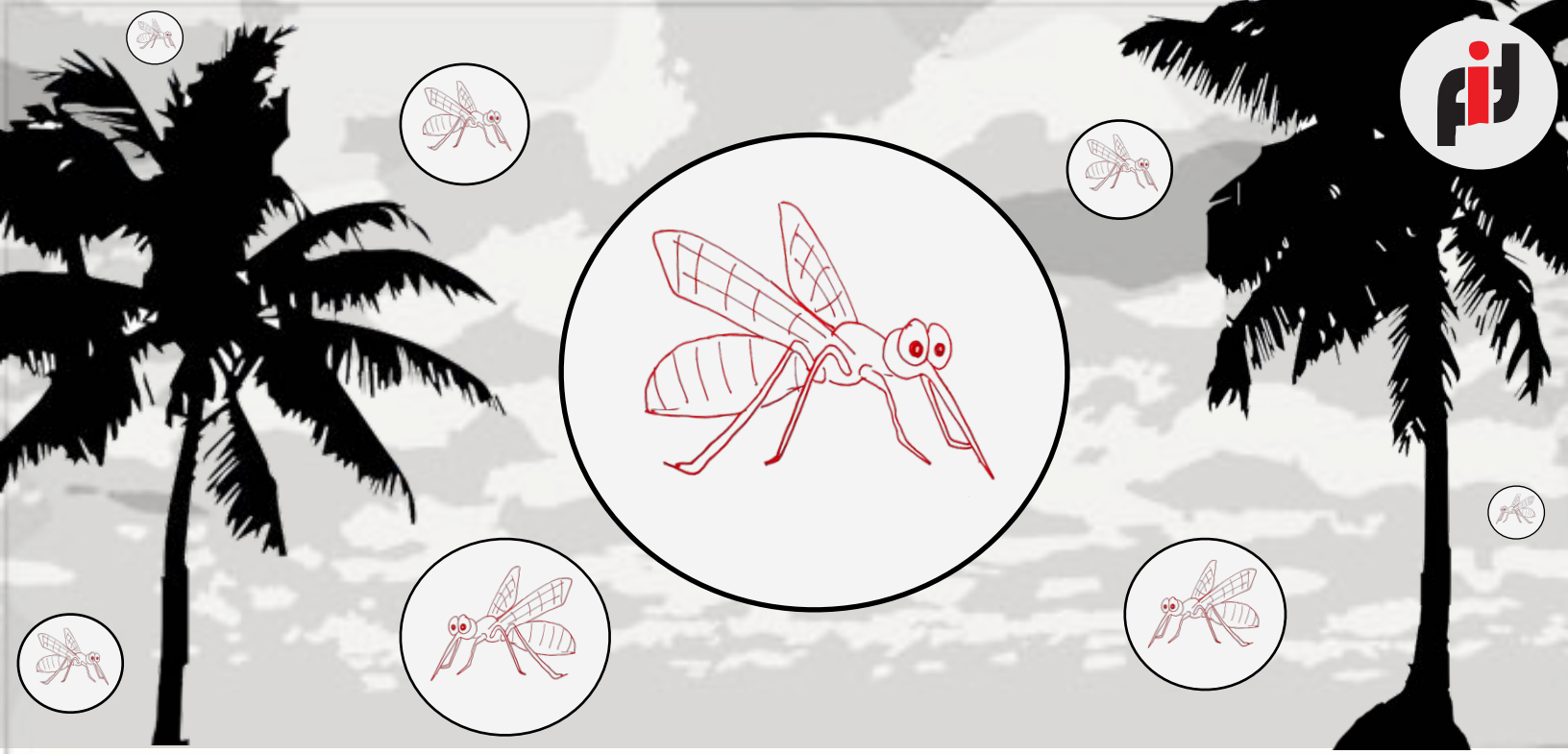
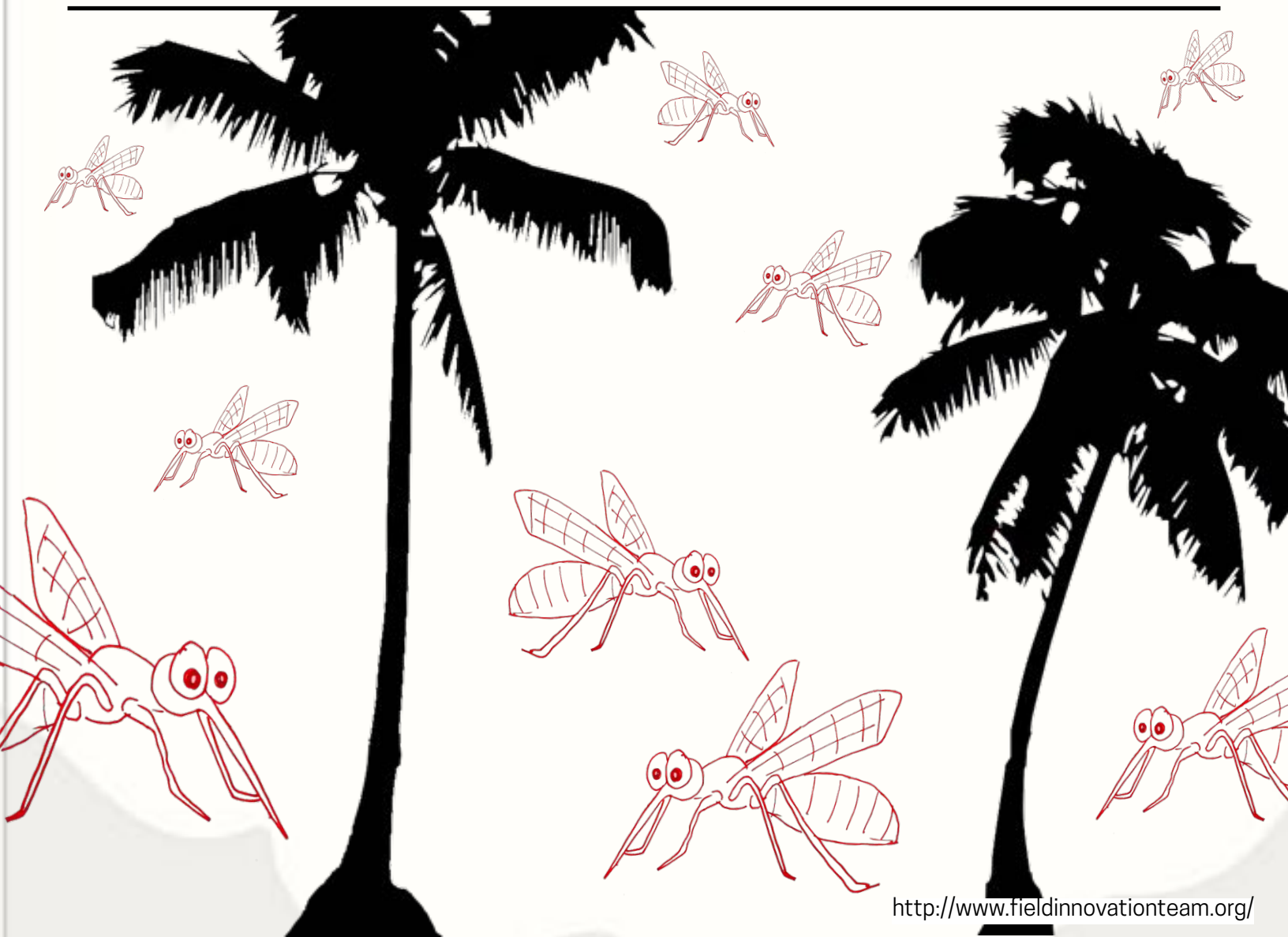


