



**RESEARCH**

**&**

**IDEA**

Chew Li Shen | Ngoh Jin Heng | Yong Quan Yue  
Young Kai Qi | Meryl Lee



**YOUNG KAI QI**



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# IDEA 1 : RECYCLING

Goal Achieved : RESPONSIBLE CONSUMPTION AND PRODUCTION (12)

# Why Is Recycling Important

Recycling is an important part of a sustainable lifestyle and in preserving the resources used by society. Unfortunately, the vital role of sustainability and recycling today is often misunderstood. Although many people are familiar with recycling in general, the depths of this action are subtle and often ignored. An understanding of sustainability and recycling and the impacts of living consciously are necessary for the process of leading more meaningful and responsible lives. A greater understanding of these concepts is required for any one person to live in this manner.

To get a better grasp on recycling, an understanding of what sustainability means needs to be acquired first. According to <http://www.epa.gov>:

*"Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment."*

Here, in this definition of sustainability, lies the direct importance of recycling. Recycling helps to preserve the resources available to society and to reduce the impact of processing these resources on our planet. In reducing the impact of the resource processing, more clean water is available for use, human health improves due to fewer pollutants in the air and contamination of water and other life-sustaining resources, and finally, a healthier earth to live on.



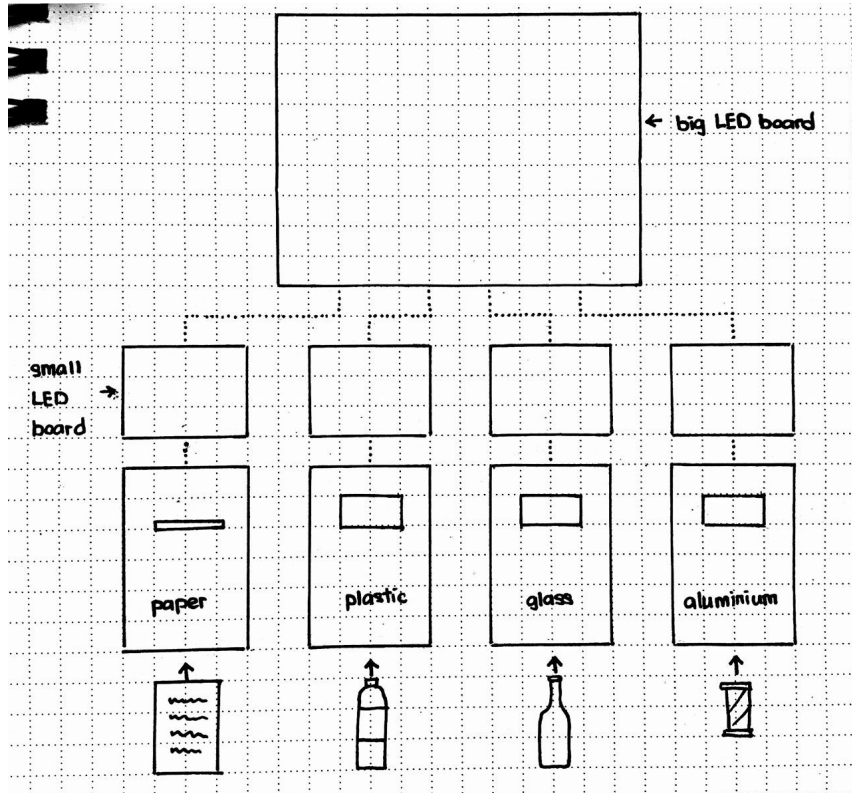
Source: <https://www.uaf.edu/sustainability/recycling-program/why-recycle/index.xml>



# MESSAGE / AWARENESS

By recycling the waste in daily life, we can slowly make big changes to the world.

# HOW IT WORKS



1. Throw the waste accordingly into the recycle bins.
2. When a waste goes in, a message on the small board will light up, showing that they had help save the resource.
3. When the small board is lighted, the LED bulb on the big board will light one up.
4. Keep recycling to light up the whole board to see the final picture(achievement).

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# IDEA 2 : LIGHTS OUT

Goal Achieved : RESPONSIBLE CONSUMPTION AND PRODUCTION (12)

CLIMATE ACTION (13)

## How Bad is Light Pollution?

With much of the Earth's population living under light-polluted skies, over lighting is an international concern. If you live in an urban or suburban area all you have to do to see this type of pollution is go outside at night and look up at the sky.

According to the 2016 groundbreaking "[World Atlas of Artificial Night Sky Brightness](#)," 80 percent of the world's population lives under skyglow. In the United States and Europe 99 percent of the public can't experience a natural night!



Before and during the 2003 Northeast blackout, a massive power outage that affected 55 million people. Photo by of Todd Carlson



### Bird Migration Dramatically Altered by High-intensity Urban Light Installation

October 18, 2017



### Nobel Prize Awarded for Discovery of Molecular Mechanisms Controlling the Circadian Rhythm

October 2, 2017



Source: <http://darksky.org/light-pollution/>

## CAUSES OF LIGHT POLLUTION

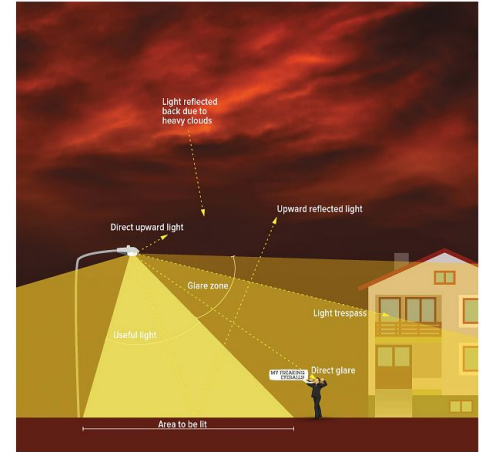
Luminous pollution is caused by using outdoor lights when and where they are not necessary. Poorly designed residential, commercial, and industrial outdoor lights also contribute significantly to light pollution. Unshielded light fixtures emit more than 50% of their light skyward or sideways. In many instances, only 40% of the light emitted actually illuminates the ground.



It is estimated that nearly 30% of outdoor lighting is wasted due to this poor design. In the United States alone, wasted lighting accounts for 1.7 million tons of carbon dioxide and \$2.2 billion in wasted electricity each year

Light pollution is a side effect of industrial civilization. Its sources include building exterior and interior lighting, advertising, commercial properties, offices, factories, streetlights, and illuminated sporting venues.

The fact is that much outdoor lighting used at night is inefficient, overly bright, poorly targeted, improperly shielded, and, in many cases, completely unnecessary. This light, and the electricity used to create it, is being wasted by spilling it into the sky, rather than focusing it on to the actual objects and areas that people want illuminated.



The infographic above illustrates the different components of light pollution and what “good” lighting looks like. (Image by Anezka Gocova, in “The Night Issue”, Alternatives Journal 39:5 (2013). Click to enlarge.

