discarded, or at the end of their useful life but still retain enough integrity and potential for reuse.

UPCYCLING

Transform trash into treasure

Theme One
Environmental Awareness and Conservation of Natural Resources

Clothing and Textiles:

Old jeans, T-shirts, and fabric scraps can be upcycled into bags, rugs, quilts, or even new garments.

Discarded textiles can be turned into decorative items like cushion covers, tablecloths, or wall hangings.

Do you have a drawer full of free t-shirts? ou can turn them into a scarf to show school spirit and keep you warm.

Household Items

Broken crockery or ceramics can be used in mosaic projects or as planters.

Old books can be transformed into hidden storage boxes, decorative folded art, or even furniture pieces.

Electronics and E-Waste

Outdated electronic parts, such as circuit boards or keyboards, can be upcycled into artistic pieces, jewelry, or decorative items.

Old CDs or D Ds can be repurposed into coasters, mosaics, or reflective art.

Paper and Cardboard

Old newspapers, magazines, and cardboard can be transformed into papier-mâché items, decorative bowls, or gift boxes.

Cardboard can also be used in DI projects like making playhouses for children or organizational storage.

1 Theme One: Environmental Awareness and Conservation of Natural Resources

Lesson 1 : *Concept of Natural Resources*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: Hand outs, Flip chart, Markers/pens, Reference material

Time: One lesson of 40 minutes.

Procedure:

1. Discussion the various concepts of environment and natural resources among the participants for 15 minutes.

2. Divide the participants in groups of 4-5 members. Distribute reading materials on concept-related topics such as soil and its products, water and water resources, energy resources, ores and metals, societies and resources global warming.

3. Give each group a topic related to the topic and give them 20 minutes to discuss it among themselves.

4. After 30 minutes, invite group representatives to give a 5 minutes presentation on their assigned topic with question-answer session at the end.

5. Review and reinforce each topic through discussion within the local context.

6. Distribute the reference material of given topic for further reading.

Result: Students will understand about various types of natural resources and associated issues.

Questions and sample short answers:

1. What is environment?
   The environment is everything around us, including living and non-living things.

2. What do you understand by natural resources?
   Natural resources are materials from nature used by humans, like water, air, minerals, and forests.

3. Could you please explain biodiversity?
   Biodiversity is the variety of all living organisms on Earth, including plants, animals, and microbes.

4. How is marine life beneficial?
   Marine life provides food, oxygen, medicine, and helps regulate the climate.

5. How do natural resources impact human beings?
   They support survival and development by providing essentials like food, water, energy, and materials.

6. Who should contribute their roles towards protection of natural resources?
   Everyone- individuals, communities, governments, and businesses-should help protect natural resources.

Methodology:

- Group work
- Discussion
- Sharing thoughts
- Presentation

1 Theme One: Environmental Awareness and Conservation of Natural Resources

Lesson 2: *Reasons for the depletion of natural resources*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: Hand outs, Flip chart, Markers

Time: One lesson of 40 minutes.

Procedure:

1. First enable the participants to understand the depletion of natural resources through a presentation.
2. Divide the participants into groups according to the total number of participants and distribute flip charts and markers in each group.
3. Assign each group one reason for the depletion of natural resources theme pollution, deforestation, high utilization of resources, mining, climate change, overconsumption, and waste , and ask them to list down five major effects of that theme on natural resources. Give 15 minutes to finish the assignment.
4. After 15 minutes take feedback from them.
5. Reinforce the topic through discussion with the participants for 20 minutes using the list of major effects of the depletion of natural resources.

Result: Students will be able to identify reasons for the depletion of natural resources and propose measures to prevent it.

Questions and sample short answers:

1. Reasons for the depletion of natural resources:
   Overuse, pollution, deforestation, population growth, and industrialization.
2. Why is it necessary to prevent the depletion of natural resources?
   To ensure future generations have access to essential materials and a healthy environment.
3. Why are water resources important?
   Water is vital for drinking, agriculture, sanitation, and supporting all life forms.
4. What are the main causes of pollution?
   Industrial waste, vehicle emissions, plastic use, deforestation, and chemical use.
5. Could you please explain the benefits of taking measures to prevent the depletion of natural resources?
   Benefits of taking measures to prevent the depletion of natural resources:
   Ensures sustainability, protects ecosystems, supports health, and secures future supplies.

Methodology:

- Analytical group work
- Discussion
- Sharing thoughts
- Presentation
- Activity sheets
- Inventory development

1 Theme One: Environmental Awareness and Conservation of Natural Resources

Lesson 3 : *Waste Diversion*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: Hand outs, Flip chart, Markers, Activity Sheet

Time: One lesson of 40 minutes.

