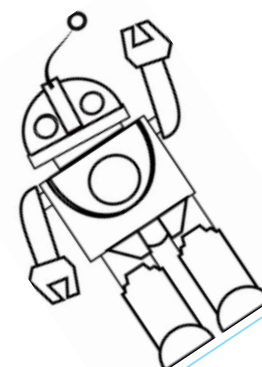


CT4
IRELAND



Exploring engineering!

Christine McGearty



What have we covered so far?

- ▶ **Civil Engineering**
- ▶ **Aeronautical and Astro Engineering**
- ▶ **Electrical Engineering**
- ▶ **Optical and Medical Engineering**

Here are links to some of the things we looked at in class.

Scale of the Universe - <https://scaleofuniverse.com/>

Planet Size Video - https://www.youtube.com/watch?v=B4dK_083LrA

Boston Dynamic Robots - https://www.youtube.com/watch?v=_sBBaNYex3E

Environmental and Renewable Engineering!

Today we will look at environmental engineering, a very important, but sometimes overlooked field in engineering.

Environmental Engineers deal with things like water treatment, air pollution and recycling.

We have already talked about how important it is to be environmentally conscious when creating something. Let's look at some examples!

Recycling Vs Upcycling



[Upcycling]

- ✓ Conserves the environment
- ✓ Reforms a product into **a new product**
- ✓ **Unlimited** available usage of raw materials

- ✓ Better quality
- ✓ Designed unique
- ✓ Handmade
- ✓ Limited editions

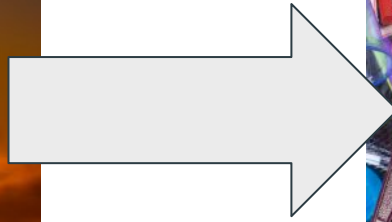


[Recycling]

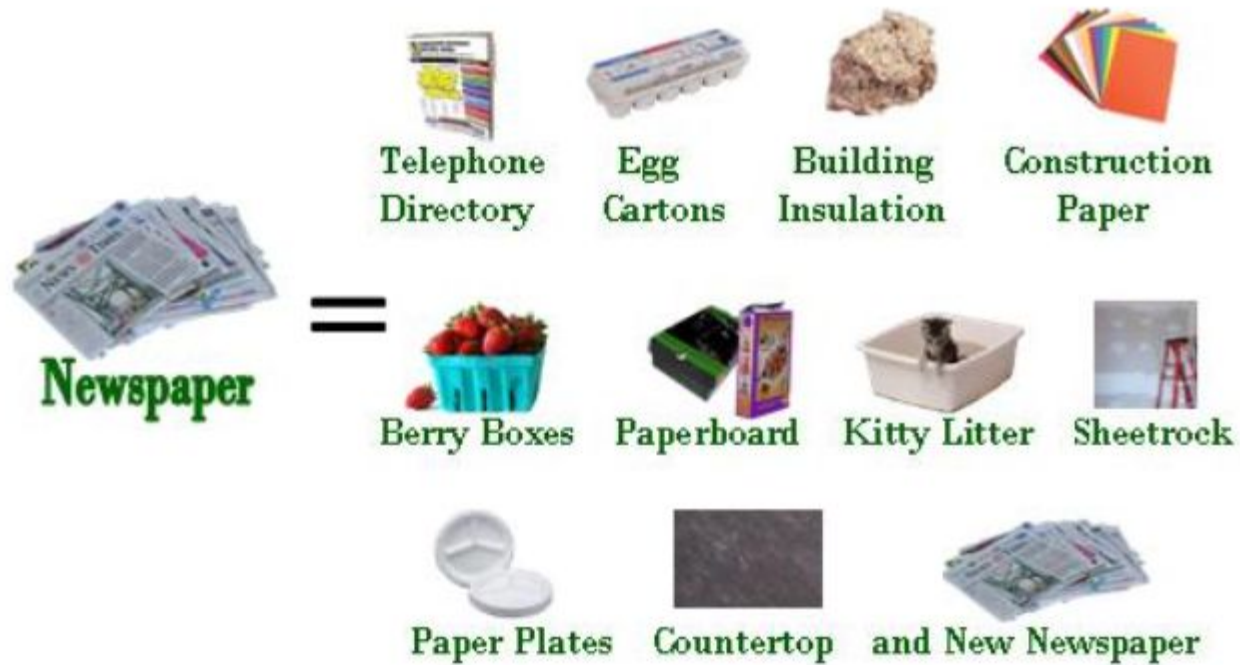
- ✓ Conserves the environment
- ✓ Reforms a product into **a material**
- ✓ **Limited** available usage of raw materials

- ✓ Requires processes to break down the original materials





What do your recyclables become?





Metal Cans



Bike Parts



Car Parts



Steel Beams



Rebar



Appliances



New Cans



**Plastic Beverage
Bottles**

=



Carpet



Backpacks



Polar Fleece



**Sleeping Bag and
Ski Jacket Insulation**

Sorting - Into different metals

Processing - Shredding up

Melting - Melting the metals down into liquids

Purifying - cleaning the metals

Making into new products by solidifying!

<https://www.youtube.com/watch?v=jAqVxsEgWIM>

What is Upcycling?

Upcycling is all about creative recycling!

Think of all of the things we throw away nowadays, even if we think that there is little waste.

From simple things like making jars to store your things from nutella jars, or pencil holders from old cans! There's plenty of things that we can reuse instead of simply throwing them away.

And why is it important! Is there more waste with products than just the product itself?



The first world is quiet wasteful, other countries are far more resourceful than us and are able to create nearly anything out of waste materials.



Well, all of them! There are specific ways which we can upcycle every material, but some make better materials than others. Can we name some materials? What materials are in the room right now?

The main part of upcycling is to use objects and products that **we already have**, but we can still make new products.

Exercise!!

Get a piece of paper and a notepad, and go around your house checking what things you could upcycle. Make a list and come back!

This could be anything, toilet rolls, empty cans, broken toys.

You may have seen some of these before:





<https://craftingagreenworld.com/articles/kids-can-upcycle-15-upcycling-projects-kids/>

<https://maybeiwill.com/15-fun-upcycling-ideas-for-kids/>