Source: <https://www.delmarfans.com/educate/basics/lighting-pollution/>

## EFFECTS OF LIGHT POLLUTION

Luminous pollution has dire effects on our environment and resources of energy as well as wildlife ecology and astronomical research. Light pollution also affects the quality of life and safety of humans. Here are some of known side effects of light pollution.

### Environment

The [International Dark-Sky Association](#) (IDA), a non-profit organization that raises awareness of light pollution, estimates that excessive nighttime lighting releases more than 12 million tons of carbon dioxide, the most serious greenhouse gas, into the atmosphere each year. It would take nearly 702 million trees to absorb the carbon dioxide produced by wasted light.

Light pollution may also contribute to other forms of pollution. According to a 2010 study by the National Oceanic and Atmospheric Association, photopollution increases air pollution by suppressing a naturally occurring radical that cleans the air at night. Nitrate radical, a form of nitrogen oxide, breaks down vehicle and factory emissions at night. The nightly process prevents the emissions from becoming smog, ozone pollution, or other harmful irritants. The process only takes place at night because sunlight destroys nitrate radical. However, artificial lights from buildings, cars, and streetlights, although 10,000 times dimmer than sunlight, also affect nitrate radical and slow down the cleansing process by 7%. Artificial light also increase the chemicals for ozone pollution by 5%.

### Energy

Wasted light results in energy waste. A 2007 IDA study estimated that 30% of all light emitted by public outdoor light fixtures is wasted, which amounts to 22 Terawatt Hours (TWh)/year of wasted electrical energy. This is equivalent to the following:

About **3.6 million tons of coal** per year

About **12.9 million barrels of oil** per year

The total amount of wasted electrical energy each year is enough to illuminate over **11 million homes** and power over **777,000 cars**.

### Wildlife

Luminous pollution affects the feeding, sleeping, mating, and migration cycles of all wildlife. Wildlife can also experience disorientation of time when there is too much artificial light at night.

**Mammals** - Mammals such as bats, raccoons, coyotes, deer, and moose can experience difficulty foraging for food at night due to over illumination. They risk exposure to natural predators and increased mortality due to night vision impairment. They also experience a decline in reproduction that leads to a shrinking population.

**Birds** - Birds such as owls and nighthawks use moonlight and starlight to hunt and migrate at night. Artificial lights sources can overwhelm natural light sources, causing birds to be drawn to or fixated on the artificial lights. This results in birds deviating from their intended migration route, flying until they experience exhaustion and collapse, and becoming prey to other animals. Marine birds such as albatrosses are known to collide with lighthouses, wind turbines, and drilling platforms at sea due to their bright lights. In North America alone, 100 million birds die annually in collisions with illuminated buildings and towers.

**Amphibians** - Sky glow affects amphibians such as frogs, toads, and salamanders in marshes and wetlands. The orange haze confuses and disorients them, which causes a decrease in feeding and mating. It also impairs natural instincts that protect amphibians against natural predators and the elements.

**Reptiles** - Reptiles such as sea turtles are greatly affected by light pollution. Female turtles nest on dark, remote beaches, but bright coastal lights prevent them from finding safe nesting areas for their eggs. This leads the female turtles depositing their eggs in an unsafe area or the ocean. Sea turtle hatchlings instinctively crawl toward the brightest part on the beach, which for many centuries was the moonlight and starlit ocean; however, excessive lighting on the beach or near the shore confuses the hatchlings and causes them wander away from the ocean. The hatchlings may be eaten by predators, run over by vehicles, drown in swimming pools, or die from dehydration or exhaustion. Artificial lights may also disorient other nocturnal reptiles.

**Insects** - Insects such as moths are naturally attracted to light and may use all their energy to stay near a source of light. This interferes with mating and migration as well as makes them vulnerable to natural predators, which reduces their population. This also affects all species that rely on insects for food or pollination.

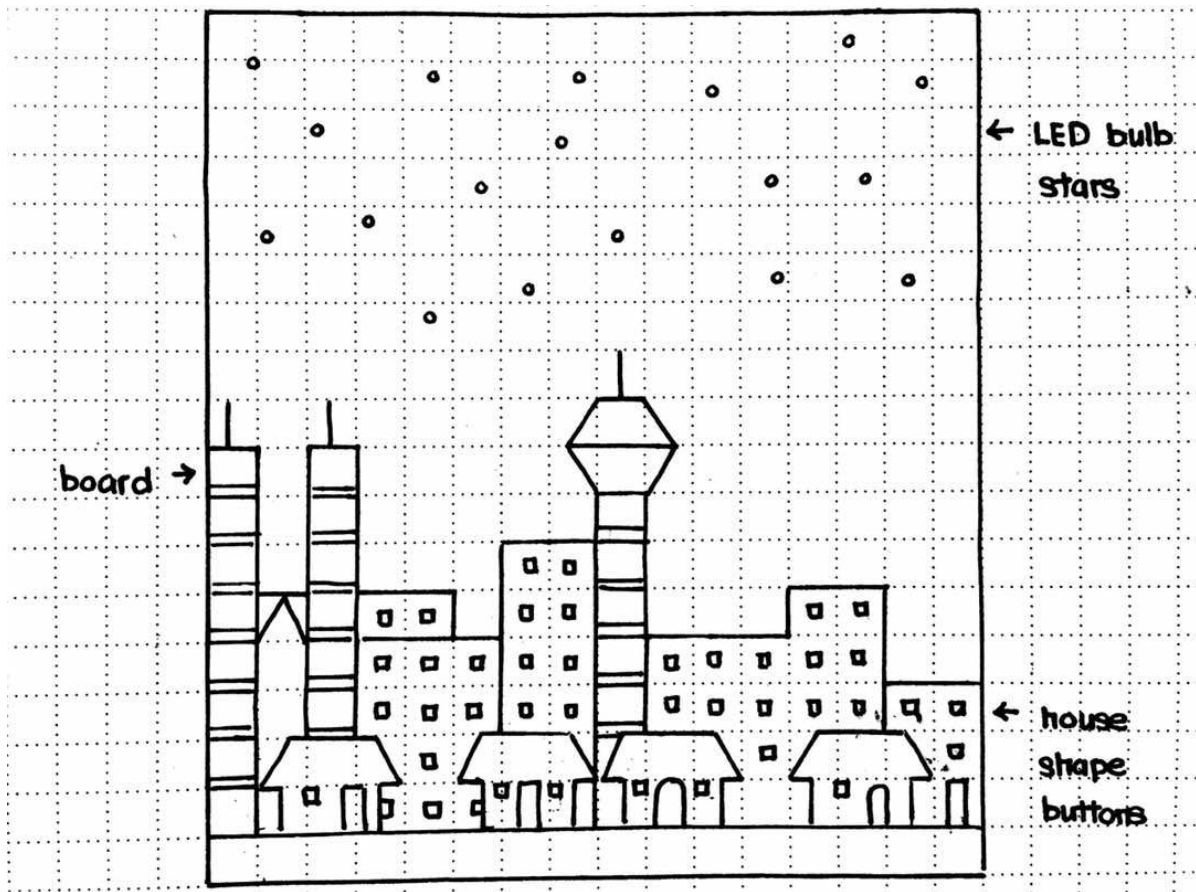
Source: <https://www.delmarfans.com/educate/basics/lighting-pollution/>

# MESSAGE / AWARENESS

In cities, it's hard to see stars because of light pollution, by turning off unused lights, we can save energy and also reduce light pollution.