Procedure:

1. Give a presentation to the participants about the types of waste and where they come from.
2. Provide flip charts and markers to the participants and encourage them to list the problems environmental wastes cause.
3. Allow 15 minutes to complete the activity, take feedback from participants, and display lists on the wall.
4. Discuss the types of waste identified, their status, and the problems that environmental wastes cause.

Result: Students will be able to identify types of waste and explain the origins of the waste generated.

Questions and sample short answers:

1. What are the main types of waste generated in your school?
   Paper, plastic, food waste, and packaging materials.
2. What are the activities that cause the most waste in your school?
   Lunch breaks, classroom activities, events, and use of disposable items.
3. Examples of problems caused by environmental waste:
   Pollution, health issues, harm to wildlife, and dirty surroundings.
4. Can you explain the relation between environmental waste and the depletion of natural resources?
   Relation between environmental waste and the depletion of natural resources:
   Waste leads to overuse of resources and pollution, reducing availability of clean natural materials.
5. How does avoiding producing waste help to conserve natural resources?
   It reduces the need for raw materials, saving energy and protecting ecosystems.

Methodology:

- Roleplay
- Discussion
- Sharing thoughts
- Presentation
- Activity sheets

1 Theme One: Environmental Awareness and Conservation of Natural Resources

Lesson 4: *Natural Resources Conservation Practices Reduce, Reuse, Recycle*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: Hand outs, Flip chart, Markers, Activity Sheet, Reference Material

Time: One lesson of 40 minutes.

Procedure:

1. Give a presentation to the participants about 3R Reduce, Reuse, Recycle .
2. Give participants different types of waste materials and ask them to sort out the types.
3. Ask participants best waste reduction method they can choose according to the type of waste.
4. Allow 15 minutes to complete the activity, and take feedback from participants.
5. Discuss the types of waste identified, their status, and the best waste reduction method they have chosen according to the type of waste.

Result: Students, will be able to explain reduce, reuse, recycle and describe different resource conservation practices according to the type of waste in the school.

Questions and sample short answers:

1. Can you explain reduce, reuse, recycle?
   Reduce means using less, reuse means using items again, and recycle means turning waste into new products.
2. What is the most efficient way to conserve natural resources?
   Using resources wisely, reducing waste, and choosing sustainable alternatives.
3. What types of waste can be recycled?
   Paper, plastic, glass, metal, and some electronics.
4. Examples of reusing waste materials:
   Using jars for storage, turning old clothes into bags, or using scrap paper for notes.
5. How does reusing waste help to conserve natural resources?
   It reduces the need for new raw materials, saving energy and preserving ecosystems.

Methodology:

- Roleplay
- Discussion
- Sharing thoughts
- Presentation
- Activity sheets

1 Theme One: Environmental Awareness and Conservation of Natural Resources

Lesson 5: *Concept of Upcycling*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: Hand outs, Flip chart, Markers, Activity Sheet, Reference Material

Time: One lesson of 40 minutes.

Procedure:

1. Give a presentation examples of upcycling
2. Ask the participants to give ideas about upcycling.
3. Divide the participants in groups of 4-5 members.
4. Ask each group to prepare a poster about upcycling.
5. Allow 20 minutes to complete the activity, and choose the best poster.

Result: Students will be able to understand the concept of upcycling and suggest practices for upcycling.

Questions and sample short answers:

1. Can you identify upcycling?
   Upcycling is creatively reusing waste materials to make new, useful, or decorative items.
2. What are the benefits of upcycling?
   It reduces waste, saves resources, lowers pollution, and encourages creativity.
3. What are the types of waste that can be upcycled?
   Old clothes, furniture, glass jars, plastic bottles, cardboard, and wood scraps.

Methodology:

- Analytical group work
- Discussion
- Sharing thoughts
- Presentation
- Activity sheets
- Inventory development

Theme Two:

Art Activitiy Applications With Waste Materials

2

Theme Two:
Art Activitiy Applications With Waste Materials

Importance of Using Waste Materials in Art Education

The use of waste materials in art education,

- Encourages creativity and innovation,
- Promotes environmental awareness and sustainability, reduces the amount of waste generated in classes where art activities take place
- Ensures the conservation of natural resources used in the production of art materials
- Develop problem-solving and fine motor skills
- Provide cost-effective resources for art activities
- Ensure the active participation of disadvantaged students who don't have access to the necessary materials for art classes due to financial or geographical constraints.

9 Elements to Consider in the Selection of Waste Materials

When selecting waste materials to be used in art activities and the preparation of an educational environment, there are several key elements to consider.

