

Appendix B- Research Plan

Question	Answer	Research Type	Citation
How can you assess the carbon footprint created by using cut flowers?	' <i>Life Cycle Analysis</i> ' is a tool used for evaluating the environmental impacts of the entire life cycle of products and processes. When applied to the life-cycle of cut flowers, it is found that transport, heating, and electricity, are the key carbon hotspots.	Scholarly Article	(Swinn)
What is the carbon foot print of a single flower?	Using a scientific method of calculation, it is assessed that cut flower productions can have carbon emissions as high as 3 kg CO ₂ per flower. A large proportion of these emissions can be attributed to heating greenhouses with fossil fuels such as natural gas.	Blog	("The Environmental impacts of the cut-flower industry")
What is the problem with carbon emissions? Why is it harmful?	According to the union of Concerned Scientists, CO ₂ emissions have been the main reason for climate change since the 1 st half of the 18 th century. Unlike other contaminants, CO ₂ remains in the atmosphere for thousands of years.	Blog	("The Environmental impact of the cut-flower industry")
Is the idea of creating floral art without using fresh cut flowers, likely to work?	Yes, people are becoming increasingly aware of making choices that are not detrimental to the environment. This means that alternative solutions will be welcomed with an open mind, as long as they serve the aesthetic purpose.	Interview	(Chesdmethee)
How can I plan and organize possible materials that I need to create my floral art?	3 lists can be created for the materials: the "X-List", the "Grey List", and the "Positive List". The X-List should contain the materials which are likely to cause fatal conditions in humans, and should be eliminated right away. For floristry, foam (formaldehyde) will be at the top of the X-List. It also includes plastics and cellophane. Materials on the Grey List are harmful, but not as critical as the X-list, so they can be phased out slowly (e.g. glue; coated non-rust wire). Materials on the P-List are those which are safe and do not pose a threat (e.g. copper wire, sand, moss, paper, and bio-degradable materials).	Book	(McDonough)
Is it potentially limiting to not be able to use fresh cut-flowers?	No, it is not a limiting factor at all. The idea is to completely re-invent the entire process in such a way that entirely new materials are concepts are used. These should have a high aesthetic appeal, only then they will truly be a real alternative. If the aesthetics are successful in promoting a sense of well-being, then people will be quick in taking to it.	Website	(Amanda)
What sustainable plant material can I use which has lower carbon foot print than cut flowers?	1) Pumpkin seeds can be used for the floral art: - The carbon footprint of pumpkin is 0.14 kg CO ₂ for 1 kg of pumpkins; while the average carbon foot print of flowers is 120 kg CO ₂ for a kg of flowers. So, the difference is massive.	Blog	(Pumpkin Seeds)
	2) Mustard seeds can be used for the floral art: - The carbon footprint of mustard seeds is 2.9kg CO ₂ for 1 kg mustard seeds, while the average carbon foot print of flowers is 120 kg CO ₂ for a kg of flowers. So, the difference is massive.	Website	Carbon footprints of foods list)
	3) Sago can be used for the floral arrangement: -The carbon footprint of sago is 0.1 kg CO ₂ for 1 kg sago, while the average carbon foot print of flowers is 120 kg CO ₂ for a kg of flowers. So, the difference is massive.	Scholarly article	(Yasuf)
	4) Lotus seeds can be used. They are sustainable as they are hand-farmed and no machinery is used in the process, thus reducing the carbon footprint.	Website	(Jachec)
	5) Black preserved moss can be used: - Preserved moss is natural moss that is no longer alive and has been carefully preserved through an eco-friendly process.		(Everything You Wanted to Know about Preserved Moss)
	6) Whole turmeric: - the carbon footprint is 0.4 kgs. CO ₂ for 1 kg turmeric; so, it is much lower carbon footprint than flowers.	Website	(Carbon footprints of foods list)
	7) Bay leaves: - carbon footprint is 1.6 kg. CO ₂ for 1 kg bay leaves so it is very low	Website	(Carbon footprints of foods list)
	8) Cardamoms: - carbon footprint is 1.6 kg CO ₂ for 1 kg cardamom so very low	Website	(Carbon footprints of foods list)
	9) Cinnamon sticks: carbon footprint is 1.6 kg CO ₂ for 1 kg cardamom so it is very low	Website	(Carbon footprints of foods list)
	10) Black pepper: - carbon footprint is 2.5. kgs. CO ₂ for 1 kg black pepper, so is a bit higher than the other materials, but still huge difference with flowers	Website	(Carbon footprints of foods list)
	11) Cumin seeds: - carbon footprint is 1.6 kgs. CO ₂ for 1 kg cumin seeds so it is very low	Website	(Carbon footprints of foods list)
	12) Cloves: - carbon footprint is 1.6 kg CO ₂ for 1 kg cloves so very low	Website	(Carbon footprints of foods list)
What Eastern culture can I represent through my floral art?	Adorning the hair lavishly with bejeweled ornaments is a part of Eastern culture and tradition since centuries. In India, hair adornment was one of the "Shola Shringar" or 16 adornments that enhanced a girl's beauty, and gave her a Goddess like aura. Component 1 of my floral art will be a look alike of a bejeweled hair accessory or <i>Keshapasharachana</i> , which is an Eastern treasure.	Website	(Solah Shringar)
	Component 2 of my floral art will be made of spices, to resemble a landscape. Component 3 will be made of whole turmeric. Both these components represent 'Eastern treasures' as the spice trade and its routes connecting ancient civilizations of the East have a rich history, and in the ancient days, the spice trade was so lucrative that spices were known as Eastern treasures. Even today, these spices, like turmeric, cardamom, clove, bay leaves, cinnamon, cumin seeds, etc. are considered as Eastern treasures due to their medicinal value, which is only studied and practiced in ancient Eastern medicinal practices like Ayurveda. The healing nature of spices can also be found in ancient Sanskrit texts.	Website	(Morais)

Approaches to learning used in the Research Plan:

I used **information literacy skills** to ensure that I chose a variety of sources, and made connections between them. Additionally, I used **Media literacy skills** to critically analyze the information contained in these sources. I also employed **critical thinking skills** to choose the most relevant information and discard information that is not required.