## HOW IT WORKS

1. There will be buildings at the bottom part of the setting with lights on at the windows (buttons).
2. By pressing on the windows, the lights will go out while a LED bulb on sky(star) will light up.







**REFERENCE**



**MERYL LEE**



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# IDEA 1 : RECYCLING BOTTLES

Goal Achieved : RESPONSIBLE CONSUMPTION AND PRODUCTION (12)

NO POVERTY (1)

# MESSAGE / AWARENESS

Start recycling and make a difference even if its small.


# Recycling for Earth and cash

**METRO NEWS**

Wednesday, 2 Dec 2015



By **Grace Chen**

 A woman sorting different types of paper at a paper-packing factory in Taman Bukit Maluri Industrial Park. -Photos by Grace Chen

A woman sorting different types of paper at a paper-packing factory in Taman Bukit Maluri Industrial Park. -Photos by Grace Chen

THERE IS money to be made in recycling, but most people who do it are not motivated by ringgit and sen.

Singer and actress Sasha Saidin for example declined to accept money from a recycling centre near Pandan Indah for 6kg of used cans, boxes and plastic bottles.

She said it was not about the money.

“It’s about saving the Earth for the future of our children,” said Sasha.

Recycling was ingrained into the actress and singer by her mother.

 Sia Siew Chin of Beautiful Gate found a way to generate cash for her operations by collecting and selling trash.

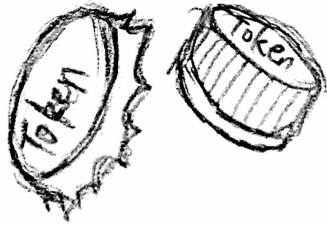
Sia found a way to generate cash for her foundation’s operations by collecting and selling trash.

“We always used to separate rubbish at home. It has become part of our lifestyle,” said Sasha who recalled that one part of their home was reserved for storing recyclables like plastic bottles, milk boxes, cans and glass.

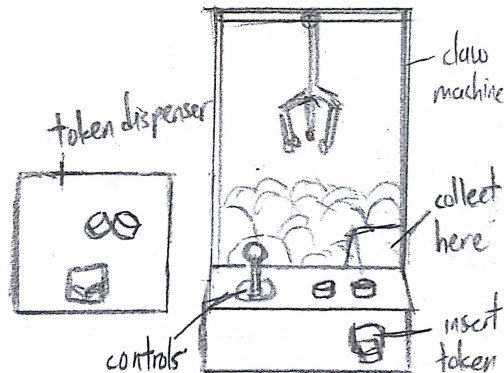
# HOW IT WORKS

Tokens

bottle caps



Front view claw machine



1. Recycle in objects that can be recycle like plastic bottles, tin cans, plastic bags, paper, plastic objects , to get a bottle cap which is the token for the machine.
2. One bottle cap to play once. The user use the controls to move the claw and collect the pouch
3. When the user successfully drop the pouch in a congratulation message and a random message like a fortune cookie will show on screen. A small wooden come out as a token of appreciation.
4. The objects the people give are then sold for money to NGO or a recycling centres.
5. The money is then give to the people who needed.





REFERENCE

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# IDEA 1 : PURIFY WATER

Goal Achieved : RESPONSIBLE CONSUMPTION AND PRODUCTION (12)



# STOP TAKING WATER FOR GRANTED AND KNOW WHAT YOU'RE DRINKING

    October 5, 2015 By: Ela Harrison

 580

Did you know that in parts of Alaska, North Dakota, Washington and Pennsylvania, tap water is carried in wooden pipes? These are hundred-year-old municipal plumbing systems, and there are many iron pipe systems of similar age, too. Miles and miles of underground piping is necessary to carry water from its source to a treatment facility, where it is cleansed of harmful bacteria and other toxins either by chlorination or ultraviolet light, and from there to all the homes and businesses where people expect to open a faucet and have safe, clean water flow out. Those pipes have a finite lifespan. Replacing underground pipes is not a small deal. We are currently right around pipe-replacement time for many municipal water systems, and it's not yet clear how this is going to be managed.

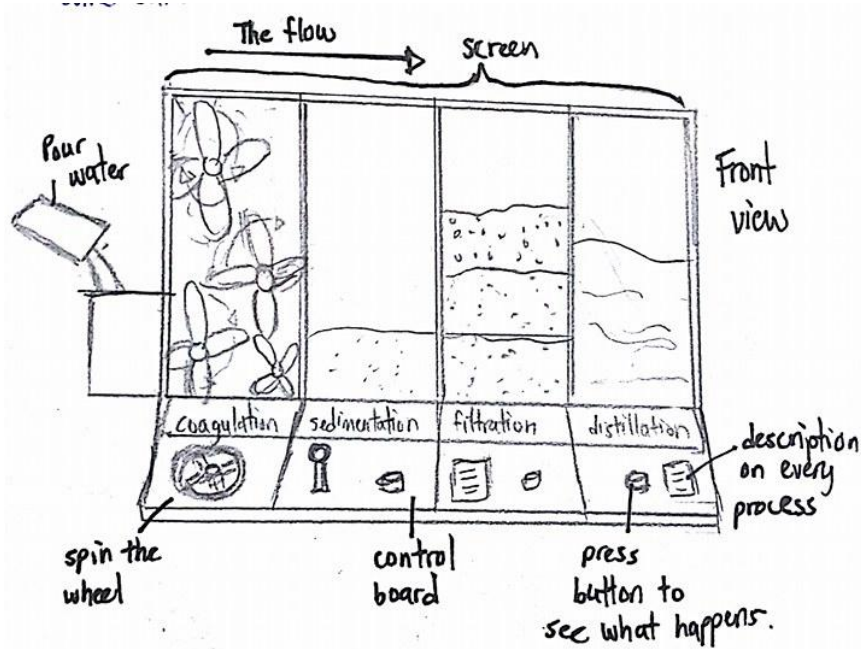
When you've spent your entire life with water available to you simply by opening a faucet, it's easy to take it for granted. So much so that even as a 4- or 5-year-old I remember disbelieving the part in *The Tiger Who Came to Tea* where the tiger "drank all the water in the tap." Even at that age I had an understanding that "the tap" wasn't merely a reservoir containing a finite amount of water, but opened up on water that just kept coming. On the other hand, in Israel in the summers we were only allowed a very small amount of water for baths or dishwashing, so I also learned that in hotter countries, where it rained less, the supply might be less than infinite.

