

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

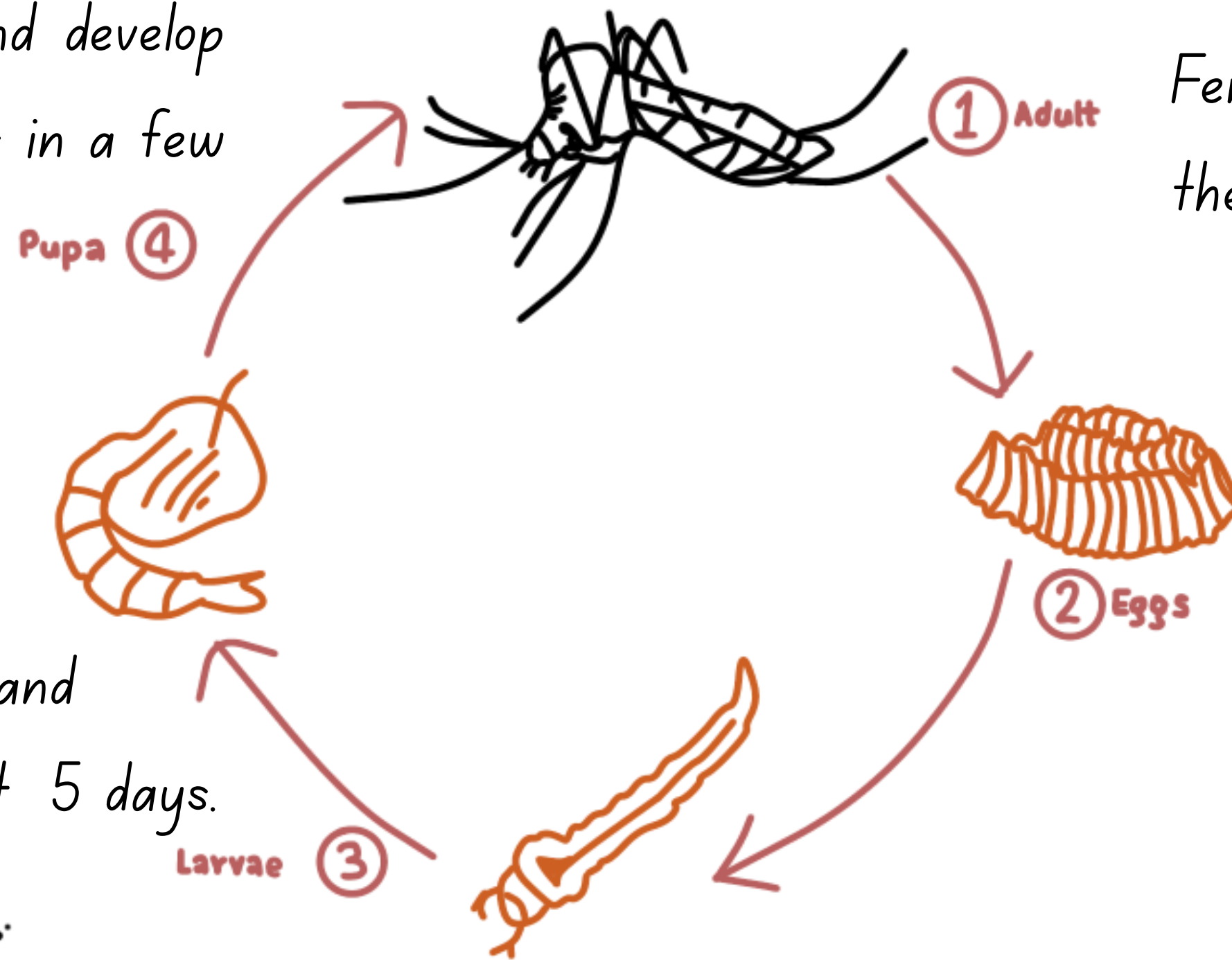
Life cycle

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

Female mosquito lays eggs in the water.

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

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



Handwritten signature

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.

