

Water Properties and Mosquito Breeding Sites: A Student-Led Study in Walailak University

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Why we need to study mosquitoes?



Dengue Cases

Cases in Thailand 48,000 -
55,000 Cases



Chikungunya

Cases in Thailand
25,000 Cases

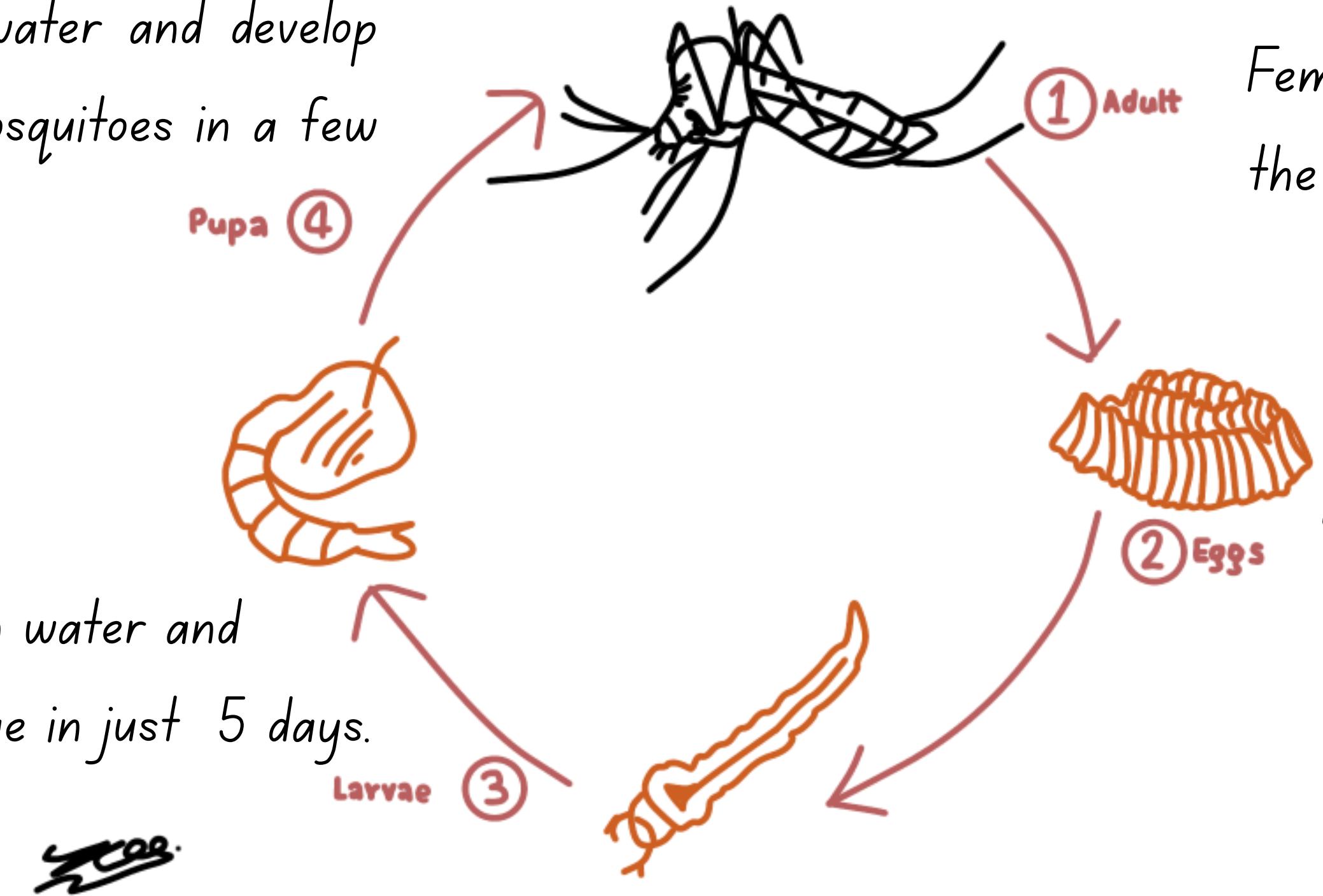


Encephalitis

Cases in Thailand
25,000 Cases

Life cycle

Pupae lives in water and develop into an adult mosquitoes in a few days.



The larvae live in water and develop into pupae in just 5 days.

Female mosquito lays eggs in the water.

The eggs hatch within a few days or months when enough water is covered.

Objective



1

To find out what kind of water (how warm (temperature) , pH, and what type of container) mosquitoes like best for laying eggs around our university.

2

To make and share a simple "Helper Guide" poster that teaches everyone easy ways to stop mosquitoes from breeding in water at home.