Source :<https://well.org/environmental/know-what-youre-drinking/>

# MESSAGE / AWARENESS

Showing the steps of purifying water and the hard work in. Maintaining the quality of it.

# HOW IT WORKS



1. The user pour water in the beginning.
2. Use the wheel and buttons to interact showing how the process of purification.
3. When the user finish with the first stage the next stage will lit up and continue on to the next stage.
4. When completed all the whole screen will light up and at the end will see a message.



**WINNIE YONG**



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# IDEA 1 : RECYCLE TO HELP

Goal Achieved : RESPONSIBLE CONSUMPTION AND PRODUCTION (12)

NO POVERTY (1)

ZERO HUNGER (2)

QUALITY EDUCATION (4)



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## 'Malaysia ranks 8th among nations that mismanage waste'

📅 April 28, 2018, Saturday 📍 Marilyn Ten, reporters@theborneopost.com

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## PROBLEM

Plastic waste have not been recycled properly

SOURCE :

<http://www.theborneopost.com/2018/04/28/malaysia-ranks-8th-among-nations-that-mismanage-waste/>



Dr Melvin Gumal

KUCHING: Malaysia may become one of the top polluting countries if it continues to neglect its waste management.

Wildlife Conservation Society (WCS) Malaysia director Dr Melvin Gumal said based on researches, the country currently ranks eighth in the world for mismanaged plastic waste.

China, Indonesia and the Philippines are the top three polluting countries.

"Malaysia's ranking in the top 10 of being worst in the world for plastic waste (management) is due to us being affluent. We have this 'throw-away' mentality in society and we do it all the time," he said during a talk on 'Plastics, Sharks, Rays, Turtles and You', conducted in conjunction with the launch of Sarawak Energy Bhd's 'Zero Polystyrene, Reduce Single-Use Plastic' campaign at Menara Sarawak Energy here yesterday.

Melvin also pointed out that mismanaged plastic waste comprising waste that had not been recycled or properly



## RECYCLE KIOSK FOUND IN MALAYSIA

Most of the kiosk encourages to recycle with a trade of money or items that benefits

But, why not give it to people who really needs it?

For exp : Orphans, Beggars etc

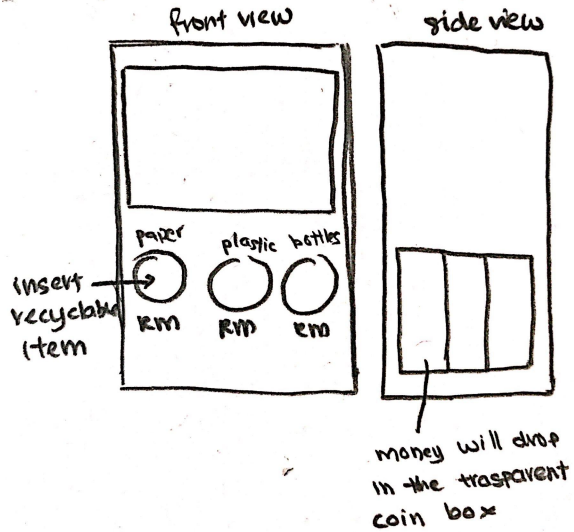
# MESSAGE / AWARENESS

Malaysia is known as the eight worst country for plastic waste. The idea is to use the plastic waste to recycle to help the one that needs

The conclusion is to allow donors to know that everytime they recycle, they are able to help the one that needs even if it is little by little.



# HOW IT WORKS



1. Insert recyclable item in the kiosk
2. Choose which category the would need to help
3. Once selection is done, the money will drop in the specific transparent donation box

# GOAL

To encourage shoppers to recycle the recyclable item and at the same time is to let them know that their action is helping the needed.

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# IDEA 2 : KNOW YOUR HEALTH

Goal Achieved : GOOD HEALTH (3)

By **Farezza Hanum Rashid** - June 7, 2017 @ 10:33am

MALAYSIA has the dubious honour of having the highest obesity prevalence in Southeast Asia. This was based on Economist Intelligence Unit's "Tackling Obesity in Asean" report, which covered Malaysia, Singapore, Indonesia, Thailand, the Philippines and Vietnam. The report said in Malaysia, the prevalence of obesity was at 13.3 per cent, while overweight was at 38.5 per cent. The Asia Roundtable on Food Innovation for Improved Nutrition (Arofiin) secretariat Bruno Kistner, who presented the report yesterday, said last year, the condition had cost the country between RM4.26 billion and RM8.53 billion. "That is equivalent to 10 to 19 per cent of Malaysia's healthcare spending." Malaysia had the largest number of productive years lost because of obesity among females, which was between seven and 12 years, and the second highest among males at between six and 11 years. "The report showed that only a third of Malaysian adults had ever exercised, while only 14 per cent exercised adequately. "There are factors like Malaysians' love for food and their strong culture of entertaining guests with food that contributed to the obesity problem." Nutrition Society of Malaysia's president Dr Tee E. Siong, who was present yesterday, said the emphasis on academic excellence had resulted in additional tuition hours and academic work among children, to the detriment of physical activities. "More critically, Malaysians view obesity as a cosmetic issue rather than a health issue." The report showed that obesity rates varied depending on ethnicity, genetic, regional and economic differences. "It underscores the need for carefully tailored obesity prevention strategies, rather than a one-size-fits-all approach. "Stakeholders and policymakers need to identify at-risk communities to develop smarter policies and more targeted interventions."

## PROBLEM

Malaysian view obesity as a cosmetic issue rather than a health issue

SOURCE : <https://www.nst.com.my/news/nation/2017/06/246538/malaysians-most-obese-region>

### RECOMMENDED

Seven senior ATM officers face ab of power allegation

Former bank officer charged with RM1.2 million CBT

Malaysia cheapest place in the wo to employ expats - survey

Watch: Men rob goldsmith shop at mall as shoppers watch in horror

Modi to make brief stopover to me Dr M in Malaysia on May 31

Boosting cottage businesses at Malaysia airports

Malaysia to surpass 100 million passenger mark for the first time year: MAVCOM

Goalkeeper Karius gets death thre after Liverpool football debacle

Man sent to the gallows for killing home intruder (NSTTV)

Revolutions in multimedia design

# HOW TO KNOW IF A PERSON IS OBESE ?

The easiest and fastest way is by using BMI (Body Mass Index)

## Measuring Obesity

### From Calipers to CAT Scans, Ten Ways to Tell Whether a Body Is Fat or Lean

What's the best way to determine whether a body is fat or fit? Body fat can be measured in several ways, with each body fat assessment method having pros and cons.