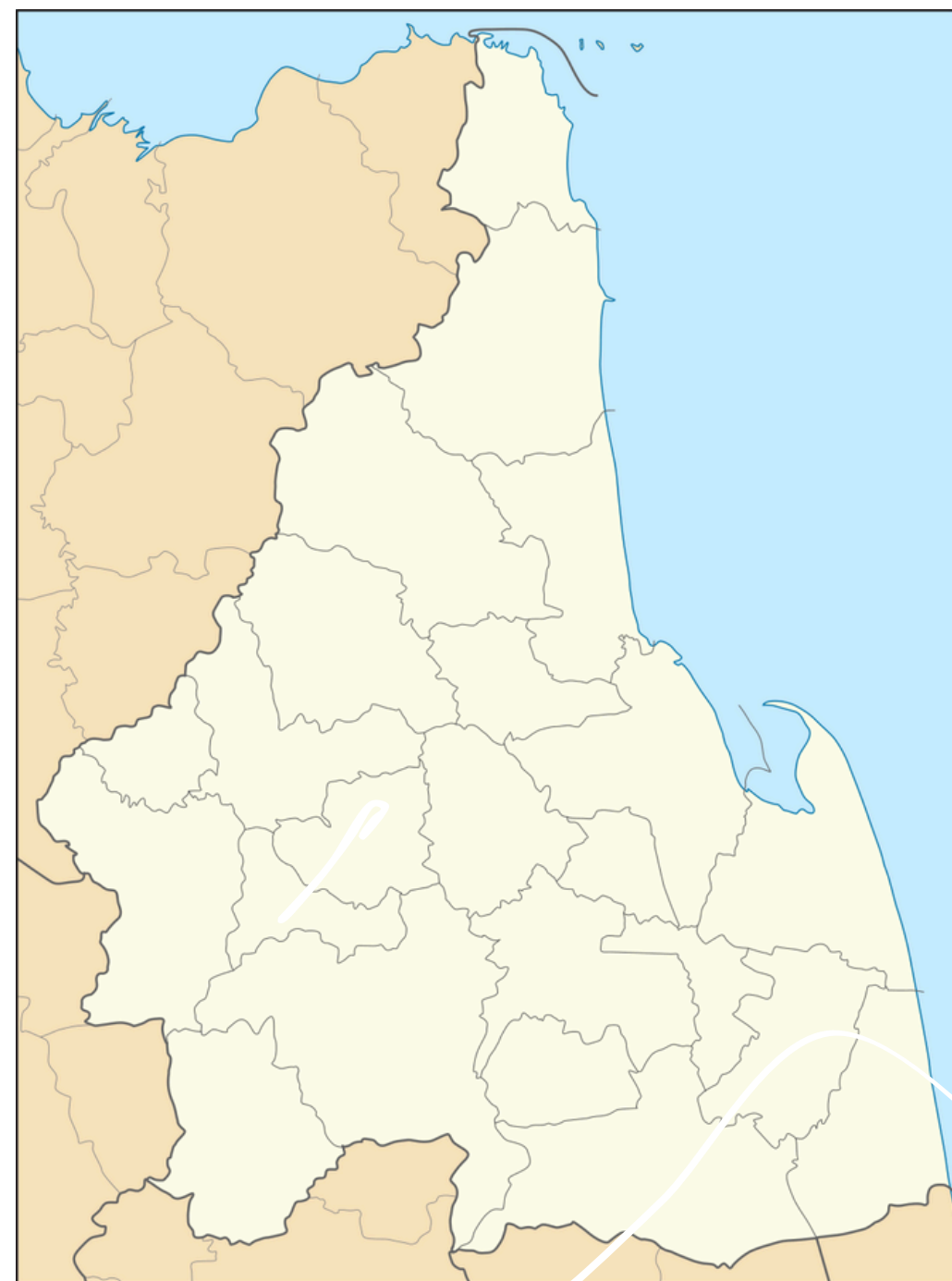
2

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

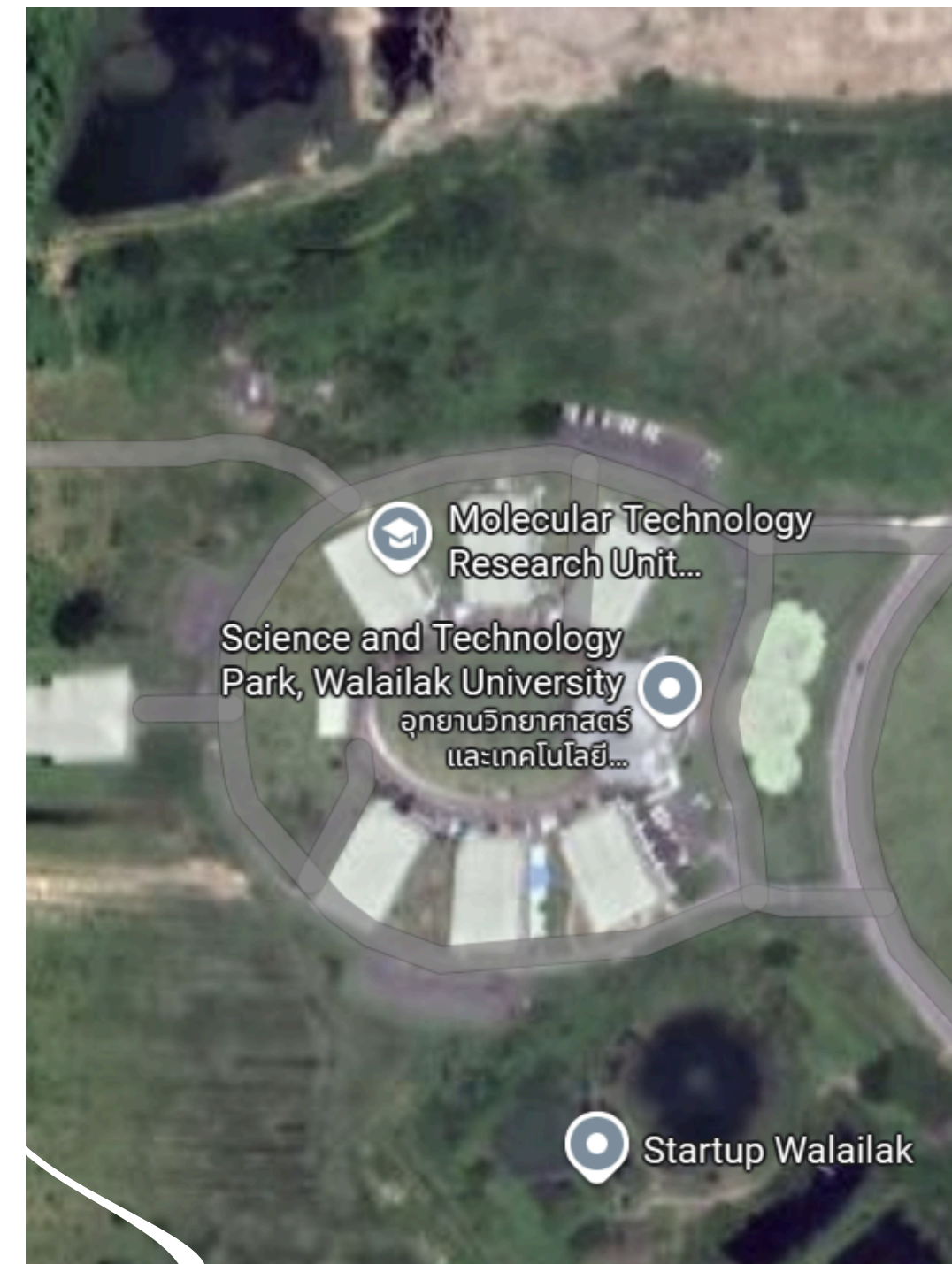
Study sites



(a) Map of Thailand

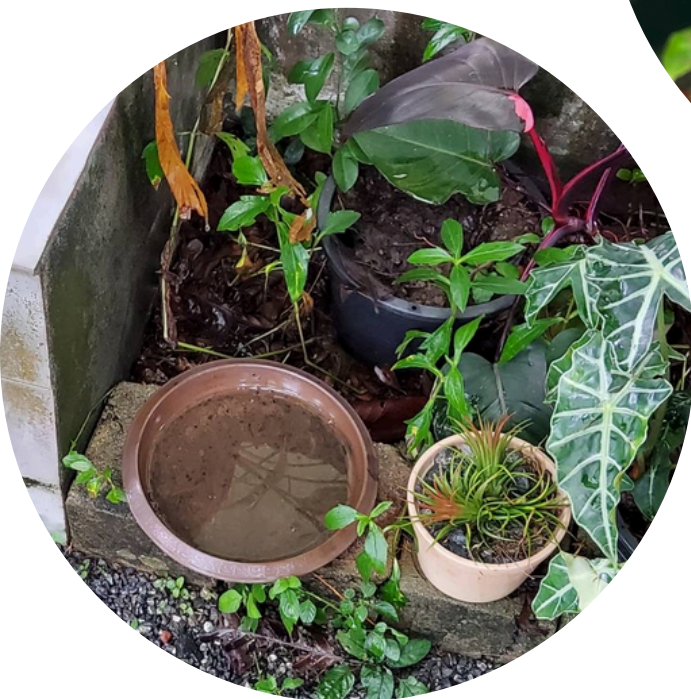


(b) Map of Nakhon Si Thammarat



(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.



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



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



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



(5) Use the microscope to examine.