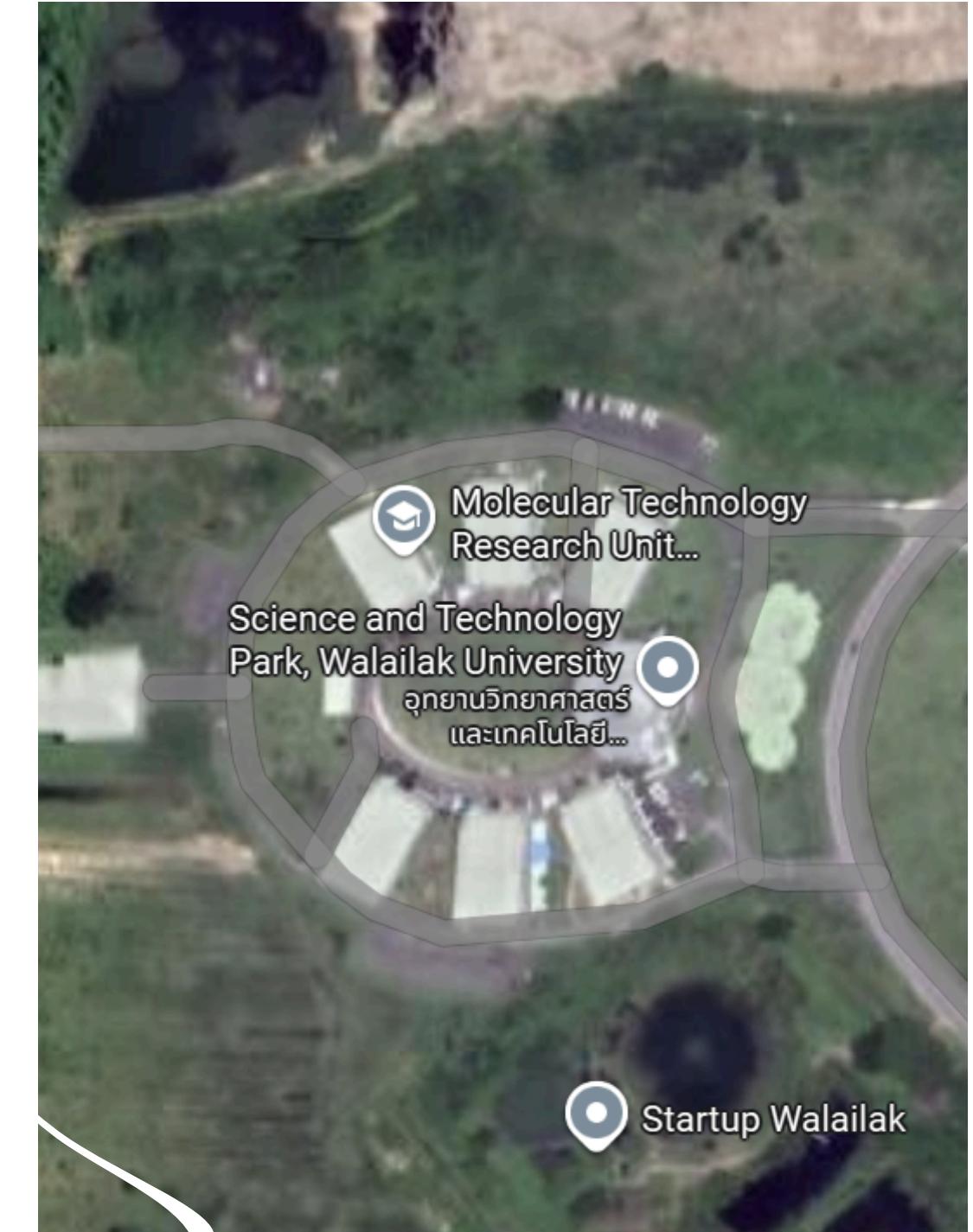
Study sites



(a) Map of Thailand



(b) Map of Nakhon Si Thammarat



(c) Map of Walailak University

Data Collection



1. Locate the water containers.

2. Measure Water Quality (pH and Temperature)

3. Use Mosquito Habitat Mapper Protocol

4. Use fish net to scoop Mosquitoes.

5. Place them in the Plastic cup

6. Count the Larvae.



Identification