Zika Public Health Gaming



http://www.fieldinnovationteam.org/

Dear Miami Community,

Thank you for opening your hearts and minds to support education for both youth and adults on Zika preparedness! We are very excited to bring these programs to you and to the greater Miami-Dade Public School System. We hope you have as much fun playing the games as we did. Our hope is 100s of youth and adults will have a chance to learn public health facts about Zika getting educated on how to prevent, prepare and be proactive towards the virus. The team that helped to design these games are all volunteers spanning from the cities of Miami, Chicago, Park City, Los Angeles, and San Francisco.

Additionally, we love to see the games in action, if you have an opportunity to snap video and photos of playing the games at school, home or in the community please post on twitter @FITReadytogo or our Facebook site: Field Innovation Team or email it to us at info@fieldinnovationteam.org.

Enjoy the games & together Let's Innovate!

Desi & the Field Innovation Team

The incredible team, a deep thank you for your time, energy and creativity:

- Nadia Alexandra and Sweta Basnet for development and design of the improvisational games.
- Alison Thompson and Albert Gomez for integration into the Miami Community and the Miami-Dade Public School System.
- Lien Tran for providing community insight and contributing Humans vs. Mosquito to the gaming curriculum.
- Erin Marra and Christina Mainero providing information and public health expertise.
- Lucinda Laurence for illustrating the Zika public health gaming.
- Desi Matel-Anderson for being the Chief Wrangler.

Special Thank you to Miami-Dade School public school systems for agreeing to disseminate and support our Zika public health gaming, Third Wave Volunteers and South Florida Resilience Systems for collaborating on this project with Field Innovation Team.