Results



Ae. aegypti



Ae. albopictus

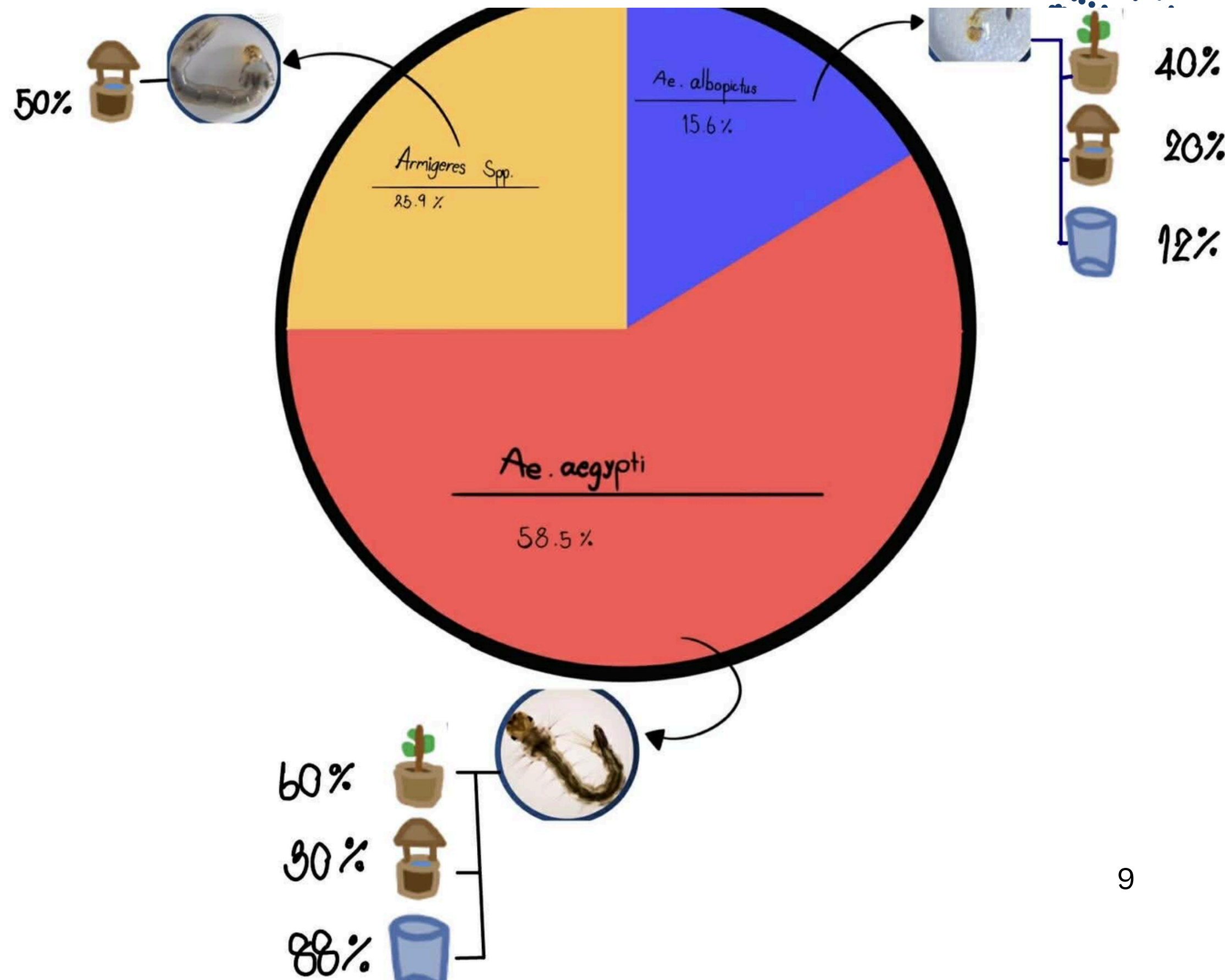


Armigeres spp.