These ensure that the materials are not only suitable for creative expression but also safe, sustainable, and effective for learning.

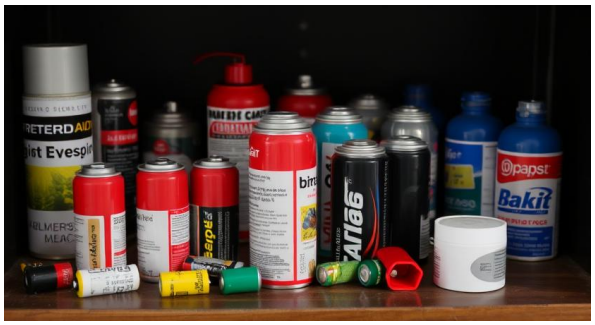
Here are the main factors:

1-Safety

All kinds of solid waste materials can be used to make art work, but there are elements that we should pay attention to when choosing these materials. These **materials should be free from harmful chemicals or substances** that could pose risks to students' health, such as lead, cadmium.

Materials should not have sharp edges and materials with cutting and piercing properties such as glass, tin, nails should not be used in the work with students.

Flammable and explosive materials should be avoided batteries, empty deodorant and lighter fluid cans, etc. .



Materials should be clean, free of food residues, harmful bacteria, or other contaminants that could pose health risks. It's important to ensure that waste is properly sanitized before use.

2-Suitability for Artistic Expression

Choose materials that can be easily manipulated cut, glued, painted, etc. .

Ensure durability and flexibility for creative use. Provide a variety of textures, shapes, and colors to enhance artistic exploration.

3-Educational Value

Select materials that align with the learning objectives of the activity.

Encourage problem-solving, imagination, and hands-on engagement.

Use materials that allow for cross-disciplinary learning e.g., math, science, and history through art.

4-Environmental Considerations

Prioritize biodegradable and recyclable materials. Encourage the repurposing of everyday objects to reduce waste.

Avoid materials that contribute to excessive plastic waste or pollution.

5-Suitability for the Intended Audience

Age-appropriate: Match complexity and safety to the age group.

Skill level: Choose materials that align with participants crafting or artistic abilities.

6-Durability and Condition

Sturdiness: For projects meant to last, select materials that are durable.

Condition: Materials should not be too worn or degraded.

Preparation of the Educational Environment

Ensuring Safety and Supervision
Precautions for younger age groups

- Provide appropriate tools such as child-safe scissors and non-toxic adhesives.
- Make sure that cutting tools such as knives, box cutters, etc. are used only under the supervision of the teacher.
- Supervise students closely, especially when handling delicate or complex materials.
- Educate students on proper handling and disposal of waste materials.

Organizing the Workspace

- Set up designated areas for material storage and usage.
- Ensure that tools and materials are within easy reach for students.
- Maintain a clean and clutter-free environment to encourage focus and creativity.

Ensuring Safety and Supervision
(Precautions for adult groups)

- Ensure all participants are aware of safety guidelines before starting.
- Provide personal protective equipment (PPE) such as gloves and safety goggles when necessary.
- Avoid the use of highly flammable or toxic substances.
- Keep first aid kits readily available in case of minor injuries.

Workspace Organization

- Arrange the workshop area to allow free movement and prevent crowding.
- Keep hazardous tools and materials in designated areas, accessible only when needed.
- Ensure proper ventilation, especially when using adhesives, paints, or other chemicals.

Emergency Preparedness

- Identify emergency exits and inform students of evacuation procedures.
- Ensure that fire extinguishers are available and in working condition.
- Designate a responsible person to handle emergency situations if needed.

Handling of Tools and Materials

Educate students on the correct use of tools such as cutters, drills, and saws.

Provide clear instructions on disposal and recycling of waste materials.

Encourage responsible handling to prevent damage to equipment or injury.

Encouraging Responsible Use and Disposal

Implement sorting bins for reusable, recyclable, and non-recyclable waste.

Teach students about the environmental impact of materials and their disposal.

Promote mindful use of materials to minimize waste.

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 1: *Trees in the park* *sample lesson plan-stage of pre-school education)*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: plastic bottle cap, modeling clay, a tree branch, wool

Time: 30 minutes.

Procedure:

1. The teacher explore materials together with the children to get to know the materials.
2. Discussion with children about whether objects are natural or artificial.
3. Finding out the children's experiences about where they have seen and encountered such objects and what can be done with them.
4. Making of trees. The teacher works together with the children: modeling clay isdivided into small pieces. The small pieces of modeling clay are pressed into thebottle cap and a tree branch is fixed there. Pieces of wool are placed on a twig, so as to form the foliage of a tree. The color of the wool is selected according to the desired season. Snowy trees are made using white wool, green trees are formed using green wool etc.