- The most basic method, and the most common, is the body mass index (BMI). Doctors can easily calculate BMI from the heights and weights they gather at each checkup; BMI tables and online calculators also make it easy for individuals to determine their own BMIs.
- The BMI and other so-called “field methods”—among them, waist circumference, waist-to-hip ratio, skinfold thicknesses, and bioelectrical impedance—are useful in clinics and community settings, as well as in large research studies.
- More sophisticated methods, such as magnetic resonance imaging or dual energy X-ray absorptiometry, are so-called “reference measurements”—techniques that are typically only used in research studies to confirm the accuracy of (or as scientists say, to “validate”) body measurement techniques.
- Several methods can't be used in children or pregnant women, due to safety concerns, or are less accurate in people who are very overweight. (1)

Here is a brief overview of some of the most popular methods for measuring body fat—from basic body measurements to high-tech body scans—along with their strengths and limitations. (Adapted from (1))



# MESSAGE / AWARENESS

From the research, many obese were aged from 6 to 12 years old.

This project is to let kids understand how obesity can affect their health and also let them to know their current BMI

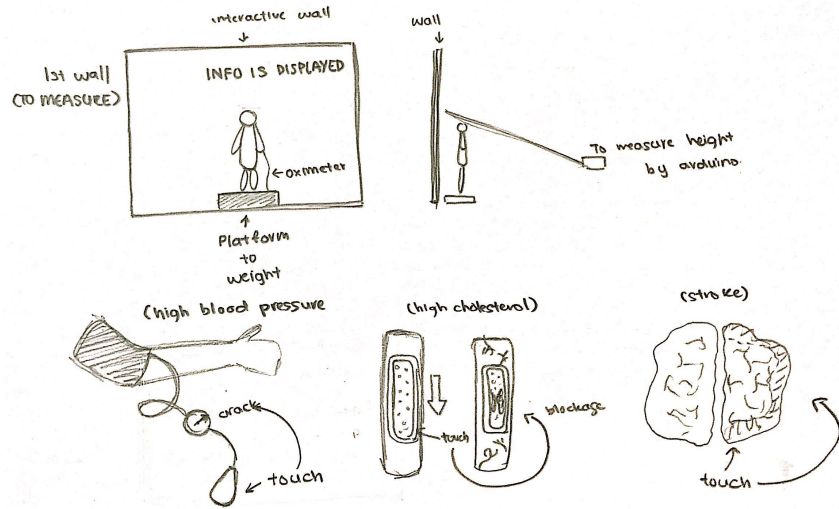


+



Allow user to know their info and at the same time, they can know more about obesity

# HOW IT WORKS



1. Users will need to stand on a platform in order to get to know its weight. And Pulse Oximeter is needed to be attached to the user's finger to check the heartbeat
2. The screen will display the user's height and weight at the same time.
3. The calculation of BMI will start and the heartbeat rate will be displayed on the screen.
4. To understand how obesity can affect one, the user can move on to another screen and interact to get more details



# GOALS

To allow kids from aged 6 to 12 years old understand their own health better and also to let them know the cons of being obesity.



**KRAVEN**



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# IDEA 1 : Cymatics

Goal Achieved : SUSTAINABLE CITIES & COMMUNITIES (11)

# MESSAGE / AWARENESS

People nowadays are staying or growing up in urban areas, The sound pollution in urban areas were sky high in compare to rural areas. The awareness is to educate people the beauty of peace & natural sounds through Cymatics art.

# Drowning out the noise

NATION

Sunday, 31 Jul 2016



By Christina Chin



**With the country racing towards developed status, noise pollution is the price Malaysians are paying for urban development.**

WITH development, comes noise. And noise, explains Prof Dr M. Salman Leong, is as widespread as it is a diffusive and pervasive phenomenon.

Ultimately, it is the price and consequence of progress, says the director of Universiti Teknologi Malaysia's (UTM) Institute of Noise and Vibration.

"Noise is a recognised pollution source and an accepted consequence of big projects. Two or three decades ago, people were more tolerant but with technology and exposure to higher noise control standards overseas, Malaysians now expect a better quality of life, sonically speaking."

The institute is looking at how noise and vibration from construction impact sensitive receptors like houses, schools, hospitals and residential areas.

# Health issue affected by Noise & Sound Pollution

Noise levels from road traffic that are greater than 55 dB  $L_{den}$  affect an estimated **125 million people** – **one in four Europeans**.



 **> 55dB  $L_{den}$**



## Annoyance



**20 000 000**

Almost 20 million Europeans are annoyed by environmental noise.

## Sleep disturbance



**8 000 000**

At least 8 million Europeans suffer sleep disturbance due to environmental noise.

## Health impacts



**43 000**

Noise pollution causes 43 000 hospital admissions in Europe per year.

## Premature deaths



**10 000**

Noise pollution causes hypertension and cardiovascular disease, leading to an estimated 10 000 premature deaths annually in Europe.

## BECAUSE SOUND POLLUTIONS

What will sound pollution affect our health?



Increase Stress | Insomnia | Temporary Hearing Loss | High Blood Pressure | Damage Psychological Health

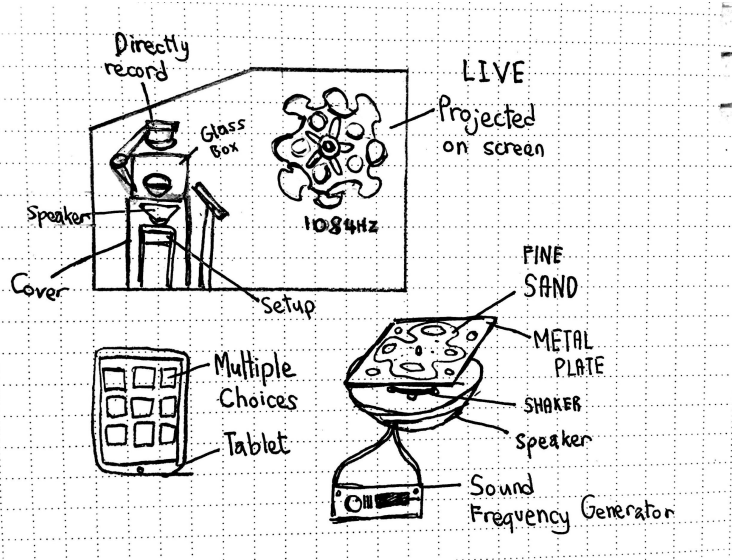
## IDEA



- The Idea is to create an awareness interactive device by combining art, sound & physics
- User will be able to choose a variety of choices; each choices represent things that generate sounds
- Every choices user choose will build up the final result of the pollutions
- If the pollutions were too high, the sand will not create beautiful visuals
- Cymatic sand visual will projected on projector screen