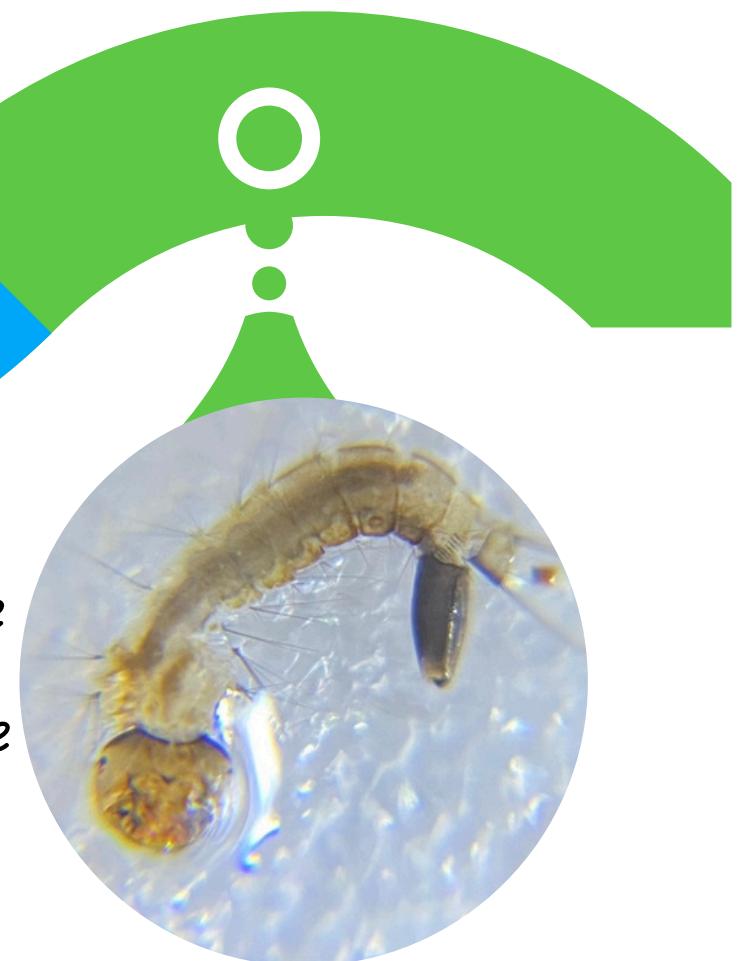
(1) Use plastic spoon to gently scoop the larvae from the plastic bag.



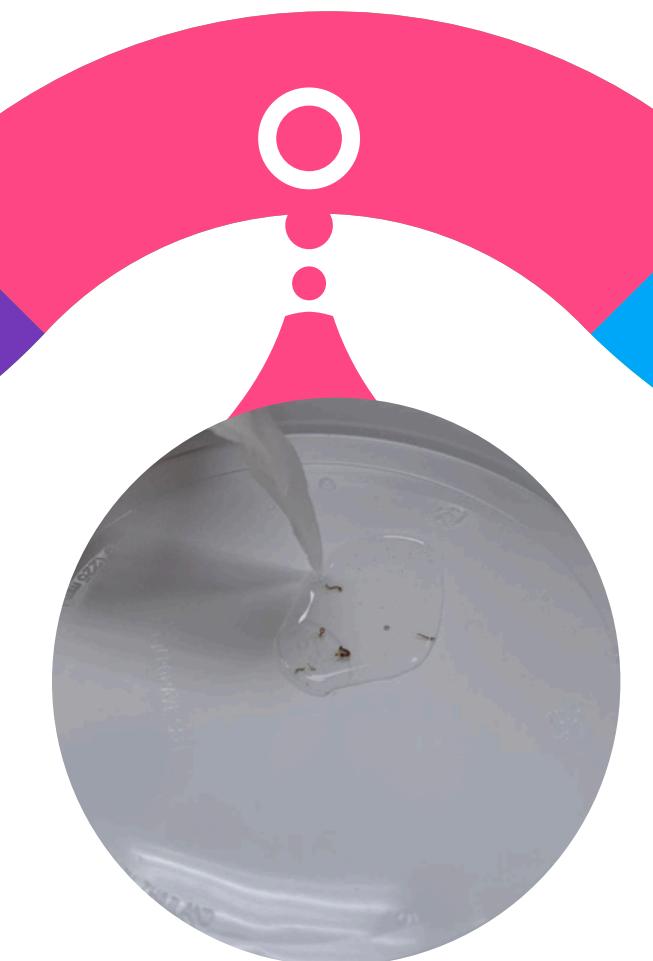
(3) Clean the glass slide and cover slip with ethanol to remove any dust.



(5) Use the microscope to examine.



(2) Place larvae to a small dish with some of the water.



(4) Take photos through the microscope and identify the type of mosquito.