Result: Students will be able to recycle and describe different resource conservation practices according to the type of waste in the pre-school.

Questions

1. How could we use modeling clay and the bottle cap?
2. What can we make from a bottle cap, modelling clay and a twig?
3. How can we use wool?

Methodology:

- discussion
- exchange of ideas
- modeling and demonstrating
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 2: *Candle holder for a tea candle* *sample lesson plan-stage of pre-school education)*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: glass jar, scraps of beeswax cell plate, pearls, glitters, scraps of metal wire, tealight candles in metal cups.

Time: 45 minutes

Procedure:

1. Attracts children's attention by showing a candle holder. Is it handmade or factory made?
2. Discuss what materials to make the candle holder from. What have children made of wax, how have they used glass jars? What materials are used to decorate the candle holder?
3. Materials necessary for creative activity are selected glass jar, beeswax cell plates, wire, pearls, glitter .
4. The teacher works together with the children. The glass jar is covered with scraps of beeswax cell plate and decorated with pearls and glitters.

Result: Students will be able to understand the concept of upcycling and suggest practices for upcycling.

Questions

1. **What materials is the candle holder made of?**
2. **Where did we find these materials, have they ever been used?**
3. **Why is it good not to throw away waste materials?**

Methodology:

- discussion
- task analysis
- exchange of ideas
- modeling and demonstrating
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 3: *Toys made of waste materials* *sample lesson plan-stage of pre-school education*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: A box containing various materials, e.g., paper roll, scraps of paper, scraps of fabric, twisted yarn, string, leftover modeling clay, buttons, pearls, markers, coloured pencils, glue

Time: 1 hour

Procedure:

1. Surprise Box is received which contains various materials.
2. Materials are grouped, arranged by color, material, texture, application, etc.
3. Discussion of what can be created from these materials.
4. A problem situation/problem question is raised - How to combine these materials to make a toy?
5. Creative activity with materials.
6. Discussions about the progress of the work and the materials used.

Result: Students will be able to identify types of waste and explain the origins of the waste generated.

Questions

1. **What materials are the toys made of? Can you name them?**
2. **What other materials could be used to make the toy?**
3. **Can you give some examples of waste reuse?**
4. **How does the reuse of waste help preserve natural resources?**

Methodology:

- discussion
- sharing thoughts
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 4: *Characters for puppet theatre* *sample lesson plan-stage of pre-school education*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: scraps of paper, cardboard, markers, coloured pencils, glue, paper clips

Time: 45 minutes

Procedure:

1. Attracts children's attention with a problem situation - characters are needed for a puppet theater.

2. Discussions with children about what to make characters from. What materials are found the most in the group. How can paper scraps be used? Can they be made into a puppet for the theater?

3. The teacher works together with the children and makes characters for the puppet theatre. The silhouette of the character is drawn, coloured and cut out. The silhouette is pasted on the cardboard in such a way that a paper clip can be inserted between the edges so that the figure stays firmly on the surface and does not fall.

4. Discussion about the progress of the activity and collecting ideas about what else could be created in this technique.

Result: Students will be able to understand the concept of upcycling and suggest practices for upcycling.

Questions

1. **Why do you think that your created puppet character is valuable?**
2. **Can you give some examples of reusing paper?**
3. **How does the use of paper scraps help preserve natural resources?**

Methodology:

- discussion
- sharing thoughts
- modeling and demonstrating
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 5: *Characters for puppettheatre-marionette* *sample lesson plan-stage of primary education)*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: paper roll, scraps of paper,fabric scraps, twisted yarn, string, used felt-tip pens,markers, coloured pencils, glue, scissors

Time: 1 hour.

Procedure:

1. Group work. The group gets to know the waste material paper, fabric scraps, old felt-tip pens, twisted yarn and collects ideas on what could be done from these materials. Exchange of ideas.
2. Discussion with the groups about what kind of artwork they could create from the materials.
3. Problem question - can you make a marionette from these materials?
4. Work on creating a marionette. Make the head and body of the doll from paper rolls. The doll's face is made from scraps of paper, and the hair is made from twisted yarn. Garments are made from scraps of fabric. The legs and arms of the doll are made by stringing pieces of used felt-tip pens that have been cut in advance. A string is attached to the head, arms and legs of the marionette so that the puppet can move.

Result: Students will be able to explain reduce, reuse, recycle and describe different resource conservation practices according to the type of waste in the school.