THIRD WAVE VOLUNTEERS Everyone's Needed

Field Innovation Team

South Florida Resilience System

UNIVERSITY OF MIAMI

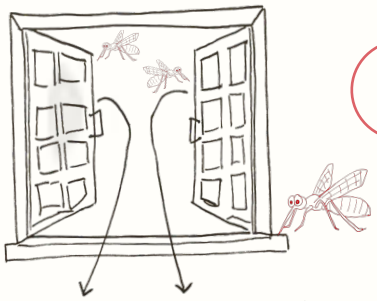
CHILDREN

6 Steps for Safety

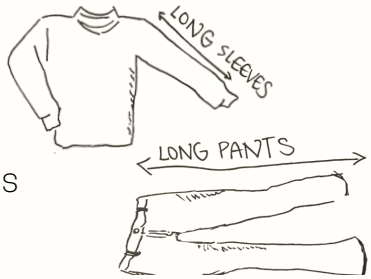
Zika

1. Spray on repellant or cream/asking an adult to spray you (for younger kids)

2. Stay away from standing water



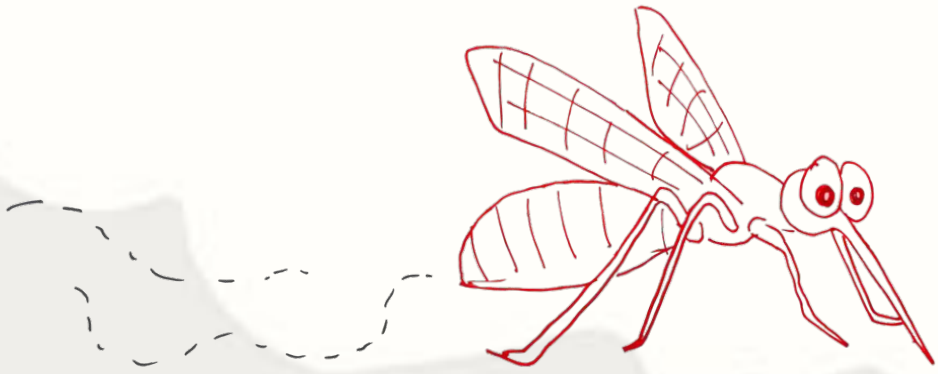
3. Close the windows/doors



4. Wear long sleeves and pants

5. Spray on repellant again on both clothes and (bare) skin (repeat)

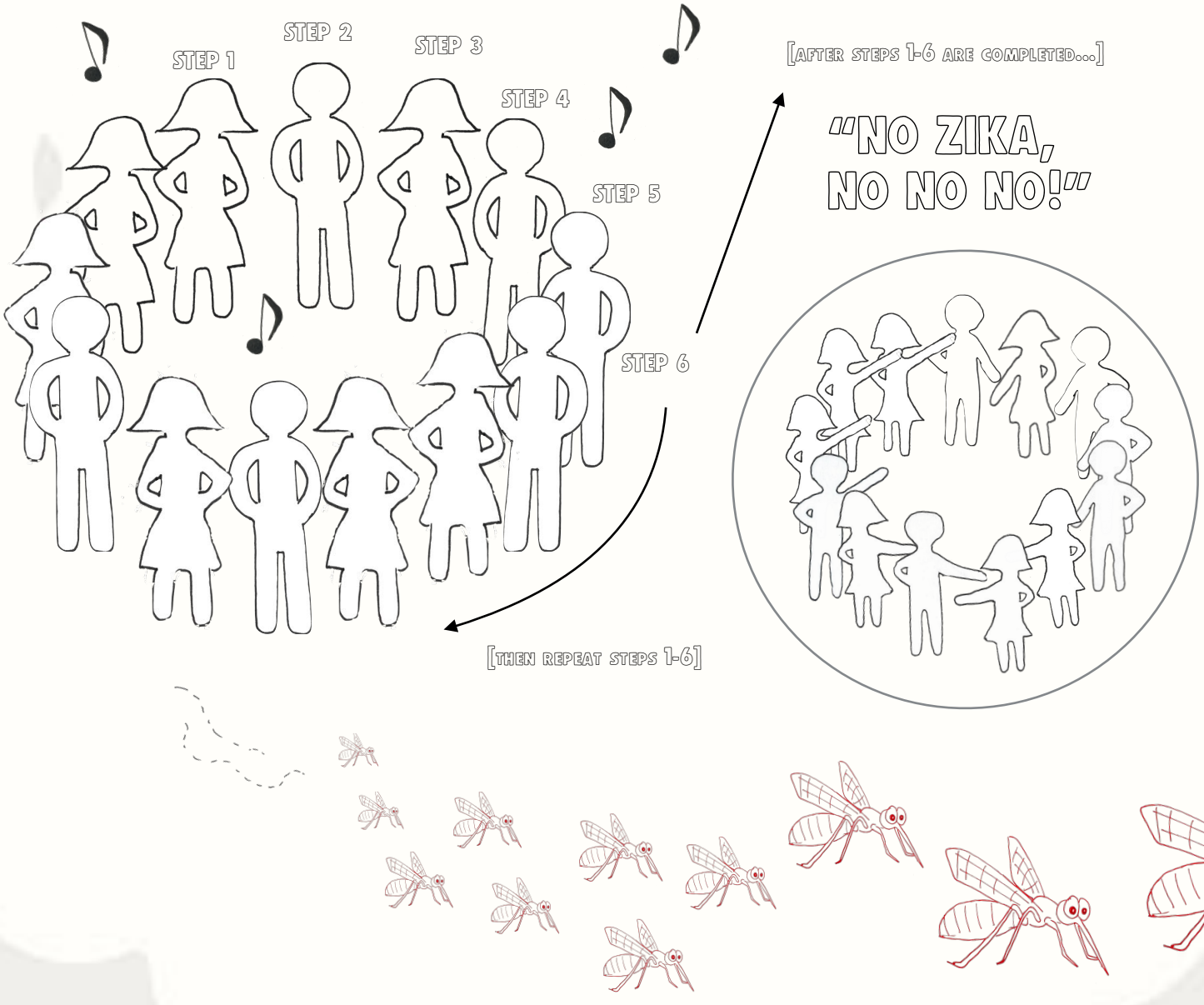
6. Tell an adult about existing standing water so they can help eliminate it



ACTIVITY 1

Circle Patterns

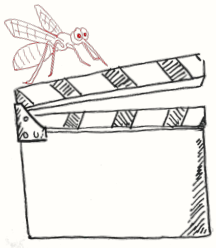
Children form a circle where everyone can see each other. The instructor helps the children go around the circle and practice the six steps for safety. Each person says one step. They say the step while doing a movement or interpretation of what it means to them. Some kids will play it really silly, some might be more shy. Each person can do their own interpretation of the move. After the sixth step, everybody says, NO ZIKA, NO NO NO! and does a collective dance move.



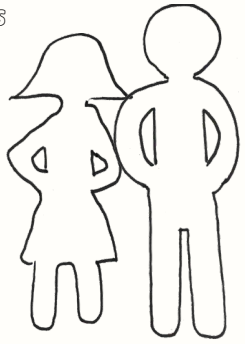
ACTIVITY 2

Directed Scenes

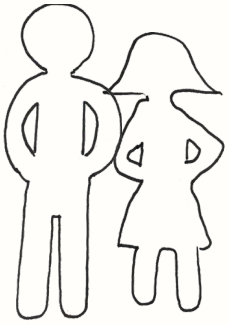
Have children direct each other in scenes where they are preparing to go outside. Some will be a teacher or parent, some will be the kids. Have the kids play it out to their true emotions - they may feel it's really annoying to have to put on repellent or feel shy telling an adult when they see standing water. Whoever is playing the teacher can explain the importance of these steps so they can go through similar thought processes when these situations arise in real life, and then make a smart choice.



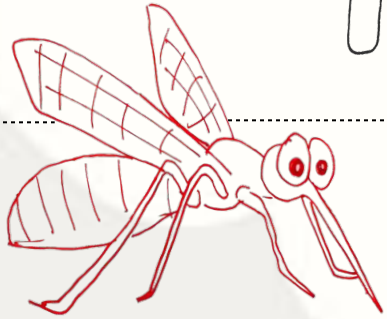
Putting on repellent is annoying!



I feel the same way.



Thank you for letting us know how you feel. Repellent is important because...



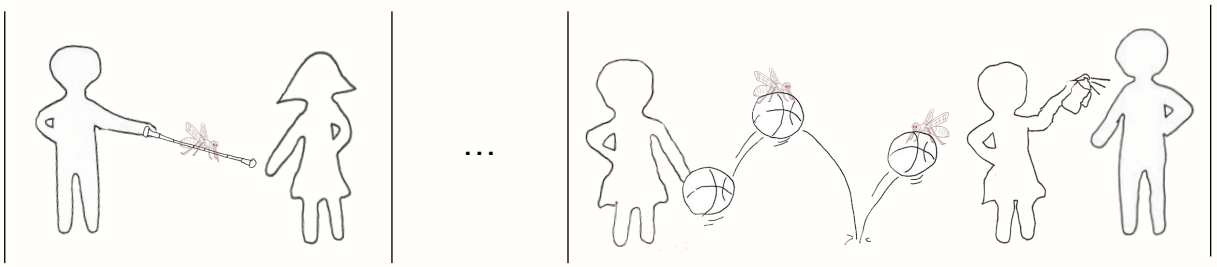
ACTIVITY 3

Zika Field Day Games / Relay Races

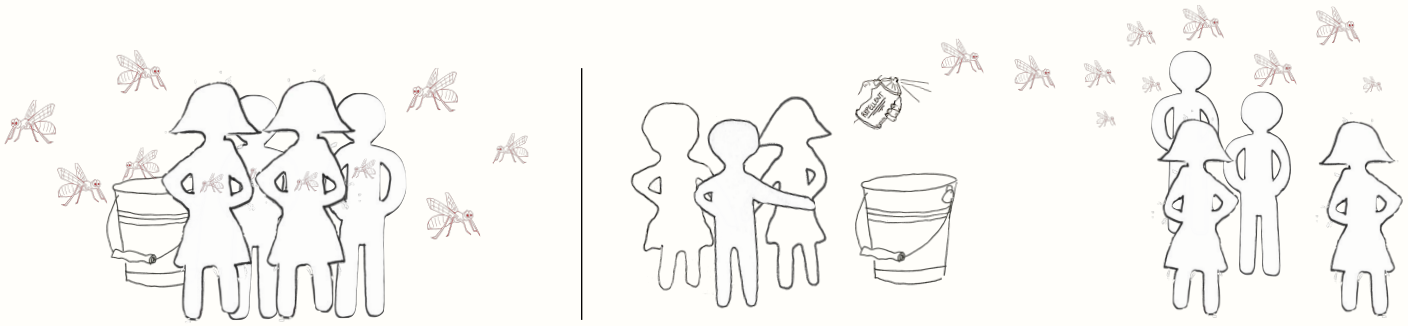
High-energy games; requires an outdoor and indoor area to play.