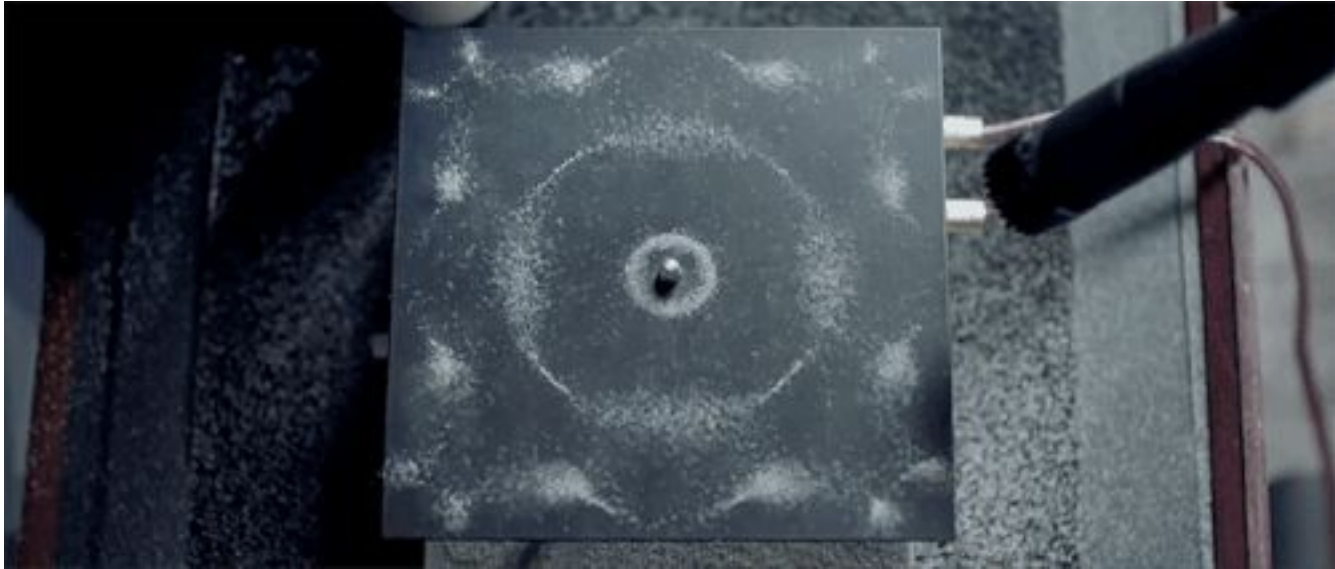


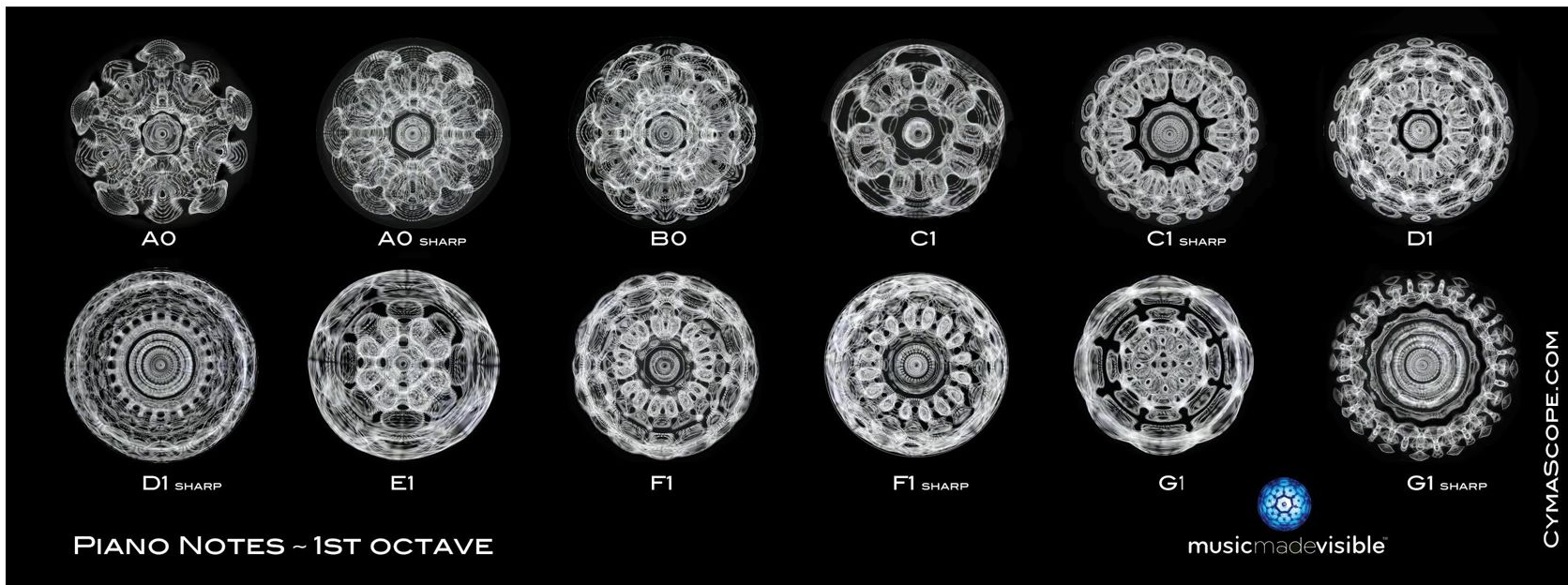
# HOW IT WORKS



- I. The idea is to create an awareness interface device by combining art, sound & physics.
- II. User will be able to choose a variety of choices, each choices represent things that generate sounds
- III. Every choices user choose will build up the final result of the pollutions
- IV. If the pollutions are too high, the sand will not create beautiful visuals
- V. The sand visuals will projected live on wall of the installation

What is Cymatics?





Variety of Patterns will generate on the chladni board because of different frequency based on the final result user choose

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# IDEA 2 : Slice for Hunger

Goal Achieved : Zero Hunger ( Goal 2 )

# MORE THAN 18,000 MSIAN UNI STUDENTS ARE STARVING, BUT... WHY?!

CASEY LEE — 29/02/2016

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Image from Flickr user fshraga (Creative Commons)

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So you might have heard of **some horror stories that are happening in our public universities lately.**



f t search site

## The Blog

You are here: Home > The Blog > The Blog > Global Poverty > Fighting to Overcome Hunger in Malaysia

06  
MAY  
2017

### Fighting to Overcome Hunger in Malaysia



Malaysia, a country located in Southeast Asia, has one of many populations facing extreme rates of **poverty**. The issue of hunger in Malaysia has been prevalent throughout the past few decades. In 2011, 57 percent of children living in Southeast Asia were underweight.

Although the rates of hunger in Malaysia dropped from **29.6 percent to 17.6 percent** in 2013, the U.N. described this drop as inadequate for meeting the target of the Millennium Developmental Goals. In other words, the country needs a much greater turnaround if the target goals toward reducing hunger are to be accomplished.

