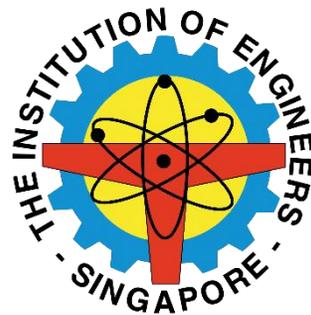


**AFEO Mid Term, Singapore**  
16 – 18 July 2017

# **The Institution of Engineers, Singapore**

**Education & Capacity Building Working Group**

17 July 2017



# Engineers Progression Pathway

IES partnered National Trades Union Congress (NTUC) U Associate to launch the national Engineers Progression Pathway to help both young and senior engineers move up the career ladder by equipping them with the necessary leadership skills, expertise in technology management, and making them future ready.

**Young Engineers Leadership (YEL) Programme**

**Advanced Engineers Leadership (AEL) Programme**

## *Young Engineers Leadership (YEL) Programme*

- ❖ Aims to strengthen young engineers' competencies in the areas of technology management, leadership and soft skills.
- ❖ 1 day industry learning journey and 7 units of 1-day modules, taught by industry experts and C-suite speakers
- ❖ The 3<sup>rd</sup> YELP run concluded in May 2017; 456 engineers in total have benefited from the YEL Programme.



## *Advanced Engineers Leadership (AEL) Programme*

- ❖ Launched on 25 April 2016 (Guest-of-Honour: Mr Chan Chun Sing, Secretary-General, NTUC)
- ❖ Aims to develop senior engineers in middle management to acquire advanced future-ready technology management and leadership competencies. Prepare them for higher responsibilities and roles in their respective organisations and to build their engineering careers.
- ❖ First run began 10 August 2016 with 24 participants - Small class size to encourage more input and interaction.
- ❖ Participants officially graduated from AELP on 16 January 2017.
- ❖ Next intake will commence on 31 August 2017



AELP Graduation Ceremony on 16 January 2017 with Mr. Chan Chun Sing



# I am a Young Engineers Badge

- A collaboration with Science Centre to raise our younger generations' interest in engineering.
- Currently in the implementation stage, target to launch by December 2017
- Target group: Primary 3 – 6 students (8 – 12 years old)
- Comprises of a series of self-directed activities in various engineering disciplines where students will carry out the activities to earn enough stars to be certified a Young Engineer.
- Develops knowledge and skills, and encourages initiative and creativity.
- Students who complete the badge will be awarded a certificate and a badge pin.

# Examples

## I AM A YOUNG SCIENTIST

**RECORD CARD FOR YOUNG ENVIRONMENTALIST**

The objectives of this card are to stimulate interest in science through activities, enable you to carry out self-directed activities in various disciplines of science, and to provide opportunities for you to take initiative and be creative in your presentation and communication of learning.

**INSTRUCTIONS:**

1. Try to carry out the activities by yourself. You may seek advice from your parents or teachers, but you are encouraged to take pride in conducting the activities independently, as the activities are designed for your self-learning.
2. Submit your completed works to your teacher for certification. Your parents may certify up to 6 stars worth of activities.
3. Complete at least 15 stars to qualify for the award and submit your card to your school teacher. Your teacher will then submit to a designated collection centre on your behalf.

**LIST OF ACTIVITY CARDS**

- I am a Young Astronomer
- I am a Young Botanist
- I am a Young Chemist
- I am a Young Ecologist
- I am a Young Energy Saver
- I am a Young Entomologist
- I am a Young Environmentalist
- I am a Young Food Scientist
- I am a Young Geneticist
- I am a Young Geologist
- I am a Young IT WHIZ
- I am a Young Mathematician
- I am a Young Meteorologist
- I am a Young Ornithologist
- I am a Young Physicist
- I am a Young Water Ambassador
- I am a Young Zoologist

www.science.edu.sg

SCIENCE TEACHERS ASSOCIATION OF SINGAPORE SAAS

Name: \_\_\_\_\_ Class: \_\_\_\_\_ School: \_\_\_\_\_

Young Scientist Badge Activity Card (Front)

