# Introducing the 6Rs

A Concept to Sustainable Practices



## Why talking about the 6R?

We introduce them because as a concept they can help you to see new options where to apply sustainability. Also, they help to understand what single actions should achieve. By seeing their purpose one can more easily discover and craft new actionable steps.



## A new Organization

Principle

#### Reduce

Retain what is operational to achieve a triumphant experimental result, rather than giving precedence to factors like ease.

Strategy

#### Reject

A cognitive approach to evade the usual, advantageous, or direct.or straightforward

#### Rethink

The process of adopting a fresh standpoint to discover substitute resolutions and novel ideas.

Actions

#### Recycle

Comprehending the chemical composition facilitating a subsequent use downstream.

#### Reuse

Preventing the usage of items just once when pollution is not an issue.

#### Repair

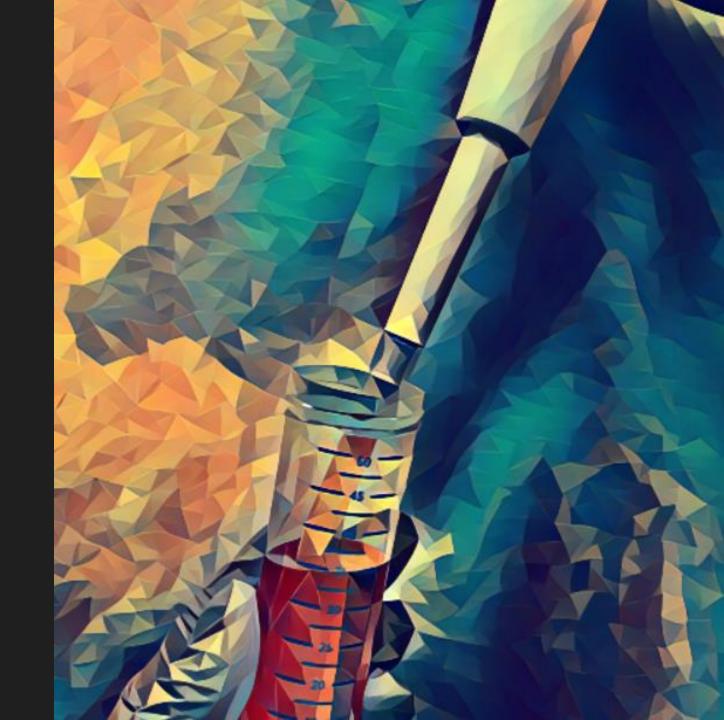
Comprehension, upholding, and fixing of machines.

#### Before we start

The 6Rs emerge as a guiding principle that encourages to reconsider our work patterns and embrace responsible habits. They enable us to view our daily research through a new perspective in order to see the potential for change. The order is grown historically, we would reorder them in a functional manner as shown on the left.

#### *Reduce*

Reducing is king. Reducing is the final goal of sustainable action, and basically the other 5Rs point towards this principle. Reducing, focuses on minimizing the use of resources and materials. From reducing waste generation, energy consumption, or chemical usage. In essence, reduce is the guiding principle that should replace convenience or habit.



#### <u>Reduce</u>

Reduce the amount of single-use plastic tubes by using glassware instead. Optimize the quantity of chemicals and reagents, ensuring they are only used in the necessary amounts. Minimize the use of paper by using electronic data collection methods and digital media instead of printing things out.

### <u>Reject</u>

The principle of refusing focuses on not going with the common, with what is convenient or comforting. Refusing basically builds on convictions. Importantly, can be a great sign and initiator of convincing others. Also, it initiatives Rethinking to find new solutions & innovations



### <u>Reject</u>

For example: Refuse to simply agree the "running system" just because it is more convenient. Refuse to give up trying when looking for innovate approaches. Practically, one can refuse the use of single-use plastics, such as disposable pipettes or plastic bags. Instead, one can opt for reusable alternatives, such as glass pipettes or reusable containers, to reduce plastic waste.

#### <u>Rethink</u>

The principle of rethink encourages to critically evaluate practices and explore alternative approaches that are more sustainable. It involves questioning existing systems and finding innovative solutions to environmental challenges. This is your chance to be creative!



#### <u>Rethink</u>

Can you use old tip boxes as containers? How about useing a PCR-tube instead of a normal one since you save on plastic. Can you use a different solvent which is less toxic? How about setting up a collaboration in order to avoid the resource & time intensive trying-things-out?

#### *Reuse*

Reuse involves finding ways to reuse materials or products instead of disposing of them after a single use. This principle emphasizes the importance of designing research practices and conscious approach to see where contamination is possible and where not.



#### *Reuse*

For example: Consider whether you can reuse materials such as falcon tubes in case you prepare the same solution over and over. If you pipette solvents or you have multiple steps for a single sample, you might be able to keep the pipette tip since there is no contamination risk.

### <u>Recycle</u>

Recycling refers to the process of converting waste materials into new products. This principle emphasizes the importance of segregating and managing waste materials in a way that enables further processing. Actually, recycling is an exciting scientific topic since one can differentiate upcycling, downcycling and various other forms.



### <u>Recycle</u>

Research laboratories can implement recycling programs for commonly generated waste materials such as paper, plastic, glass, and metal. By providing dedicated recycling bins and ensuring proper segregation, researchers can contribute to the recycling loop and reduce the environmental impact of their waste. The same counts for r broken electronic devices

### <u>Repair</u>

The idea of repairing, promotes the restoration and maintenance of equipment and infrastructure to prolong its lifespan and reduce the need for replacement. By repairing instead of discarding, you can minimize waste and conserve resources.



### <u>Repair</u>

Instead of purchasing new laboratory equipment when it malfunctions, researchers can opt for repair services or ask their internal caretakers. Asking is for free and repairing of cheaper than buying newly.



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