RELAY RACES

The first "level" of the game is inside - a relay race. Four teams of 3-4 children each are formed. Very simple activities like pass the baton or skipping are played for each part of the relay -- i.e., person 1 will pass a baton to person 2, then person 2 will skip to person 3, the person 3 will walk blindfolded to person 4, then person 4 will dribble a basketball to the finish. At the end of the relay race, students are given a real can of mosquito spray and they have to spray each other. Once everyone is sprayed, they can advance to the next level outside.



Students run outside and the teachers play the "mosquitos." They are guarding a bucket or basket of goodies -- treats, stickers, etc. When they see the players come outside, they smell the repellent on them and run away. Students can grab a treat and try to tag their teachers just for fun.



Alternatively, the 2nd level is more like a field day -- you can design your own outdoor activities for the kids to play. Since students have their mosquito spray on, they can now play and feel safe. Ask students to remember the 6 steps of safety before they go out -- to shut the door behind them and any windows!

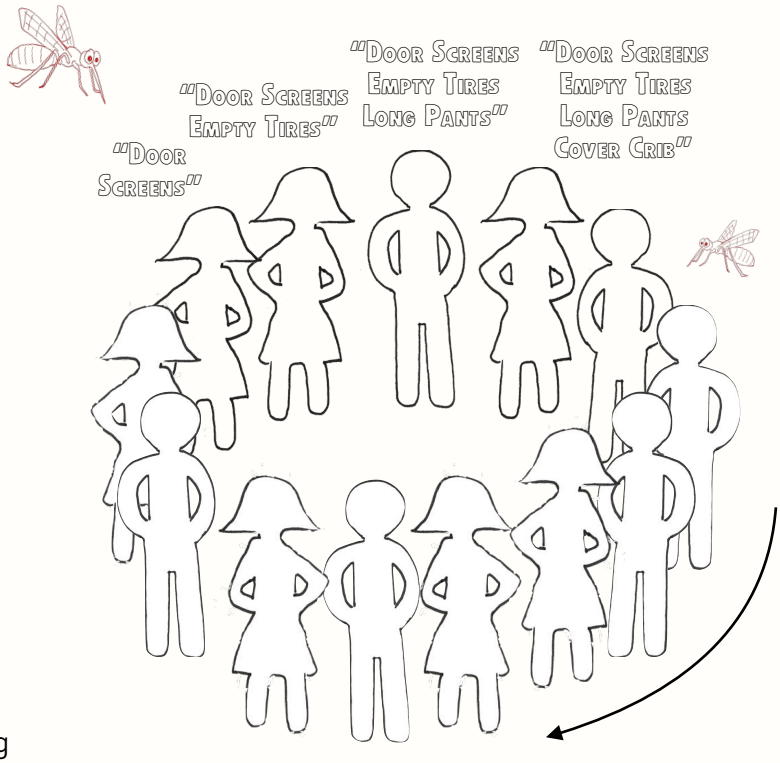
Adults

The adult portion is designed to be very playful... we gotta laugh about this, while being educated, otherwise we're going to get very stressed out.

ACTIVITY 1

Memory Game

Matching words with a body movement helps us remember it. For this game, players stand in a circle. Each player will contribute one idea of how to prevent Zika in the circle, and make a motion that goes with it. The person to the left of the person who just took their turn will repeat back all the words and motions made in the circle before them to test their memory. This makes it harder as you go around the circle, because you have more to remember. The goal is for the last person in the circle to be able to repeat back the whole circle in order. Here are some suggestions —some can be silly or funny if people run out:



Long shirts

Long Pants

Cover your baby stroller with netting

Cover your crib with netting

Cover your baby carrier with netting

Wear protection during sexual activity from start to finish

Socks

Loose Clothing

Air conditioning

Wearing Repellant

Community clean up

Stay inside during the daytime

Clean toys

Empty flower pot saucers

Empty trash containers

Empty Buckets

Empty tires

Empty bird baths

Empty Planters

Remove standing water

Window Screens

Door Screens

ACTIVITY 2

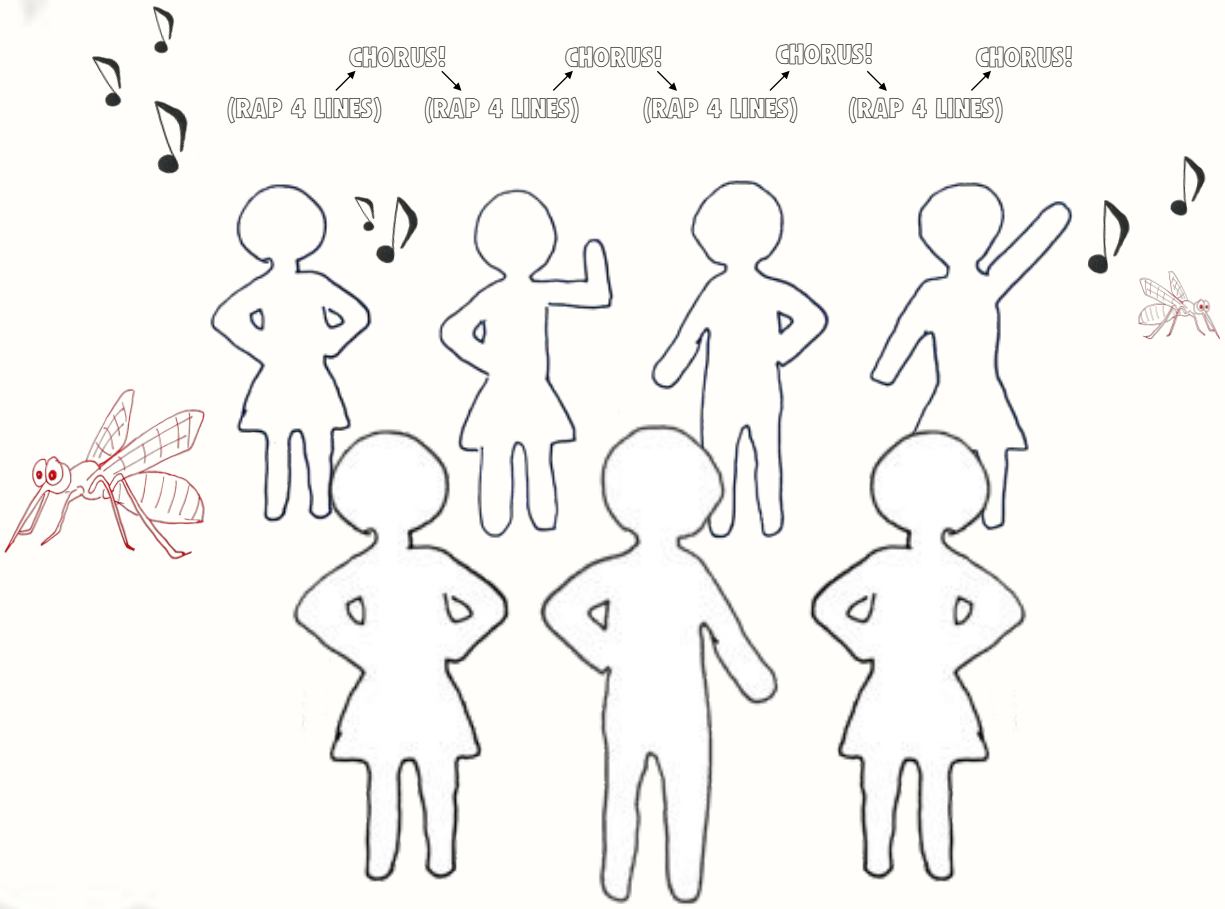
Really Bad Rap

Players will be split into groups of 3-5 and will have five minutes to create a bad rap about Zika.

Every person will have one verse (four lines). The group will identify a chorus and sing it all together after every verse. The players will need to find their own rhythm and have fun making up a really bad rap about Zika.

After five minutes (timed), the groups will perform for each other.

TWIST: After the first group goes, ask the second group to perform the first group's rap just from memory. This really makes people get out of their head and get silly because so many of the details are botched.



ACTIVITY 3

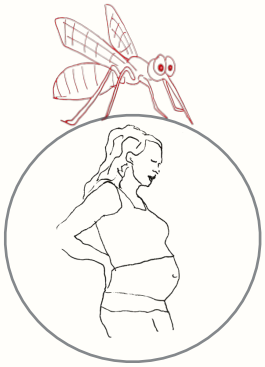
Giving a Fear Form / Teaching Mindfulness in Experiencing Symptoms

An instructor is the narrator. When all the players are on stage, the narrator asks, "What about Zika scares me?" Then the instructor beings to point to people at random on the stage and they will begin to share what scares them about Zika. But here's the trick: they can only choose one or two words to express their fear. Then they will have to show their fear with a body-motion inspired by what they are feeling to express that fear. This activity is designed to examine how the players feel fear in their bodies and acknowledge it so they can work through it together in a safe, non-invasive way. Players can keep repeating their word at any frequency they wish and change how they say it based on how they are feeling.

Keep this going for 20 minutes. This activity is really designed to get people out of their minds and provide a clearing space for their fears about Zika.

"WHAT ABOUT ZIKA SCARES ME?"

"MY CHILDREN! MY CHILDREN. MYYYY CHILLLLDREN. CHILDREN..."



"PREGNANCY COMPLICATIONS PREGNANNNCCY COMPLICAAATIONS P-R-E-G-N-A-N-C-Y"

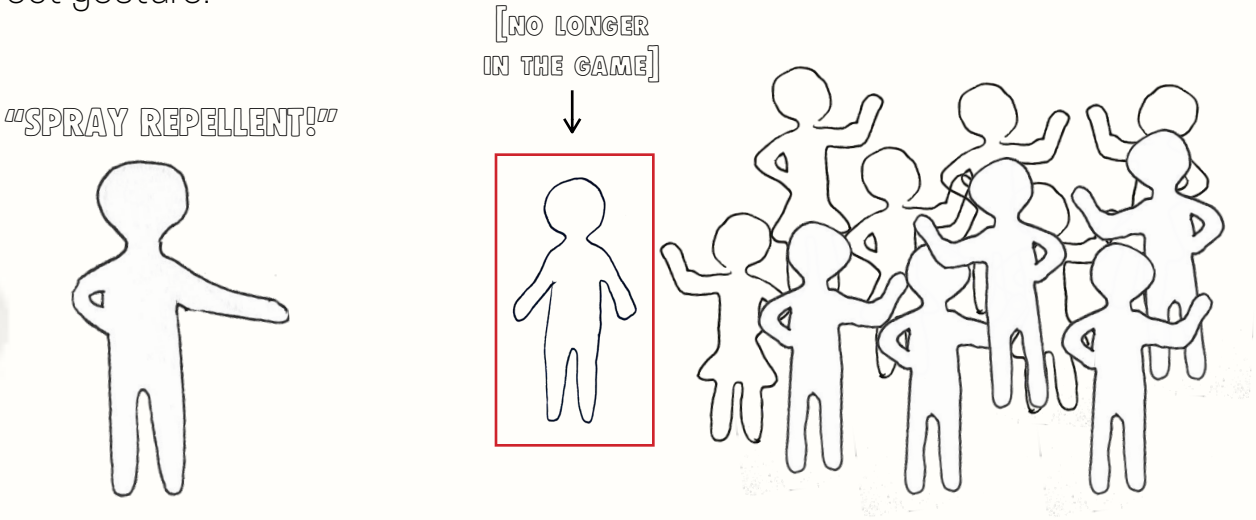
"TRAVEL, VACCINE TRAVELLLL VACCINE!"

ACTIVITY 4

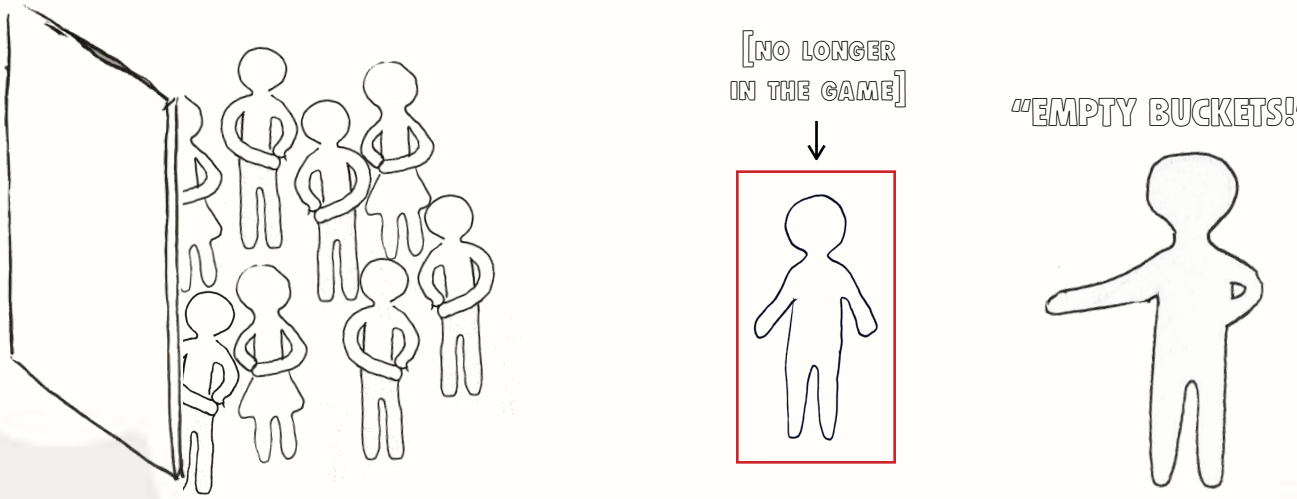
Gesture Race

Once players have learned the gestures, it's time to test how fast their recall is. A non-player takes on the role of the announcer (and judge). The announcer calls out a gesture and the last person to do the gesture correctly - based on the announcer watching the group - is no longer in the game.