## "I AM A YOUNG ENVIRONMENTALIST" BADGE

Earn 15 stars ★

No.	Task	Star	Teacher's / Parent's signature and date on completion of activity.
1.	State 4 materials that can be recycled.	★	
2.	List 2 benefits of the Marina Barrage.	★	
3.	Take a picture of a recycling bin found in your community.	★	
4.	Describe how fires from our neighbouring countries affect our weather.	★	
5.	Describe what you have done to reduce, reuse and recycle some items at home.	★	
6.	Use a song and change the lyrics to reflect what one can do to keep the environment clean.	★★	
7.	Find out about an environmental issue (e.g. global warming, climate change, soil erosion, deforestation, and haze). Write a short article on the issue in about 300 words.	★★	
8.	Name 3 main sources of noise pollution in your neighbourhood. Explain how each of them could be reduced.	★★	
9.	Name 3 pests that feed on food wastes that are not properly disposed of. Why are these pests dangerous to man?	★★	
10.	Visit the website: <a href="http://app2.nea.gov.sg/topics_air.aspx">http://app2.nea.gov.sg/topics_air.aspx</a> to find out two main sources of air pollution and write briefly on what actions you can take to reduce these types of pollution.	★★	
11.	Visit the website: <a href="http://app2.nea.gov.sg/wastemanagement/infrastructure.aspx">http://app2.nea.gov.sg/wastemanagement/infrastructure.aspx</a> to find out what happens to the household refuse after it has been thrown into the refuse bin or down the chute. Illustrate it in the form of flow chart / drawings / pictures.	★★	
12.	Visit the website: <a href="http://app2.nea.gov.sg/topics_recyclingprog.aspx">http://app2.nea.gov.sg/topics_recyclingprog.aspx</a> to find out what happens to the recyclables after they are collected from the recycling bins. Illustrate it in the form of flow chart / drawings / pictures.	★★	
13.	Find out more about the SELF Programme by visiting this website: <a href="http://app2.nea.gov.sg/litter_free_campaign_litter_free_school.aspx">http://app2.nea.gov.sg/litter_free_campaign_litter_free_school.aspx</a> . Share how you have set an example in keeping the school and the surroundings clean by posting your picture on your class notice board.	★★	
14.	Visit the website: <a href="http://climatechange.sg/html/">http://climatechange.sg/html/</a> to use the carbon calculator to access an interactive assessment of your household carbon footprint. Print out the generated report of the summary and recommendations that can help to improve your energy efficiency and reduce your greenhouse gas emissions in the household.	★★	
15.	How does the breeding of mosquitoes in your home / community affect you and your family? Inspect your home / community and describe / illustrate how you have removed at least 3 potential breeding places in your home / community.	★★	
16.	Conduct a survey on 20 classmates / neighbours to find out whether they participate in the National Recycling Programme (NRP) carried out by the Public Waste Collectors (PWCs). Present their reasons for participating or not participating in the campaign in 2 graphs.	★★★	
17.	Conduct a simple survey on 30 classmates / schoolmates to find out their environmentally-friendly habits. Tabulate your data and present your results to your classmates.	★★★	
18.	Take at least 5 photographs of your home / school environment that show pollution or potential pollution problems. Do a show-and-tell to your classmates to explain how you can help to prevent / solve these problems (ask your teacher for permission to speak to the class).	★★★	
19.	Do a reflection on a learning journey that you have made on nature conservation or waste management.	★★★	
20.	Teacher may decide on this task.	★★★	

Date started: \_\_\_\_\_ Date completed: \_\_\_\_\_

Teacher's name: \_\_\_\_\_ School stamp: \_\_\_\_\_

Young Scientist Badge Activity Card (Back)



Badge Pins for the different cards

# Engineering Camp

- Another collaboration with Science Centre, the Engineering Camp is targeted at the lower secondary students (12 – 14 years old).
- 1 – 2 Days Themed Camp (currently in development stage)
- Target to launch during the coming December school holidays.
- Programs may include: hands-on projects, workshops, mentorship opportunities, industry excursions, competitions.
- Objective: To create the exposure that the students don't get on a daily basis, provide the opportunity to experience the different skill sets needed to be an engineer, enthusing the students' interest in engineering.

**Thank You**