The United Nations Children's Fund (**UNICEF**) has done ample research into the prevalence of hunger and poverty in Malaysia and the burdens that follow. It subsequently found that children who are malnourished face an increased risk of exhibiting cognitive and developmental disabilities at some point in the future.

#### TAKE ACTION

- Call Congress
- Email Congress
- Donate
- 30 Ways to Help
- Volunteer Ops
- Internships
- Stay Informed with E-Alerts



#### GET SMARTER

# MESSAGE / AWARENESS

The message is to show people, each donation people gave does to the people in need

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## HOW IT WORKS

Each bill will represent 1 slice of food



A vending machine like donation device

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- I. An idea is to create a vending machine like interactive device
- II. Each Ringgit note will trigger a slice of food on the plate
- III. Until the slices filled up the plate, a video will shown a person carry the plate away then new plate will be replace
- IV. For each Ringgit notes will donate to peoples in need



**NGOH JIN HENG**





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# IDEA 1 : UNITY IS STRENGTH

Goal Achieved : CLIMATE ACTION (13)

# MESSAGE / AWARENESS

For people to understand that it requires everyone's effort to save the Earth together.

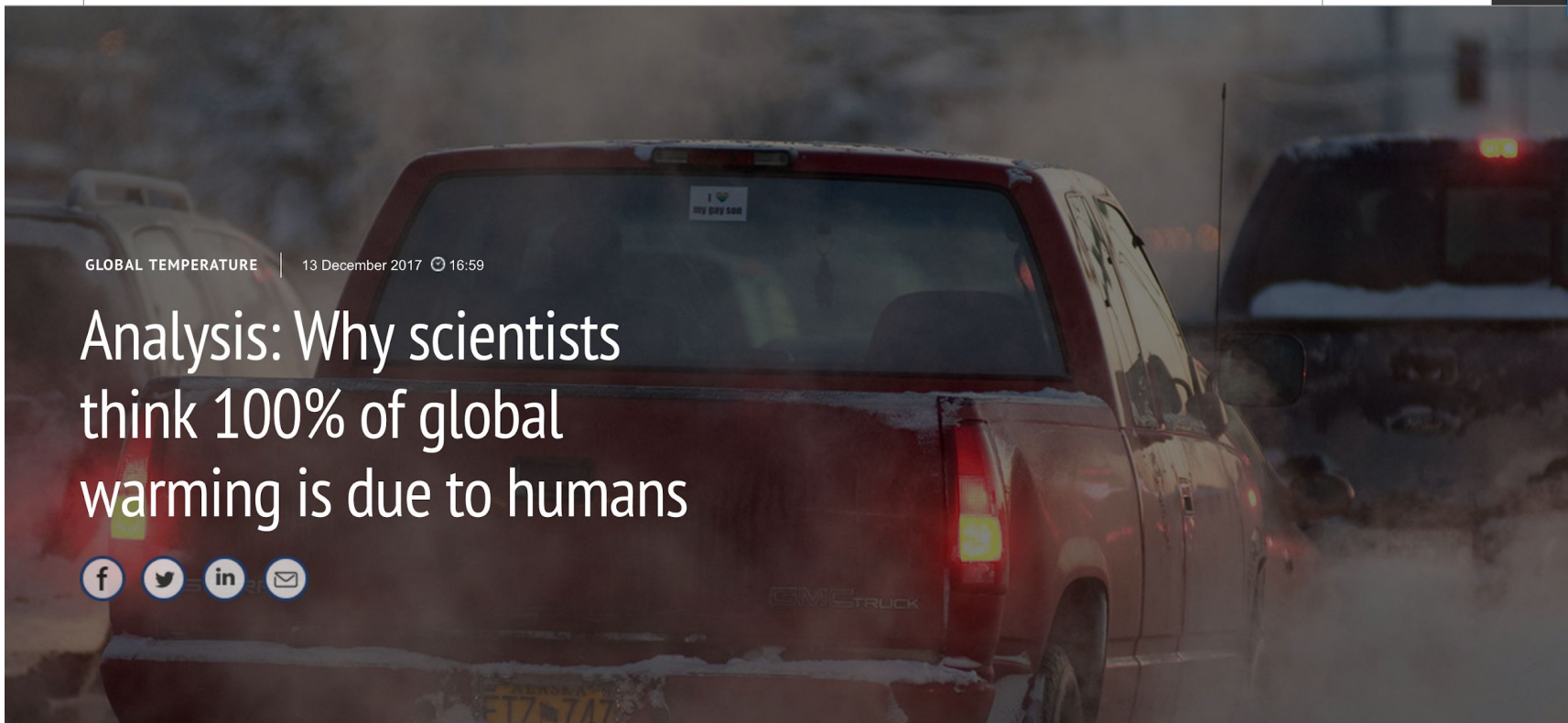
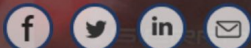


# CLIMATE ACTION



GLOBAL TEMPERATURE | 13 December 2017 © 16:59

# Analysis: Why scientists think 100% of global warming is due to humans





### 3. Are human activities causing climate change?

#### Human activities have increased greenhouse gas concentrations in the atmosphere

Atmospheric concentrations of carbon dioxide (CO<sub>2</sub>), methane and nitrous oxide began to rise around two hundred years ago, after changing little since the end of the last ice age thousands of years earlier. The concentration of CO<sub>2</sub> has increased from 280 parts per million (ppm) before 1800, to 396 ppm in 2013. This history of greenhouse gas concentrations has been established by a combination of modern measurements and analysis of ancient air bubbles in polar ice ([Box 2.1](#)).

Particularly important is CO<sub>2</sub>. Enormous amounts of it are continually exchanged between the atmosphere, land and oceans, as land and marine plants grow, die and decay, and as carbon-rich waters circulate in the ocean. For several thousand years until around 200 years ago, this 'carbon cycle' was approximately in balance and steady. Since the 19th century, human-induced CO<sub>2</sub> emissions from fossil fuel combustion, cement manufacture and deforestation have disturbed the balance, adding CO<sub>2</sub> to the atmosphere faster than it can be taken up by the land biosphere and the oceans (Figures 3.1 and 3.2). On average over the last 50 years, about 25% of total CO<sub>2</sub> emissions were absorbed by the ocean making sea water more acidic and 30% was taken up on land, largely by increased plant growth stimulated by rising atmospheric CO<sub>2</sub>, increased nutrient availability, and responses to warming and rainfall changes (though the mix of these mechanisms remains unclear). The other 45% of emissions accumulated in the atmosphere. These changes to the carbon cycle are known from measurements in the atmosphere, on land and in the ocean, and from modelling studies.