Species diversity

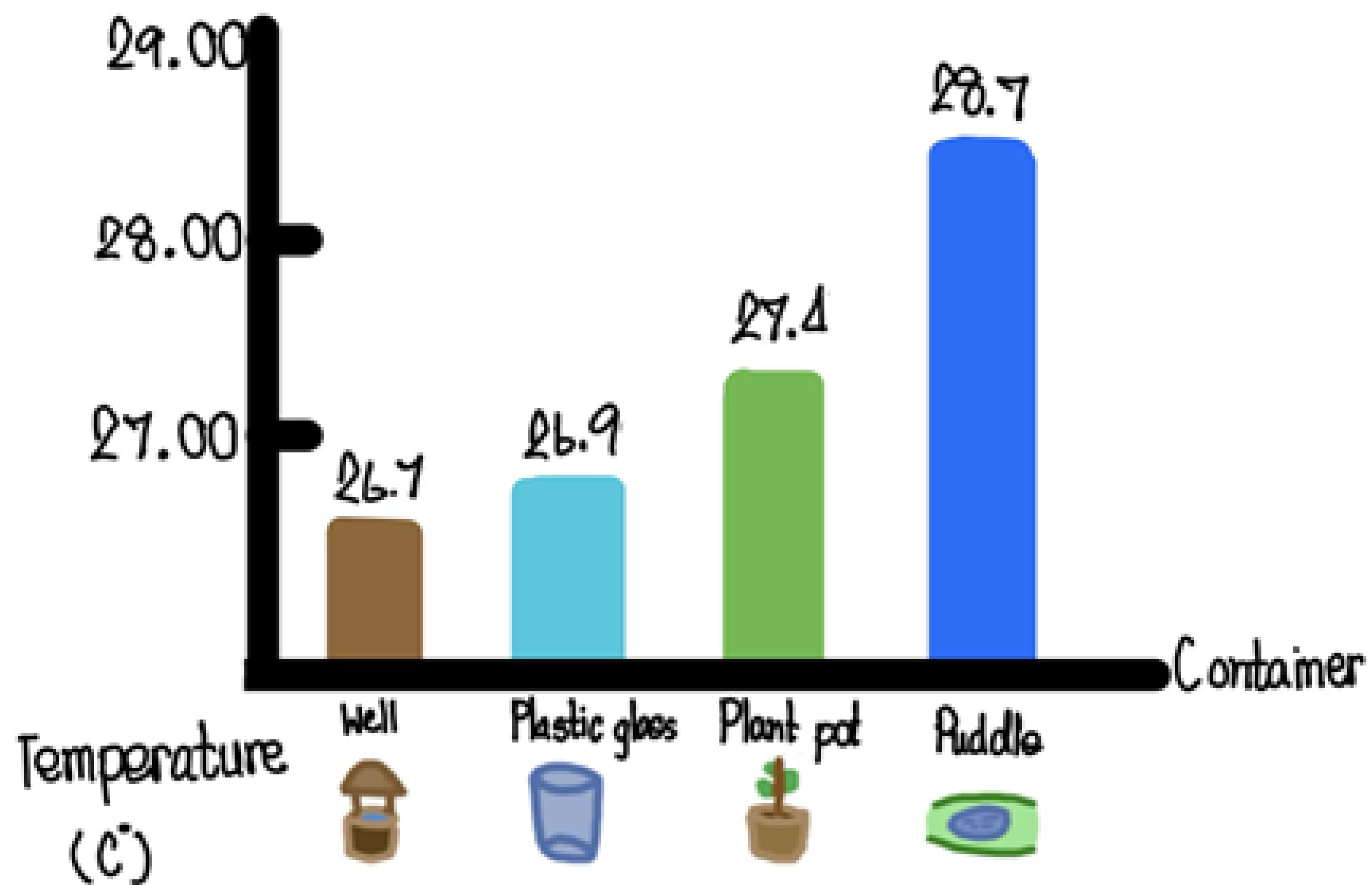


- *Aedes aegypti* (58.50%): The most prevalent species, establishing itself as the primary vector in this urban environment.
- *Aedes albopictus* (23.9%): The second most common species, acting as a significant secondary vector.
- *Armigeres* spp. (15.6%): Constitutes a minor proportion of the sampled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



Temperatures

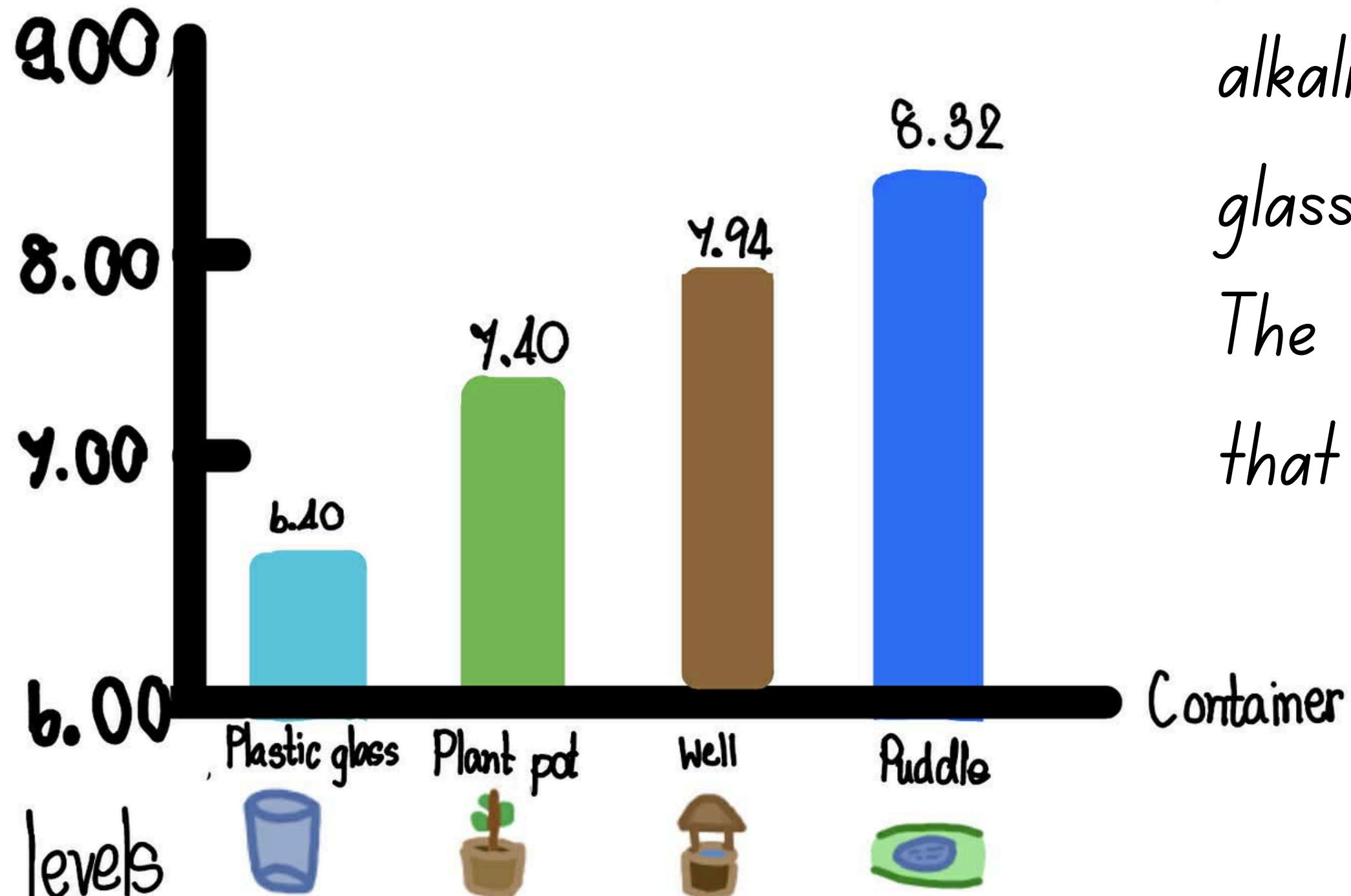
Temperature in different container types