Results



Ae. aegypti



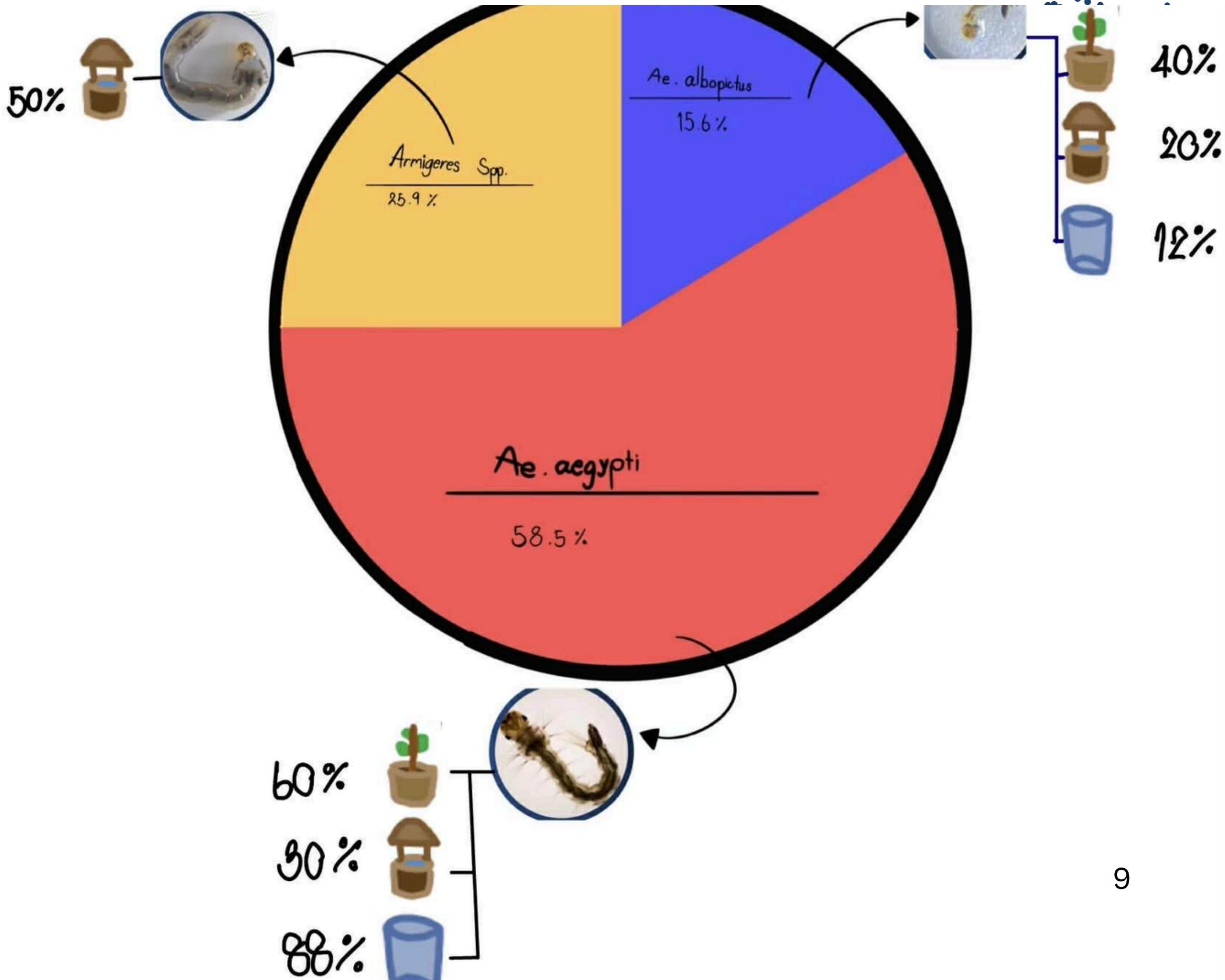
Ae. albopictus



Armigeres spp.