*Southern approach to the Sydney Harbour Bridge, NSW. Photo: @iStockphoto.com/airspeed*

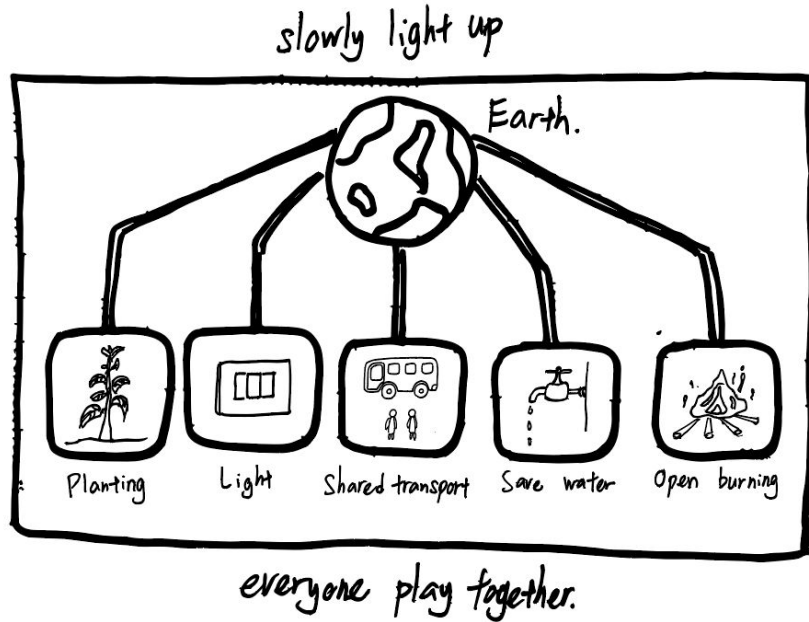
# **GOAL**

Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

# IDEA



## HOW IT WORKS



1. 5 different situations on the board to represent the problem.
2. Each of them required one user to solve the problem.
3. Once all the puzzle is solved, it will connect to the Earth on top, and the Earth will light up slowly.



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# IDEA 2 : WATER FILTER SYSTEM

Goal Achieved : CLEAN WATER AND SANITATION (6)

# MESSAGE / AWARENESS

For people to understand how is the traditional way to filter the water, and a safe drink water is not easy to get for some of the people in the world.

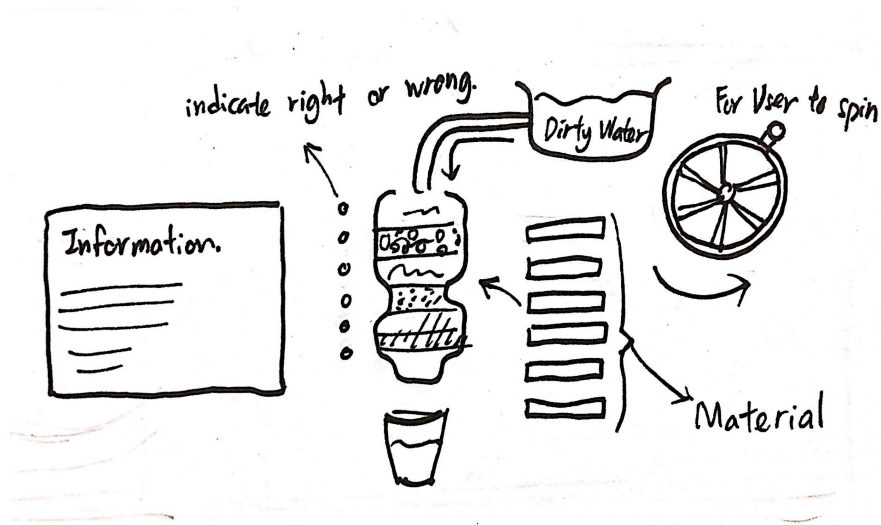
**Where the clean water come from ?**



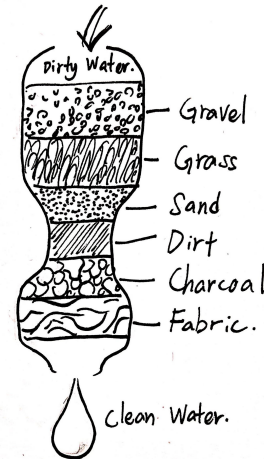
# TRADITIONAL WATER FILTER SYSTEM



# HOW IT WORKS



1. User need to match the material of the water filter system.
2. After finish the puzzle, user need to spin the wheel to start purify the water.
3. User will able to see the process of how it work. And how the material help to purify the water.





**WINNIE &  
KRAVEN**



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# IDEA 1 : STOP POVERTY

Goal Achieved : NO POVERTY (1)

ZERO HUNGER (2)

QUALITY EDUCATION (4)

# Do not give used clothes and second-hand goods to the less fortunate

## COMMUNITY

Saturday, 18 Oct 2014



By Melizarani T.Selva



Raring to go: The ROLF Riders will form a convoy to meet the children from the orphanages during the upcoming ROLF Sports Day. - Photo by SAMUEL ONG

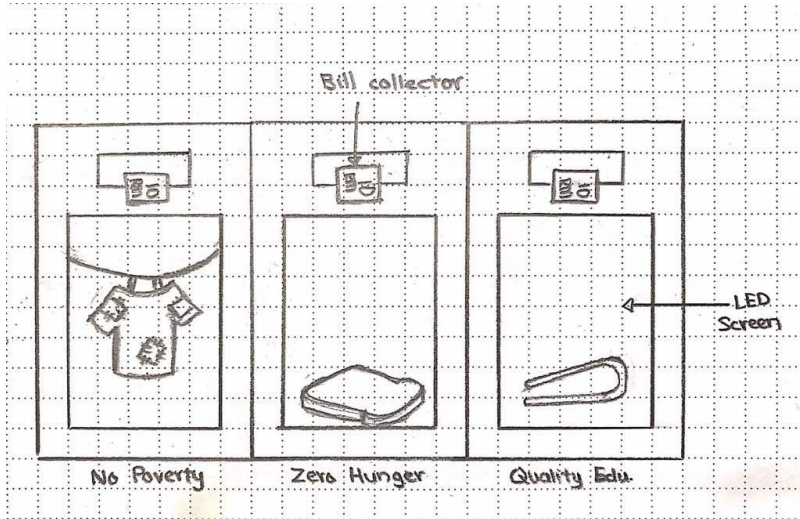
DO NOT give used clothes and second-hand goods to the less fortunate, Rainbow of Life Forces (ROLF), a non-governmental organisation (NGO) in aid of underprivileged children said.



# MESSAGE / AWARENESS

Most of the people will donate used item but what really helps them is money. At the same time the idea is to let donors know which organisation will be in charge of taking care of the donation

# HOW IT WORKS



1. Donors will get to choose the specific category they want to donate in order to help.
2. When each ringgit is donated, it can show how much you can help the one that needs