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.

Plastic glass

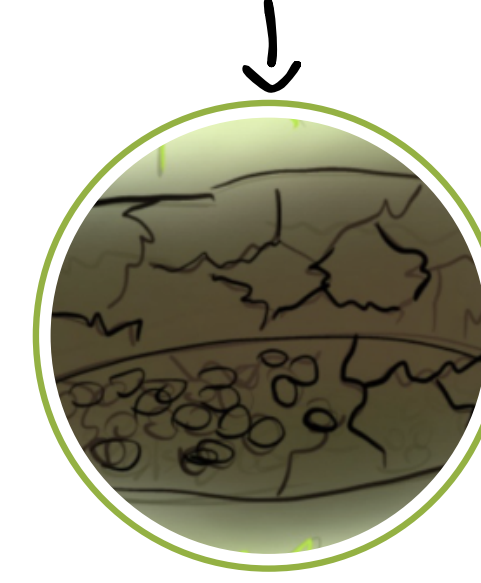


Action



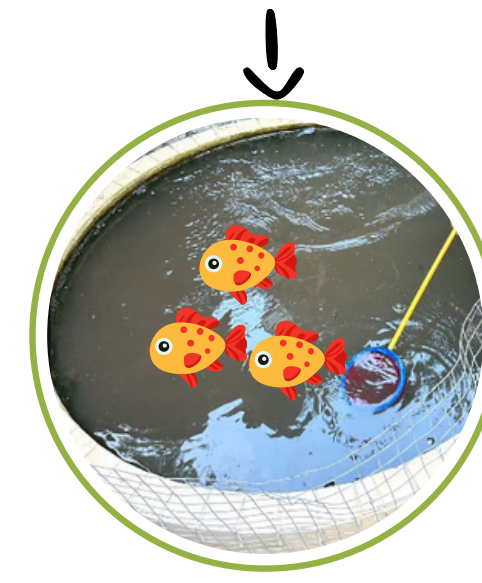
Keep them
upside down

pond



Dry out the
water

Well



Put fish in
