National Environment Agency
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Resource Pack Guide

Topic: Dengue Prevention

Introduction:

The resource pack aims to equip educators with relevant information on dengue prevention in Singapore. You will learn about the dengue situation in Singapore, dengue fever and its symptoms, characteristics and life cycle of the *Aedes* mosquitoes. The deck also includes common indoor and outdoor mosquito breeding habitats to better educate students and their families on the potential breeding habitats to check and remain vigilant against dengue fever.

Section 1: Dengue Situation in Singapore

This section gives a brief background of dengue fever as an endemic disease in the region and describes the current dengue situation in Singapore. Teachers can visit the NEA website prior to the lesson to retrieve the latest information regarding number of dengue cases in Singapore and the dengue clusters areas.

Section 2: Dengue Fever & its Symptoms

Dengue fever is a viral infection that has similar symptoms to the common flu. There are 4 dengue serotypes and the 4 serotypes do not provide immunity against each other, i.e. a person can be infected with dengue fever of a different serotype strain even if he/ she has already gotten dengue fever before. Every subsequent reinfection can be more severe and can lead to dengue haemorrhagic fever.

Section 3: *Aedes* aegypti Mosquito – Characteristics & Life Cycle

This section lists the characteristics of the *Aedes aegypti* mosquito, and teachers should emphasise on the distinct black and white stripes on the body and legs to differentiate between the *Aedes aegypti* mosquito from the other mosquito species. Teachers should also remind students to look out for potential habitats with stagnant water which provides opportunities for mosquitos to breed. The life cycle of a mosquito is about 2 weeks, from the egg stage to the adult stage. In optimal conditions such as Singapore's hot and humid weather, the process is accelerated to about 7 – 10 days.

Section 4: Dengue Transmission Cycle

This section explains how dengue fever is transmitted from an infected human to the *Aedes aegypti* mosquito to another healthy human. *Aedes* aegypti mosquitos are the vectors responsible for dengue transmission. However, do note that they are not born with the dengue fever virus.

Section 5: Common Indoor & Outdoor Breeding Habitats of *Aedes* Mosquito

This section provides information with pictures on the common indoor and outdoor breeding habitats of the *Aedes* aegypti mosquito. Teachers should remind students to remove any stagnant water, where possible, or notify a teacher or student leader of any potential mosquito breeding sites in the school.

Section 6: National Dengue Prevention Campaign

This section explains the government efforts in urging people to practise the dengue prevention steps to eradicate mosquito breeding at its source – stagnant water. Everyone is encouraged to stop dengue with B-L-O-C-K steps. More information on dengue, dengue cases and clusters, areas with high mosquito populations are also readily available on social media platforms such as the Stop Dengue Facebook, NEA Dengue website (www.nea.gov.sg/dengue) and myEnv mobile application. In the community, dengue cluster banners are placed in cluster areas to alert residents and urge them to do the B-L-O-C-K steps.

Section 7: Conclusion

This section concludes the sharing on dengue prevention. Teachers may include key take-aways of the session or short quizzes to engage the students on dengue prevention.

Section 8: Additional Information

Sub-section: Project Wolbachia

Project Wolbachia is part of NEA's Environmental Health Institute's Vector Borne Diseases research programme to help suppress the *Aedes* aegypti mosquito population in Singapore and to further reduce the risk of dengue transmission. Teachers may visit NEA's website https://www.nea.gov.sg/corporate-functions/resources/research/vector-borne-diseases-research-programme to understand the *Wolbachia-Aedes* suppression technology.

Sub-section: Gravitrap

Gravitraps enable the capture of both *Aedes aegypti* female adult mosquitoes and their eggs, and also provide surveillance data on the mosquito population in different parts of Singapore. Teachers should remind the students to not to touch the Gravitraps which are placed in public areas at residential areas to avoid discrepancies of the data collected.

Sub-section: Dengue Prevention House Visits Guide

This section describes how dengue prevention house to house visits should be conducted in a safe and efficient manner, subjected to prevalent COVID_19 Safe Management Measures. Teachers should check nea.gov.sg/dengue-zika/dengue/dengue-clusters prior and select a non-dengue cluster area for

any outreach. Teachers and student leaders should plan the routes as well as brief all students and teachers involved on appropriate communication mannerism, encouraging residents to practise the mozzie wipe-out steps and to hand them the dengue prevention flyers for their information. Do also ensure all personnel involved apply insect repellent and be wary of their steps especially when navigating uneven or wet terrain.

Sub-section: Activity Ideas

This section lists the various activities that schools can conduct to raise awareness on dengue prevention and encourage students to adopt and promote the prevention steps. The list is not exhaustive, and schools may conduct other activities applicable to the school's context.

Sub-section: Educational Materials

This section shows the relevant educational posters, brochures, videos, relevant links on promoting dengue prevention. Schools may make use of these resources to conduct outreach activities. More resources can be found in the websites, applications, and social media accounts under the following sub-section, "Information Sources".

For more information, you may visit the sources indicated inside the resource pack or contact NEA for any clarifications.