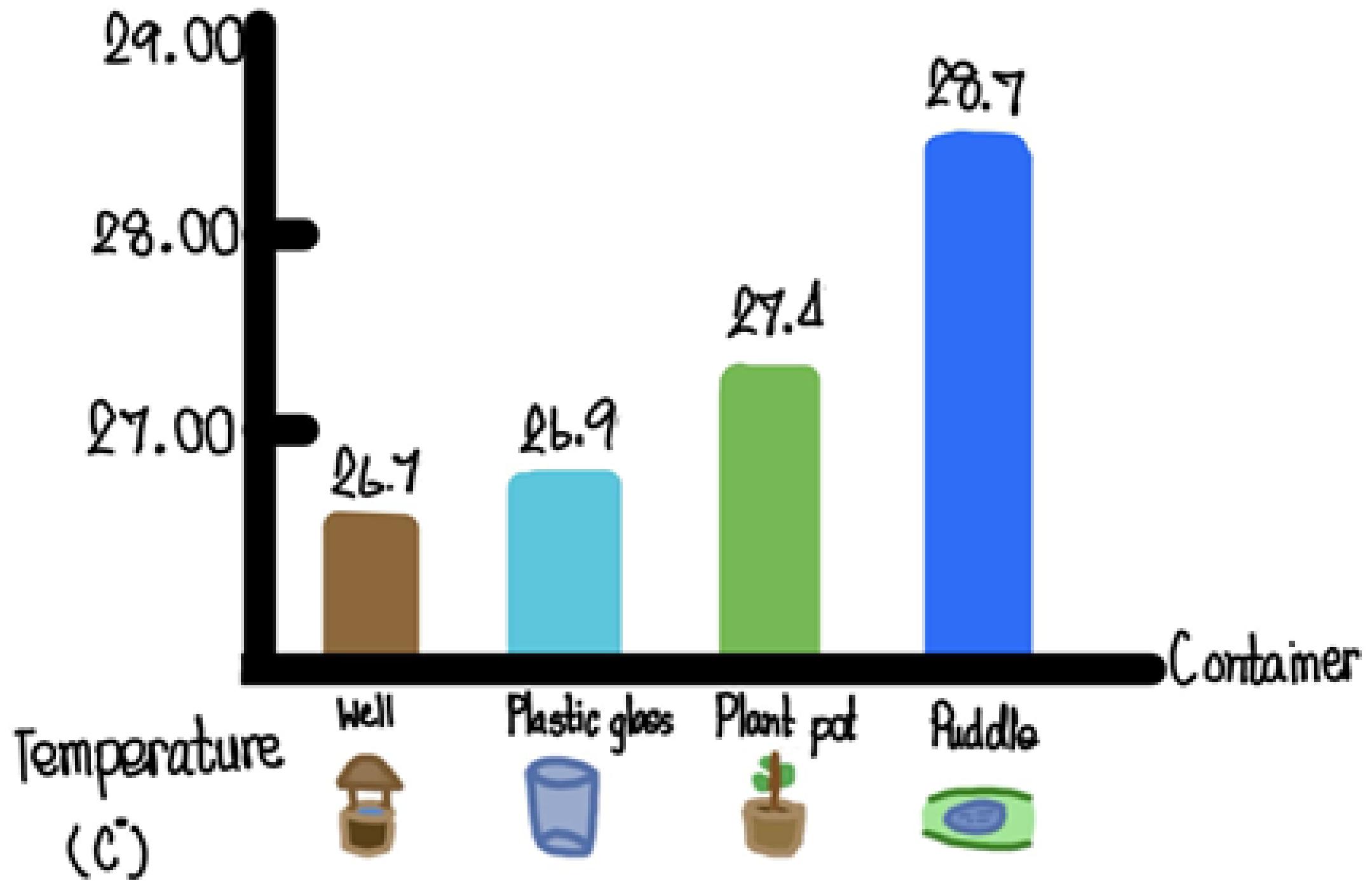
Species diversity

- *Aedes aegypti* (58.50%): The most prevalent species, establishing itself as the primary vector in this urban environment.
- *Aedes albopictus* (23.9%): The second most common species, acting as a significant secondary vector.
- *Armigeres spp.* (15.6%): Constitutes a minor proportion of the sampled population.



