

Secondary – Mission 1

Understanding Circular Economy – A Smarter Way to Use Resources

Imagine if everything we used was thrown away after just one use. Our planet would quickly fill up with trash, and we would run out of resources! This is what happens in a linear economy, where materials are taken from nature, made into products, and then discarded.

But there is a smarter way to use resources—it's called the circular economy.

The circular economy is a system that focuses on minimizing waste and making the most of available resources. Unlike the traditional linear economy, which follows a take-make-dispose model, the circular economy promotes sustainability by keeping materials in use for as long as possible. This approach is guided by the principles of the 5Rs: Reduce, Reuse, Recycle, Repair, and Rethink, along with upcycling, which adds value to discarded materials. By adopting these principles, we, as a nation, can reduce environmental impact, conserve natural resources, and promote economic efficiency.

The idea of the circular economy has its roots in early economic and ecological studies. In 1966, economist Kenneth Boulding introduced the concept of a “closed-loop” system, emphasizing the need to manage resources in a way that prevents excessive waste. Later, in the 1970s and 1980s, Walter Stahel and Michael Braungart expanded on this idea by promoting sustainable design and **cradle-to-cradle**¹ production methods. Today, many governments, including ours, are implementing circular economy strategies to address pressing environmental challenges such as pollution, resource depletion, and climate change. According to the World Economic Forum, transitioning to a circular economy could reduce global carbon emissions by 39% and cut raw material extraction by 28% by 2032. This highlights the importance of adopting such strategies in our own country to ensure a more sustainable future.

One of the first steps in adopting a circular economy is to Reduce—that is, cutting down on waste before it even starts. This includes limiting unnecessary consumption and choosing products that generate less waste. For example, reducing plastic packaging helps decrease the amount of non-biodegradable waste in landfills and oceans. In Malaysia, initiatives like banning single-use plastic bags in supermarkets have encouraged consumers to switch to reusable alternatives. Brands are also stepping up—Faber-Castell, for instance, has begun transitioning from single-use plastic packaging to more sustainable paper-based alternatives across all its products. This shift supports Malaysia's national goal to cut single-use plastic waste by 50% by 2030, as outlined by the Ministry of Environment and Water. Given that we generate an estimated 2.5 million tonnes of plastic waste annually—with 55% of it mismanaged—this goal is crucial for our environmental well-being.

After reducing, the next principle is to Reuse. Reusing materials and products extends their lifespan and decreases the need for new production. This practice is becoming more common through the popularity of thrift shops, second-hand clothing, and refurbished electronics. Globally, the second-hand clothing market is projected to reach USD 218 billion by 2026. In Malaysia, community-driven initiatives help promote reuse and reduce overconsumption. For instance:

- *The Free Market Malaysia* allows people to give away pre-loved items for free—no buying, selling, or bartering involved.
- *Books on the Move Malaysia* encourages people to leave books in public places for others to pick up, read, and pass along.

By embracing a culture of reuse, we can reduce our environmental footprint while saving money and resources.

The third R is Recycle—a process that transforms waste materials into new products and reduces the demand for virgin resources. In Malaysia, approximately 38,000 tonnes of waste are generated daily, but only about 30% is currently recycled. To address this, the government has introduced initiatives such as mandatory household waste separation. Meanwhile, private companies are converting plastic waste into construction materials and textiles. The national target is to increase the recycling rate to 40% by 2025.

Some companies are already making a difference. For example, Faber-Castell Malaysia has launched eco-friendly stationery made from 100% recycled plastic, such as highlighters and markers. This not only reduces the need for new plastic production but also lowers the environmental impact of manufacturing.

¹*Cradle-to-cradle is a sustainability concept that means designing products in a way that they can be fully reused, recycled, or safely returned to nature — with no waste left behind.*

Globally, the recycling market is expected to reach USD 500 billion by 2027, showing that recycling is not only good for the planet—it's also economically beneficial.

Beyond recycling, it's important to Repair products instead of discarding them. Many electronics, furniture items, and appliances can be fixed, saving both money and resources. The United Nations reports that over 50 million tonnes of electronic waste (e-waste) are produced globally each year, with less than 20% being properly recycled. Malaysia alone contributes over 360,000 tonnes of e-waste annually. To combat this, repair workshops and online tutorials are gaining popularity, empowering individuals to fix broken items themselves. Even simple household repairs can make a difference—such as using UHU Shoes & Leather Repair glue to fix torn footwear, or using UHU All-Purpose or Super Glue to mend broken plastic containers and everyday items. Encouraging a repair culture not only extends product lifespans but also reduces the need for constant replacement, helping us move towards a more sustainable, circular economy.

Moving further, we must also Rethink how products are designed and used. This means shifting from short-term use to long-lasting design strategies. For instance, companies can produce electronics with modular parts that are easy to repair or upgrade. Others may create biodegradable packaging or even change their business models to offer rentals instead of ownership. The circular economy has the potential to generate USD 4.5 trillion in global economic benefits by 2030. In Malaysia, more companies are integrating eco-friendly practices into their operations to meet rising consumer demand and global sustainability goals. Rethinking production and consumption patterns helps us move from wastefulness to lasting value.

Closely linked to rethinking is the idea of Upcycling, which turns discarded materials into higher-value items. Unlike recycling, upcycling doesn't break down materials; instead, it creatively repurposes them. In Malaysia, upcycling is gaining momentum. Artists and entrepreneurs are transforming waste like textiles, wood, and plastic into stylish furniture, accessories, and even fashion items. One standout is the Biji-Biji Initiative, which turns used seat belts and banners into trendy bags and clothing—demonstrating that sustainability can be innovative and fashionable. Some local initiatives also convert food waste into organic fertilizers, supporting sustainable farming practices. Globally, the upcycled fashion market alone is projected to reach USD 8 billion by 2026.

The circular economy also plays a vital role in supporting Environmental, Social, and Governance (ESG) principles. Environmentally, it reduces pollution and resource use, helping Malaysia progress toward its net-zero carbon emissions goal by 2050. In some industries, circular practices can cut greenhouse gas emissions by up to 70%. Socially, the circular economy creates jobs in recycling, repair, and sustainable design. According to the International Labour Organization (ILO), it could generate six million new jobs globally by 2030. On the governance front, businesses are under increasing pressure to report on sustainability practices. A 2021 study revealed that 72% of global consumers prefer sustainable packaging, showing that demand for circular solutions is growing fast. For Malaysia to remain competitive, our industries must align with these global expectations.

In conclusion, embracing the circular economy is key to building a more sustainable Malaysia. By practicing the 5Rs—Reduce, Reuse, Recycle, Repair, and Rethink—and upcycling, we can protect the environment, conserve resources, and grow the economy. For example, students can apply these steps to something as simple as an old pair of jeans: they **rethink** their shopping habits, **reduce** waste by wearing the jeans longer, **reuse** them for chores, **repair** holes with patches, **recycle** the fabric when it's too worn out, and even **upcycle** parts into a pencil case or tote bag. These simple choices can make a big difference. With collective effort and conscious decisions, we can all play a part in building a greener, more resilient future.

Critical Thinking Question: Malaysia is working towards a circular economy to reduce waste and protect the environment. If you were in charge, what are three simple changes you would introduce in schools or communities to help make this happen?