This is doable with 1 announcer with a group of about 20. Also as people get eliminated, they can help the announcer determine who was last to make the correct gesture.



Another way to make this more active is define "walls" for the playspace and assign a few of the prevention "gestures" a wall. The last person to run to this side of the playspace is no longer in the game. After that, everyone returns to closer to the center of the playspace. Example: "Empty buckets" gesture is to run to back of the playspace and make a gesture that looks like dumping out water from a bucket.

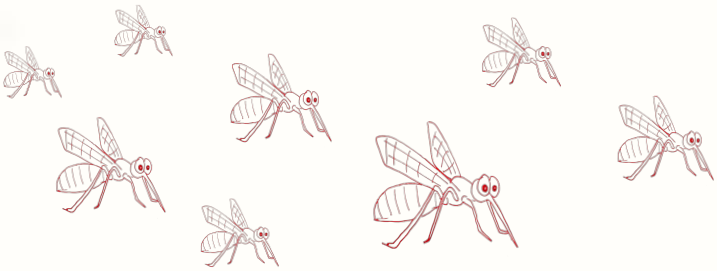


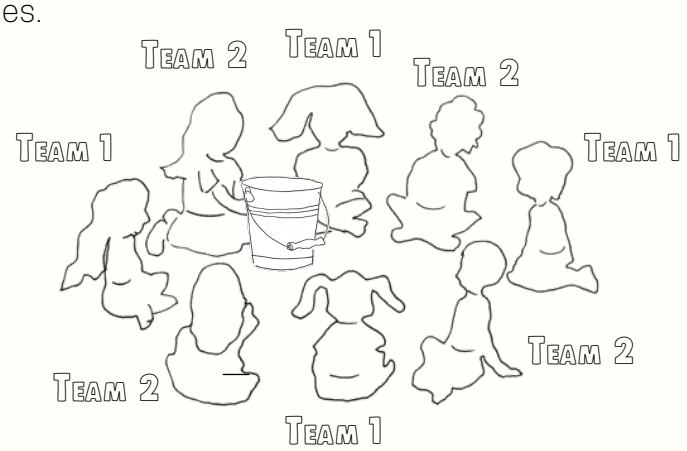
ACTIVITY 5

The Hat Game

Each person is asked to write down 3 words or phrases on slips of paper, which are then folded individually and all put into a hat (or bucket or similar). The theme should be around Zika, or Zika prevention, or things people think of when they hear Zika.

Individuals are sitting around in a circle and divided into two teams, with players sitting next to each other on opposite teams. (If it's easier, have them do a countoff, but what's important to note is that each player will be sitting next to individuals on both sides who are on the other team). There will be three rounds for this game: 1) Taboo 2) One Word 3) Charades.





Taboo

The first team chooses someone to go first, while the second team sets the timer for one minute. The person from the first team will grab a piece of paper from the container and try to have his/her teammates guess the word on the paper using only use words and sentences, just like is done in Taboo. If the team is unable to guess the word/phrase, an individual can choose to "pass" one time during a round and then put the word/phrase back into the container and continues with a new word/phrase. The second team will then do the same thing for a one minute period. This process alternates until all of the words have been guessed. At the end of this round, the words/phrases will be placed back into the hat.

One Word

In this round, each individual can use only one word as a hint for their team to guess each word on the slip of paper. Again, the goal is to get as many correct answers as possible during the one minute time frame. After one minute is up, they will then switch to the other team for a one minute time frame. Each team can recall the words/phrases in the previous round, which have been recycled for this round. Once all the words are answered, the words will need to placed back into the hat for the third round of charades.

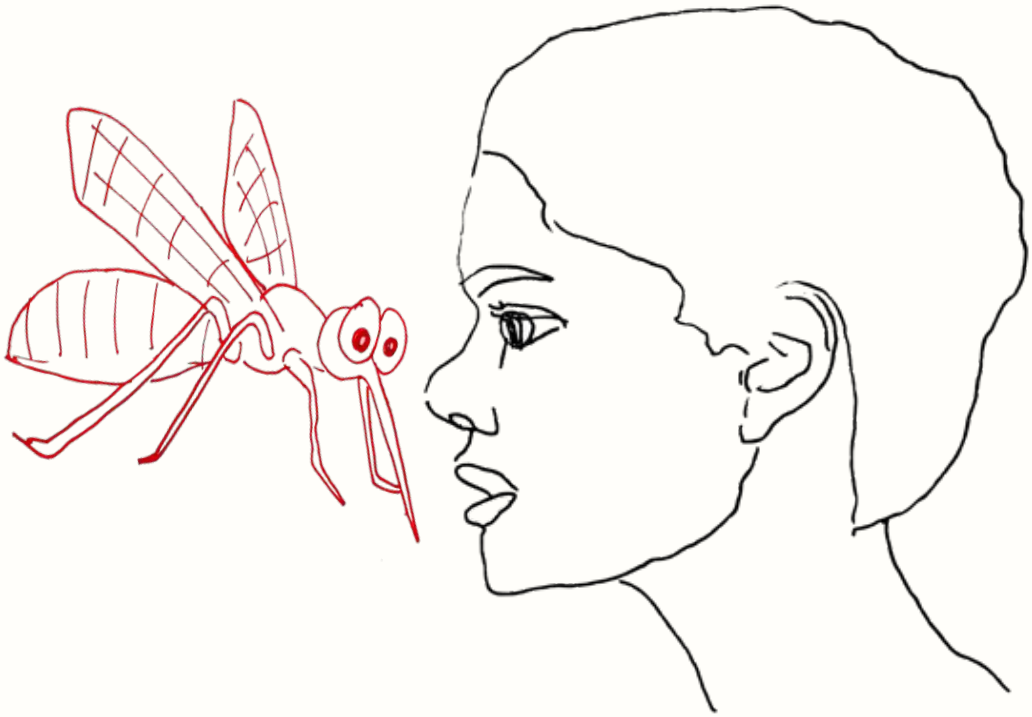
Charades

In the last round, the individuals will act out motions (or play Charades) so their team can guess the word/phrase on each slip of paper. Again, this will be done until all the words run out with teams alternating turns each time the timer runs out.