the well

Plant Pot



Put a lid
on the pot

other
measures



don't wear
dark clothes

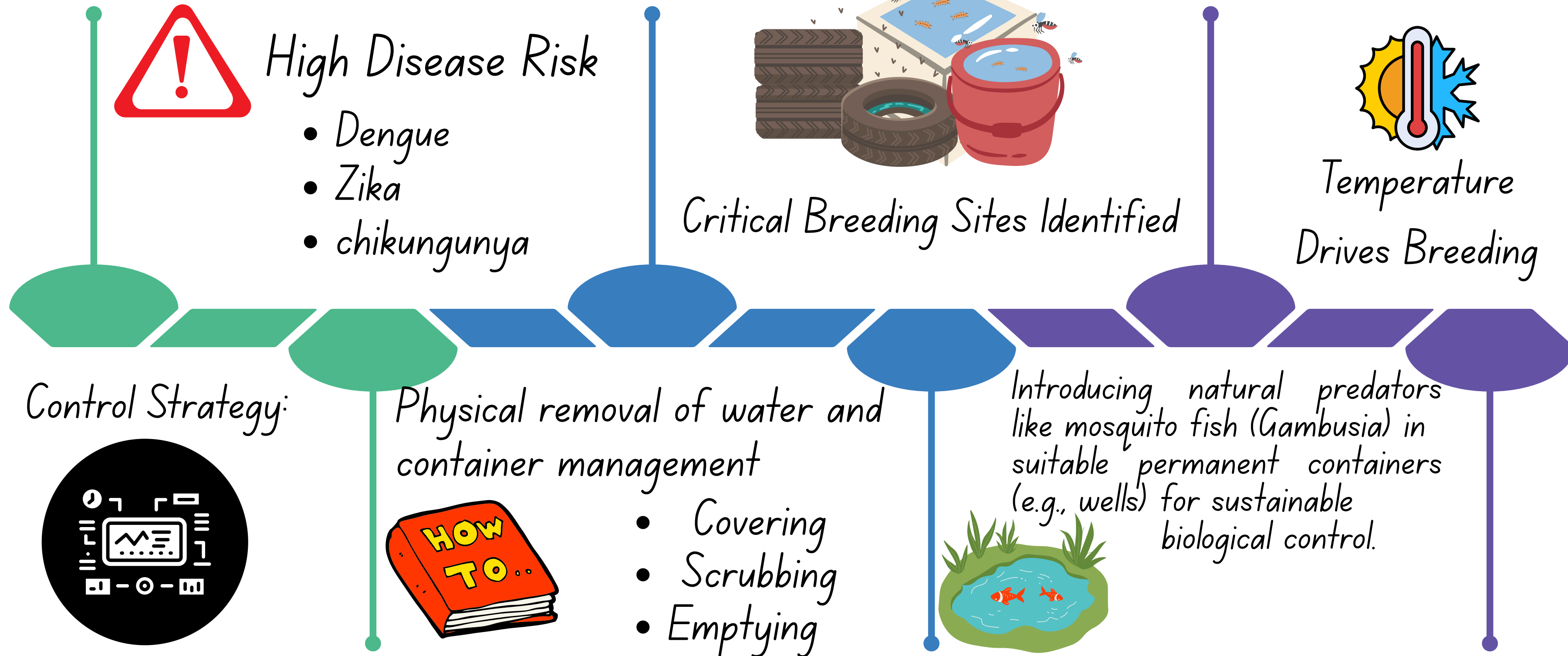


use mosquito
coil



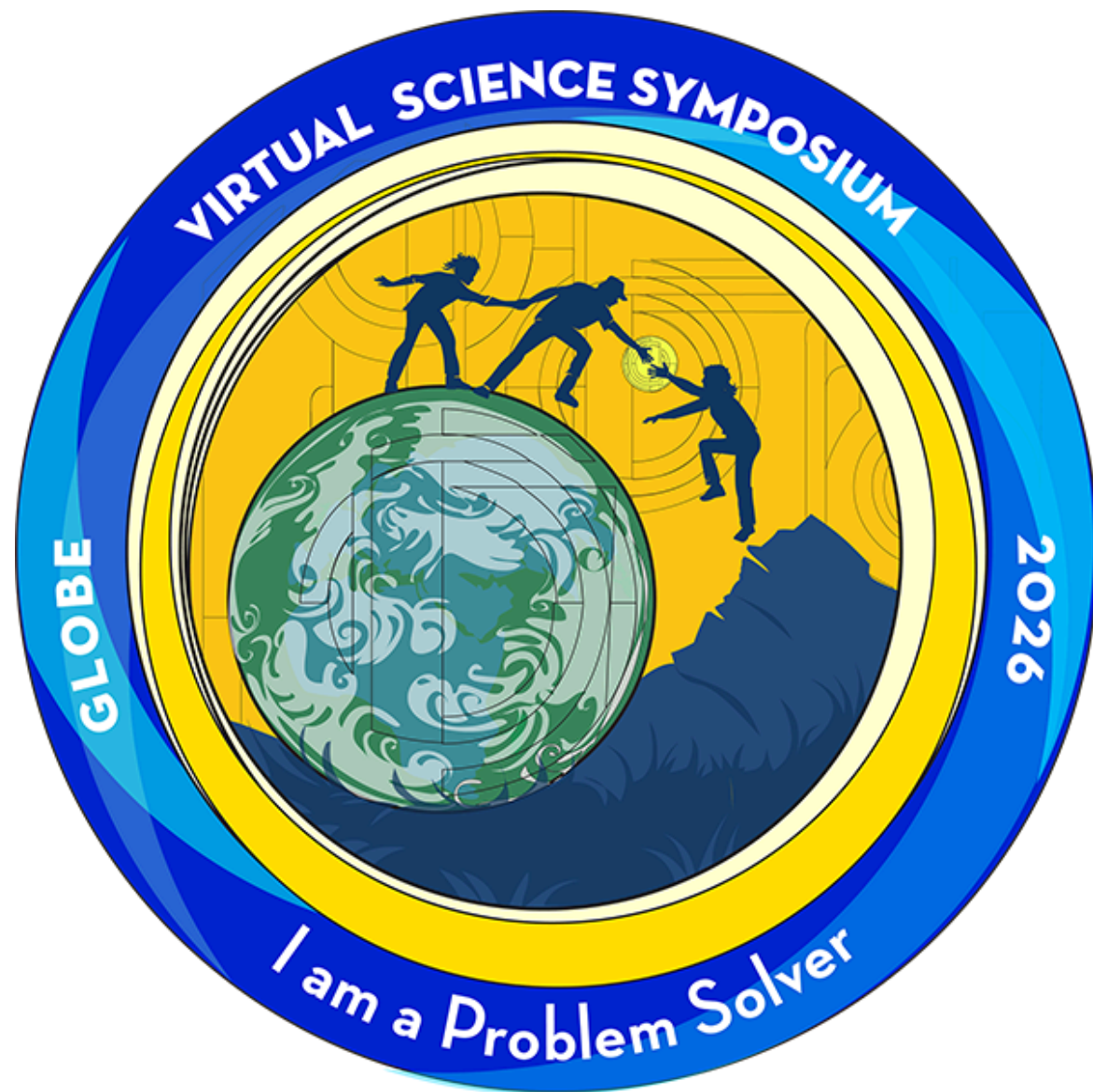
avoid mosquitos
during the day

Discussion