Temperatures

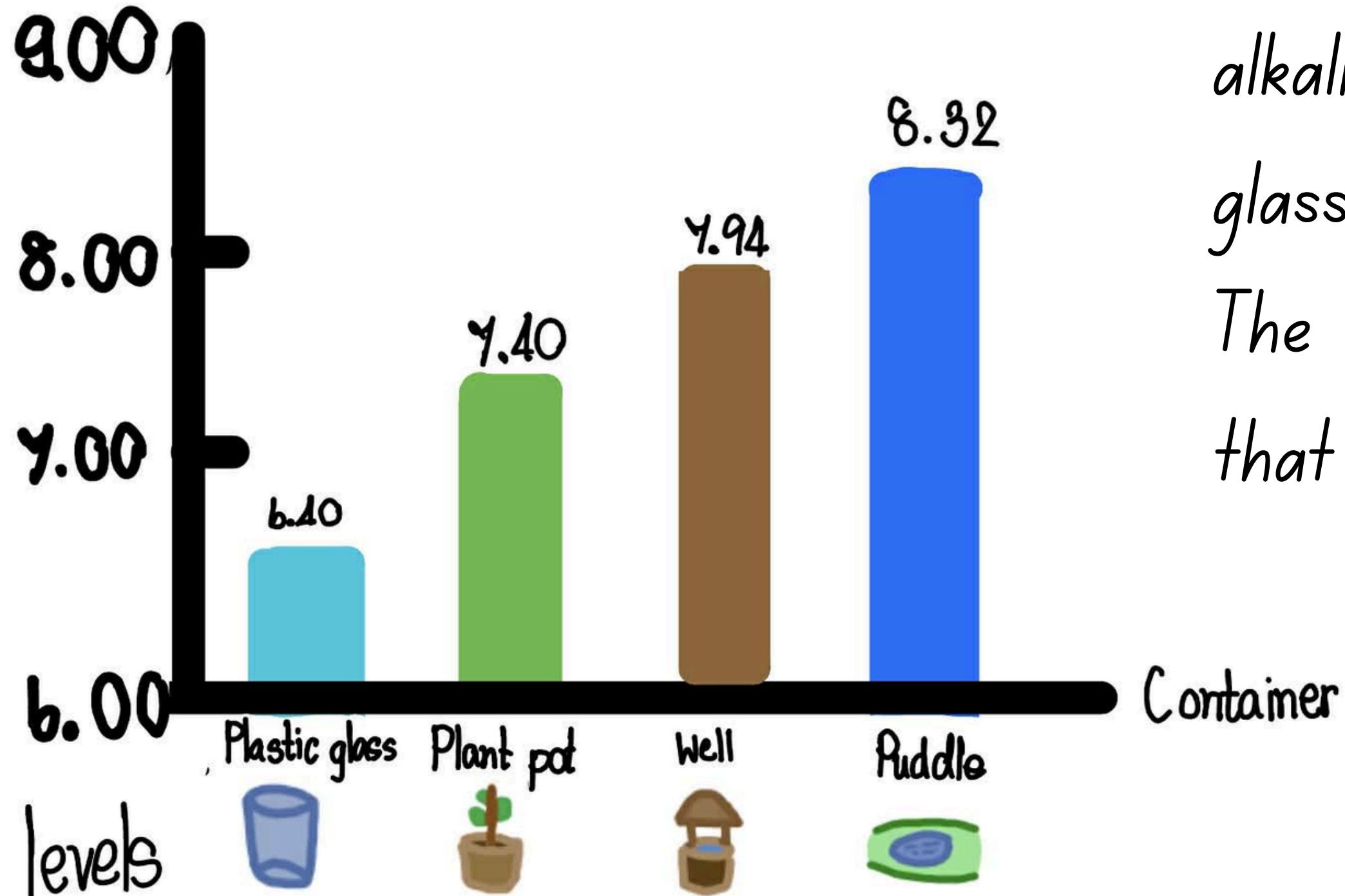
Temperature in different container types



Temperature: The puddle recorded the highest temperature (28.77°C), while the well had the lowest (26.70°C). The plant pot and plastic glass showed intermediate temperatures.

pH levels

pH in different container types



pH Level: The puddle was the most alkaline (pH 8.32), and the plastic glass was the most acidic (pH 6.40). The well and plant pot held water that was neutral to slightly alkaline.

Our Guide to a mosquito-free home.