Winning

Tally all the points accrued by each team across the three rounds. The team with the most points wins.

Humans vs. Mosquitos Game



The original game was to emphasize the relationship between VBD and climate change, but the core game teaches about the relationship between Humans and their health and the health or strength of Mosquitoes due to their eggs being laid as larvae in breeding grounds.

The simplest form of the game is the tabletop gesture-based game, which can be found here: http://humansvsmosquitoes.com/how-to-play/table-top-edition/

The supporting materials, as well as a demo video, are available on this webpage

A smaller format of the instructions is available on the following pages!

Humans v. Mosquitoes: Gesture-based version

Special thanks to Yale Peabody Museum of Natural History ad Peabody Fellows Explorers and Investigators for helping to test and formalize the game rules.

Game Overview

Purpose

Demonstrate how climate change will affect humans, mosquitoes, and the transmission of vector-borne infectious diseases.

Target Audience

- Children in developing countries where vector-borne diseases such as malaria and dengue fever are prevalent.
- Red Cross Red Crescent workers, parents, teachers, physicians and nurses in developing countries.
- Participants at conferences on climate change and governmental and non-governmental health agencies (United Nations, World Health Organization, Red Cross Red Crescent)
- Students in the United States in grades 6–12.

Number of Players

A minimum of 6 players and 1 facilitator are needed to play the game.

- Designate 3 players as Humans and 3 as Mosquitoes.
- Divide the rest of the class into two groups—Team HUMAN and Team MOSQUITO—that provide support and strategy to these players.
- Players can trade places with teammates at any time throughout the game.

Time Required

30–45 minutes.

Game Equipment

- Table space for each group of 6 players.
- 6 Habitats: Laminated pictures of places where mosquitoes can lay eggs that will hatch (birdbath, freshwater marsh, vernal pool, tire dump, rainwater barrels, and rain gutters).
- 23 Blood Tokens (red glass pebbles or small river rocks): A Blood Token has multiple functions. It represents EGGS for Mosquitoes, LARVAE for Habitats, and HEALTH for Humans.
- 8 Climate Cards, like “Chance Cards” in Monopoly®, introduce a realistic scenario that connects climate change, mosquito behavior, human susceptibility to disease and humanitarian aid.
- 6 Nametags for players.
- Dice to roll to determine which Mosquito dies when a Habitat is cleared.

Game Plan

Play the game like Rock, Paper, Scissors mixed with Freeze Tag. When the facilitator says “1,2,3, GO!” each player commits to an action and freezes.

Rules

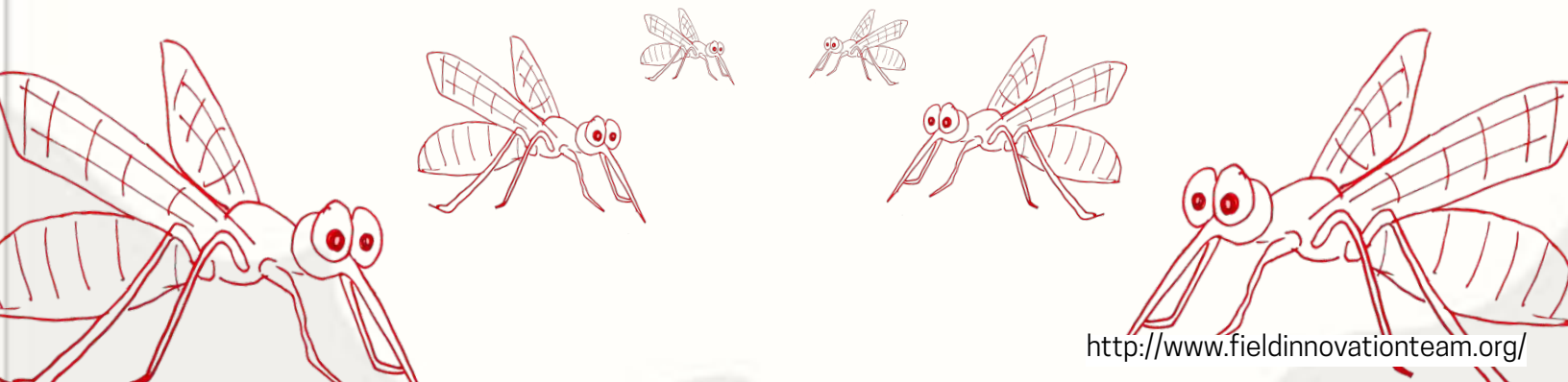
Game Objective

Both teams just want to stay alive! It is better if the Humans win, but this is not always the outcome. Mosquitoes WIN if they kill all the Humans first, by depleting their HEALTH! Humans WIN if they kill all the Mosquitoes first, by clearing out Habitats where eggs hatch into LARVAE!

Game Setup

In developing countries, people play the game without store-bought game pieces. Facilitators must be resourceful in finding game pieces such as rocks, sticks or small pieces of paper. Using rocks allows players to imagine that they are learning the game in a developing country, the way Red Crescent workers teach it.

1. Select 1 facilitator to run the game and keep track of every intended action. The facilitator also collects Blood Tokens when a Mosquito bites or a Human kills a LARVA.
2. Select 3 Humans and give them 12 Blood Tokens to divide. Divide up all tokens so Mosquitoes do not know which Humans have the most tokens and are healthiest. Humans stand on one side of the table and hide their tokens.
3. Select 3 Mosquitoes and give them 2 Blood Tokens to divide up so Humans do not know who has extra eggs. Mosquitoes stand on the opposite side of the table and hide their tokens. All Mosquitoes are female. Blood Tokens represent EGGS for a Mosquito, as she must feed on blood to develop her eggs, which hatch into larvae.
4. Set up 3 Habitats at the start of the game. The Mosquitoes can distribute 9 Blood Tokens among all 3 Habitats (where they will lay their eggs) any way they want. Suggested: Site 1 = 2 Tokens; Site 2 = 4 Tokens; Site 3 = 3 Tokens.



5. Students who are not actively playing the game can split up and advise the players on strategy. Team HUMAN helps the Humans decide how to distribute their Blood Tokens (HEALTH). Team MOSQUITO helps the Mosquitoes strategize about egg placement in Habitats.