Questions

1. **Can you name what materials a marionette is made of?**
2. **Why is the marionette special, valuable?**
3. **What do our actions show that we have acted in a nature-friendly way?**
4. **How does reusing waste help to conserve natural resources?**

Methodology:

- discussion
- task analysis
- exchange of ideas
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 6: *Handpuppet* *sample lesson plan-stage of primary education*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: a sock, felt scraps, buttons, needle, thread, scissors

Time: 1 hour.

Procedure:

1. Exchange of ideas on what to do with one sock.
2. Creative activity. Choose a sock that will be the body of the hand puppet. Then the parts for the ears, eyes, and mouth are cut out of the scraps of felt. Ears and eyes are sewn to the sock. The toe of the sock is tied with thread to create a nose, and a button is sewn to the end.
3. Students present their created hand puppets and reveal why the puppet is valuable and why making this is a useful project.

Result: Students will be able to understand the concept of upcycling and suggest practices for upcycling.

Questions

1. Why are buttons good materials for hand puppet eyes?
2. What other things could be used to make a doll?
3. What are the types of waste that can be recycled?

Methodology:

- discussion
- exchange of ideas
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 7: *Wallet* *sample lesson plan-stage of primary education*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: coffee packaging, zipper, needle, thread.

Time: 1 hour.

Procedure:

1. Discussion with students, have they ever used any waste materials to create any other artwork/project?
2. Ideas are written on the board, why it is good to create works of art/projects from waste materials.
3. A discussion and exchange of ideas about the possibilities of using a used coffee packet follows.
4. A wallet is made. Cut off the bottom of the coffee bag. Cut one side edge. Fold the coffee package over to the other side. Choose the size of the wallet, cut it to the desired size. Sew the two side edges together, leaving the top edge open. Sew a zipper.

Result: Students will be able to understand the concept of upcycling and suggest practices for upcycling.

Questions

1. **What other materials could be used to make the wallet?**
2. **Why is a coffee bag a good material for making a wallet?**
3. **Would you choose other's materials if they were available? Which ones?**

Methodology:

- discussion
- exchange of ideas
- practical activity with waste materials

2 Theme Two: Art Activitiy Applications With Waste Materials

Lesson 8: *Handpuppet* *sample lesson plan-stage of secondary education*

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: modeling clay, newspapers, glue, acrylic paints, scraps of fabric, yarn.

Time: 1 hour.

Procedure:

1. Discussion in groups about how newspapers can be used. Collecting ideas.
2. Problem question - what artwork can be created from a newspaper? Have you created 3D works from the newspaper? What should be done to create such a work of art?
3. The head of the hand puppet is created using the papier-mâché technique. The newspaper is torn into small pieces and pasted over the previously created shape, for example, a rooster's head. Once the form is glued, it is painted afterwards.
4. A hand puppet glove is sewn from fabric scraps and decorated using yarn.

Result: Students will be able to identify types of waste and explain the origins of the waste generated.

Questions

1. **Why is making a hand puppet an effective way of preserving natural resources?**
2. **What kind of waste was recycled to make the hand puppet?**
3. **Can you give some examples of waste reuse?**
4. **How does the reuse of waste help preserve natural resources?**
5. **What other waste materials could be used to decorate a doll?**

Methodology:

- discussion
- exchange of ideas
- modeling
- practical activity with waste materials

Theme Two:
Art Activitiy Applications With Waste Materials

Lesson 7: *Decorativehandpuppet*

sample lesson plan-stage of higher education

Objective: To develop environmental awareness among students by informing them about the reasons for the depletion of natural resources and suggesting measures to prevent it, thereby promoting the conservation of natural resources.

Materials: cmodeling clay, acrylic paint, fabric scraps wire scraps, pearls

Time: I hour.

Procedure:

1. Discussion on how fabric scraps can be used. Why is it good to use them? Can the design of the artwork be realized by using them?
2. Group work. Fabric scraps are sorted by colour and texture. Problem question - is it possible to group scraps of fabric to create a certain animal, considering the colour of the animal's coat?
3. Making a decorative hand puppet. According to the plumage of the animal, the scraps of fabric are arranged in such a way that, when sewn, they are associated with the specific animal.
4. The glove of the hand puppet is decorated with scraps of wire.

Result: Students will be able to identify types of waste and explain the origins of the waste generated.

Questions

1. **Why is it meaningful to use fabric scraps?**
2. **Why is using fabric scraps an effective way to preserve natural resources?**
3. **What other types of waste can be used to create a decorative hand puppet?**
4. **Can you provide some examples of recycling waste?**
5. **How does recycling waste help preserve natural resources?**

Methodology:

- discussion
- task analysis
- exchange of ideas
- group work
- modeling
- practical activity with waste materials

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Co-funded by the European Union

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