other measures



don't wear dark clothes

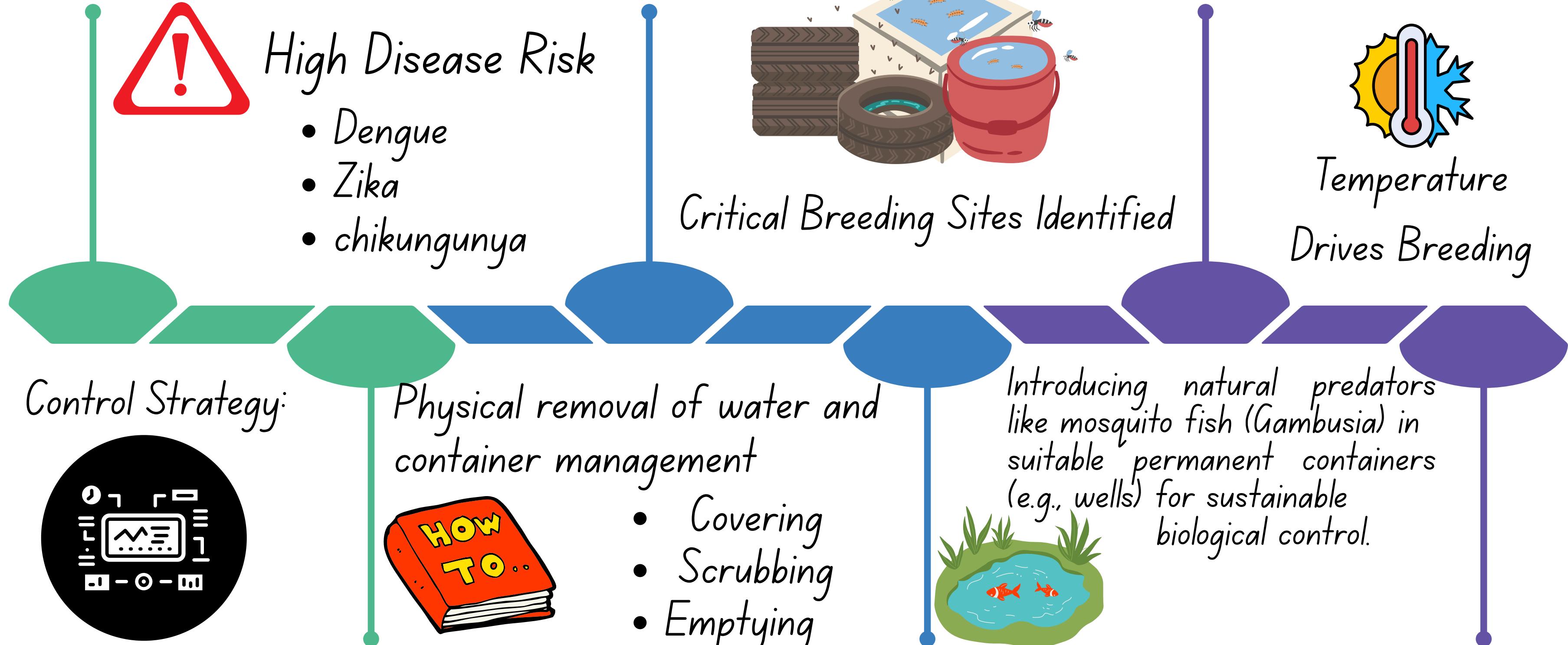


use mosquito coil



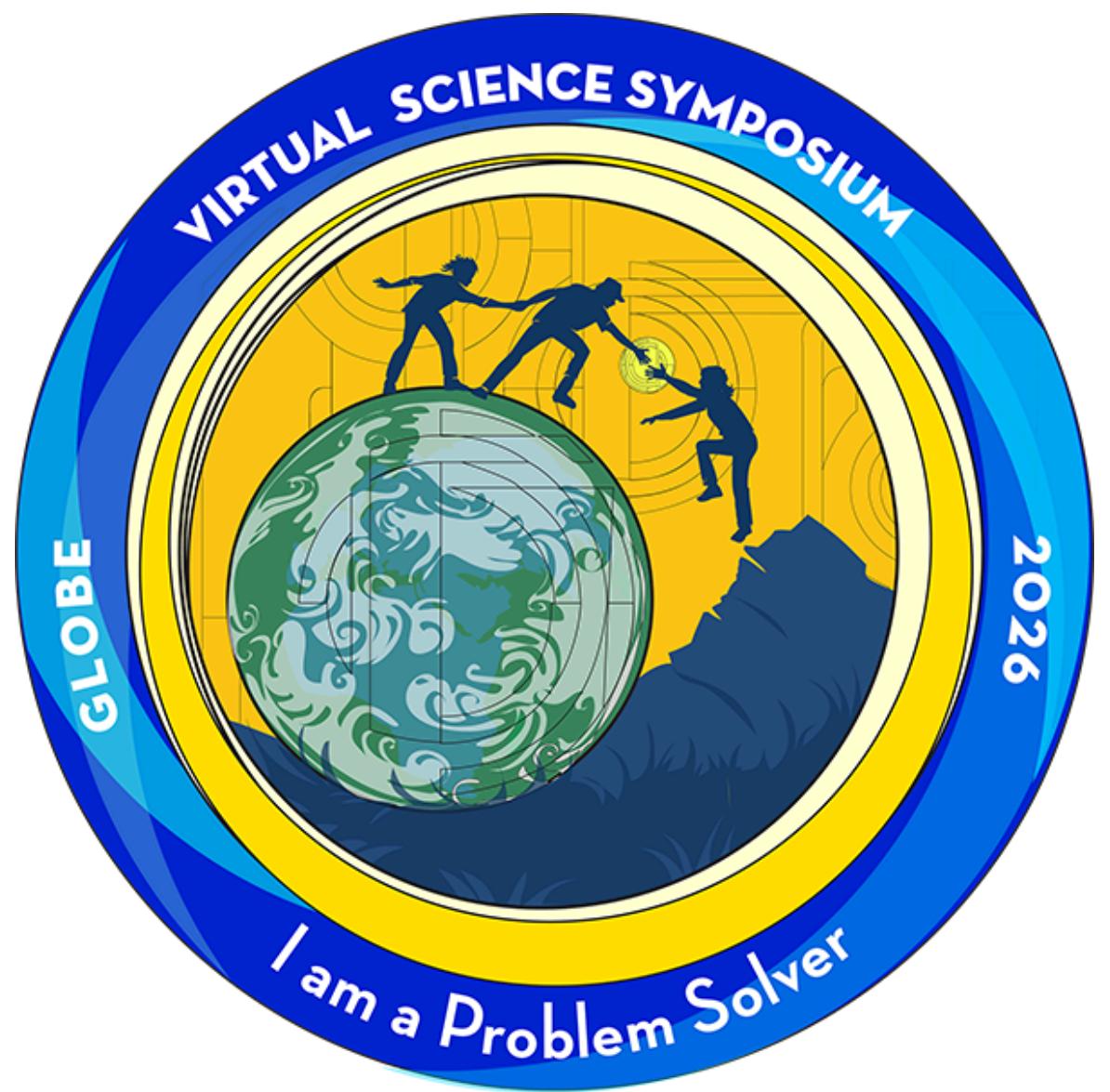
avoid mosquitos during the day

Discussion



Call to Household Action: Effective prevention requires every household to take proactive, weekly measures to eliminate standing water and secure potential breeding sites.