Basic Gameplay

The game takes places over a series of rounds. At the start of each round, Team Human may consult with their team on a strategy as to what action each player should consider taking (see chart below). Team Mosquito may also do the same, or the facilitator can prevent them from consulting with each other since mosquitoes in real life don't coordinate on their strategy.

When the facilitator says "1, 2, 3, Go!" each player must commit to an action and then freeze, similar to Rock, Scissors, Paper. *Note: Players must indicate clearly which action they intend to take. Mosquitoes must point clearly at the Human they intend to bite or at the Habitat where they plan to lay an egg that will hatch into a Larva. Humans must point clearly at the Habitat where they intend to kill a Larva. Players cannot change their minds after seeing other players' actions.*

The facilitator acknowledges players individually and allows each one to carry out their selected action. The actions and the results of each action are described below. The latter depends on whether you're playing the short or long version.

Discuss how this situation might reflect real life, according to what happened in the Round.

	Goal	Respective Action
Humans	**Protect** yourself from mosquito bites.	**Cross arms** across chest *
	Kill **larvae** by clearing out **habitats**.	Point at a **habitat** that you want to clear.
Mosquitoes	Bite **humans** and feed on blood to develop eggs that hatch into **larvae**.	Point at a **human**.
	Lay eggs to repopulate **habitats** with **larvae**.	Point at a **habitat**.

** In some cultures, crossed arms are inauspicious so this can be another action agreed upon by players such as putting thumb on the table.*

Short Version

The facilitator collects transferred Blood Tokens for each Mosquito that bites a Human and for each Human who kills a larva.

Limiting the number of Blood Tokens in circulation allows the game to resolve within a few rounds. This will allow more student participation if you change roles between rounds.

Long Version

If a Mosquito bites a Human, the Mosquito player takes a Blood Token, which reduces the Human's HEALTH and symbolically turns into an egg. If a Human takes a LARVA from a Habitat, that Human keeps the Blood Token and is symbolically healthier (as in less likely to be bitten and infected).

Keeping Blood Tokens in circulation lengthens the game, allowing more Climate Cards to be introduced to the game.

Adding in climate change narrative (optional variation)

First play a few rounds of the Basic Gameplay to help students learn the game. Then start using Climate Cards to change the course of the game. Draw cards randomly and follow the instructions on the card, or select cards to fit the situation or lesson. Climate Cards can allow Mosquitoes, Humans or Habitats to "come back to life" under certain circumstances.

At game end

When one game ends, switch roles and begin a new game. Ask players to write a description of what happened in the game and how this reflects real life issues.

Game clarifications

- **Mosquitoes** must either lay eggs in a Habitat or bite a Human.
- Mosquitoes cannot transfer eggs between themselves.
- Any Mosquito can lay eggs in any Habitat.
- Mosquitoes do not kill Humans directly by biting, but they take a Blood Token when they bite. This weakens Human Health by increasing the chance of disease transmission.

Humans have the choice to protect themselves from Mosquito bites or to clear out a Habitat and prevent Mosquitoes from multiplying there.

- Humans cannot directly kill adult Mosquitoes. In real life, it is far more difficult for humans to kill adult mosquitoes than to clear the habitats where eggs hatch into larvae.
- Humans with few Blood Tokens could represent people who are more susceptible to disease because they are very old or very young, are already sick with another disease, or are malnourished.

- Humans with many Blood Tokens could be young and healthy or have good access to healthcare and nutritious foods.
- Humans die when they run out of Blood Tokens (Health). Players are on the honor system to report that they have no more Blood Tokens.
- Blood transfusions are not allowed! One Human cannot give Blood Tokens to another Human.

A **Habitat** is lost when Humans have cleared all the Blood Tokens (killed all of the Larvae in the Habitat).

- Remove the Habitat from the table.
- One Mosquito must die when a Habitat is cleared. Roll the dice to determine which Mosquito dies.
- All of a Mosquito's eggs are lost when that Mosquito dies.

Troubleshooting tips

- ***"This game isn't fair!"*** Humans have a slight statistical advantage, which reflects real life. It would be inappropriate to give students the idea that mosquitoes could overcome humans in this scenario.
- **Do not allow shortcuts.** If a Mosquito bites a Human and then that Human kills a Larva, allow both players to carry out their respective actions. Do not allow the Mosquito to take a shortcut by taking a LARVA from the Habitat. Even though this is the net result of these two actions, the purpose of each individual action would be lost or confused.
- **Humans cannot protect themselves all the time.** Humans are tempted to protect themselves, rather than risk Mosquito bites, by killing a Larva. Sometimes all three Humans may protect themselves. If so, take this opportunity to discuss how that strategy would be not be effective in real life and will not allow the game to move forward.

Game Background

In Fall 2011, a group of Yale University professors gave their graduate students an assignment to help the Red Cross Red Crescent teach people how mosquito-borne diseases such as dengue fever and malaria could expand with climate change. The Yale students got together with student game designers from Parsons The New School for Design and they invented a game called Humans vs. Mosquitoes. Games are a great way to teach a lesson while having fun, so adults learn along with the children. Since its creation, adults and children around the world have played this game to learn how simple actions can help stop the spread of dangerous diseases. Thousands of people of all ages have learned the game in Kenya, South Africa, Uganda, Vietnam and the Philippines.

Game Focus

To educate about (1) the risk factors for dengue, especially those related to climate change, and (2) the consequences of human behaviors that affect the spread of dengue.

Over 2.5 billion people worldwide are at risk of contracting dengue. From 50 to 100 million cases of dengue fever and 250,000 to 500,000 cases of dengue hemorrhagic fever occur each year in more than 100 countries. Dengue—found in tropical and subtropical climates, and in urban and semi-urban areas— is spread by infected female mosquitoes (Aedes aegypti). Four different viruses cause dengue. An infected person will develop lifelong immunity to that specific virus and transient immunity to the other three viruses.

There is no vaccine, cure or specific treatment for dengue fever, so prevention remains the only effective strategy. Dengue can be prevented through control of the mosquito population with biological, chemical and environmental methods. The Red Cross Red Crescent promotes dengue interventions that focus on the importance of clearing mosquito habitats rather than using insecticides. This game highlights the importance of prevention, especially by clearing mosquito habitats.

Climate change will influence the transmission of dengue. Fluctuations in rainfall, warmer weather and water shortages will all increase the prevalence of this disease. The Red Cross Red Crescent is one of the humanitarian agencies that are actively responding to the healthcare effects of climate change by organizing education and habitat clearing campaigns to reduce the spread of dengue in countries such as Peru, Bolivia and Paraguay. Climate change will place a greater burden on humanitarian agencies responding to dengue epidemics. These organizations will require increased support to reach the most vulnerable populations worldwide.

For more information: http://humansvsmosquitoes.com