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

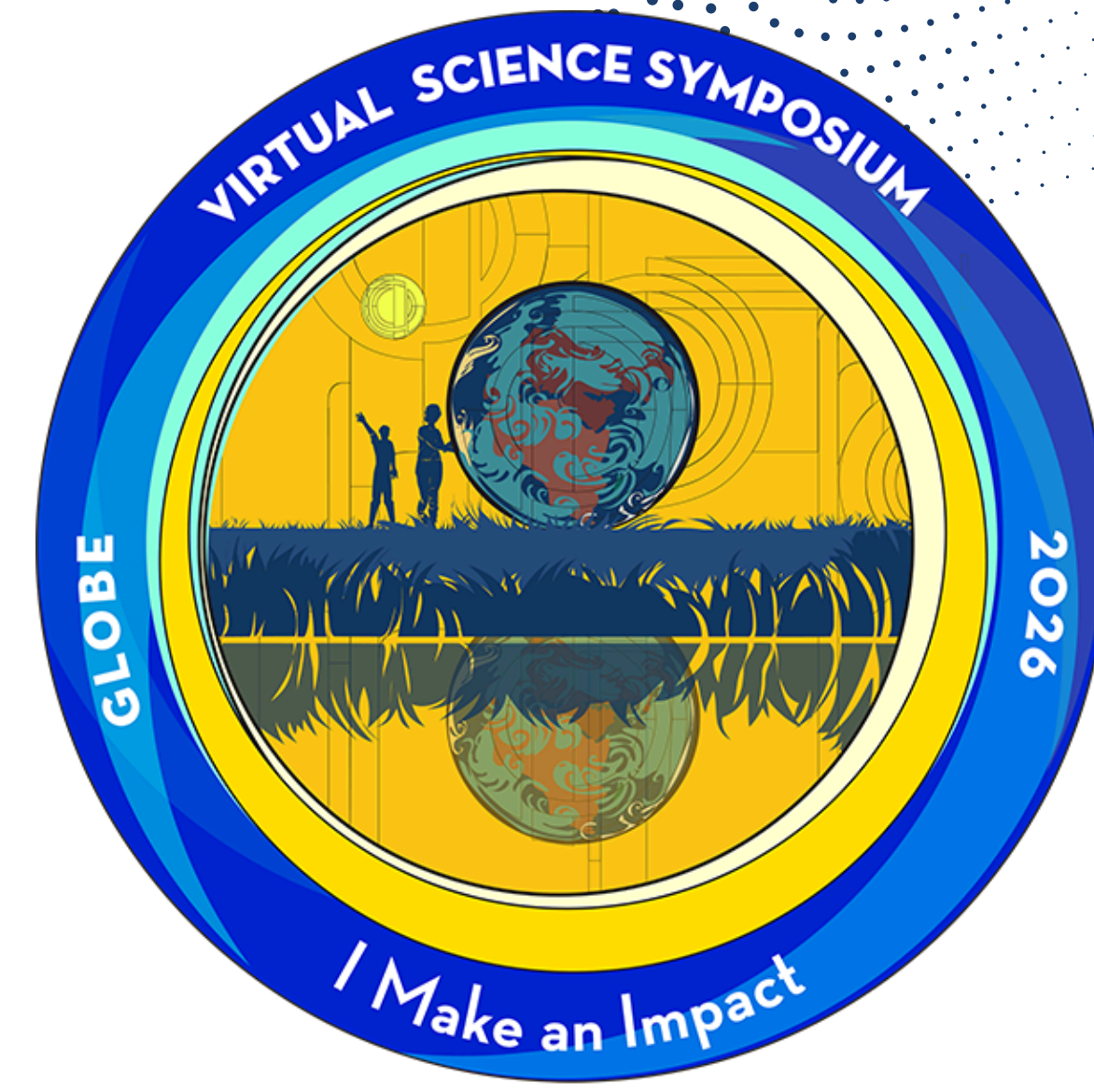
VSS Badges



I AM A PROBLEM SOLVER



I AM A COLLABORATOR



I MAKE AN IMPACT

THANK YOU

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