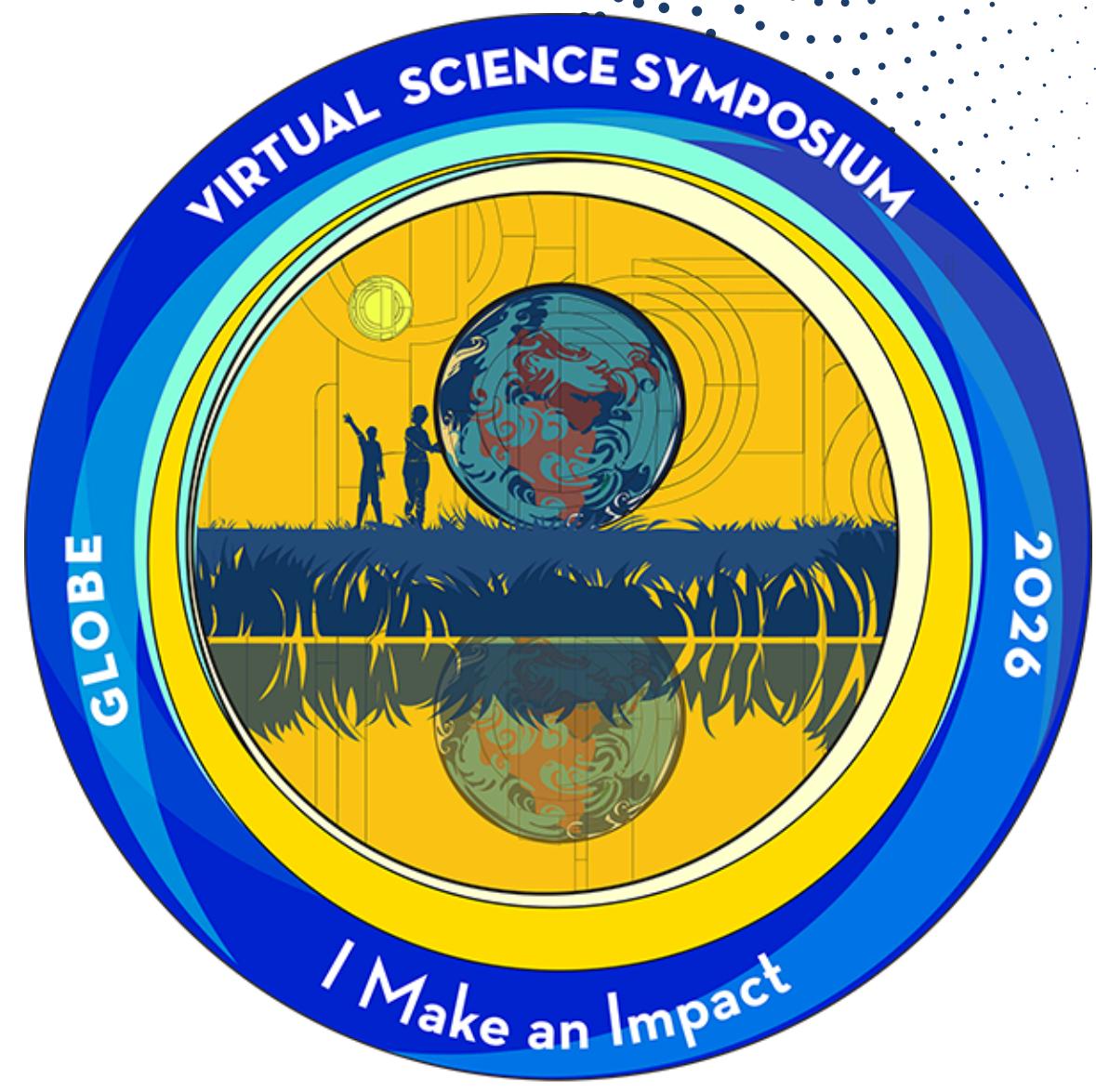
VSS Badges



I AM A PROBLEM SOLVER



I AM A COLLABORATOR



I MAKE AN IMPACT



THANK YOU

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