

GROWING UP HEALTHY



People
and the
Planet

Lessons for a Sustainable Future

INTRODUCTION

Children under the age of five are especially at risk when it comes to **public health** issues. Having a less developed immune system means they are at higher risk of malnutrition, dehydration, diarrhea and infectious diseases. In addition, contracting a serious illness or experiencing malnutrition at a young age can negatively impact the rest of a child's life. Large strides have been made in children's health over the last few decades. Globally, the number of deaths of children under the age of five halved between 1990 and 2013. And in developing countries, the percentage of underweight children dropped from 28 percent to 17 percent over the same time period (1990 to 2013).¹ Immunization rates have increased significantly, meaning more children are protected from dangerous diseases like measles, tuberculosis, and whooping cough.

Despite these global gains, children in **less developed countries** still face greater health risks. Factors at the individual level, like hand washing, as well as family circumstance and national policies, like funding for vaccines and basic health care, all impact a child's ability to grow up healthy. Population growth in the coming decades will only compound these challenges, making it harder to meet the needs of children in developing countries around the world. By understanding the current health challenges, students will be better equipped to identify which public health measures will be most effective in keeping people healthy in the years ahead.

MATERIALS

For each group:

- Growing Up Healthy game board (provided)
- YOUR MOVE and CHANCE cards (provided)
- 6 game pieces (provided, or borrow from other games)
- 50 small objects, such as pennies, to use as tokens
- Container to use as the "bank"
- Timer

CONCEPT

Raising a child to age five can be especially challenging without an adequate public health system.

OBJECTIVES

Students will be able to:

- Identify two or more public health measures that positively impact child health.
- Identify two or more factors that have negative impacts on child health.
- Explain how circumstances at the individual, family, community, and national level affect child health.

SUBJECTS

Social studies (geography, economics), science, family and consumer sciences

SKILLS

Reading comprehension, critical thinking, identifying trends and patterns

METHOD

Through a board game, students are presented with various health-related scenarios that can hurt or help child health and then discuss which public health measures are most effective in keeping people healthy.

PROCEDURE

1. Before class, connect the two halves of the Growing Up Healthy game boards and cut out the "YOUR MOVE" and "CHANCE" cards. Place the tokens in the "bank." You will need enough sets of the game pieces for each small group of six to have one set. Divide students into groups of six and distribute the game materials to each group.
2. Read the following paragraph aloud:

"Everyone playing the game is a child growing up in the same rural community in a less developed country. In the game, you (and sometimes your family) face situations that improve or worsen your health. And sometimes, your entire community is affected. Your goal is to finish the game in the best possible health. Beware... your fate is in the cards!"

3. Allow students time to play the game. Players will take turns drawing YOUR MOVE cards, which present health-related scenarios faced by the child, the child's family, or the community. Depending on whether the scenario helps or hurts a child's health, the player moves his/her game piece forward or back. The play ends after eight minutes.
4. After the game concludes, be sure students "score" their public health knowledge using the scoring guidelines on their game board.

DISCUSSION QUESTIONS

1. How did you feel about what happened to you during the game?

Answers will vary. Students may feel frustrated that many of the factors that led to poor health were out of their control, like the amount of government spending or aid, someone else in the game getting sick, or a drought leading to a poor food crop.

2. What relationship did you notice between wealth level (number of 'tokens') and health? What factors contributed to a family having wealth?

Players with more chips could afford to purchase immunizations, antibiotics, mosquito netting, rehydration solution, and Vitamin A supplements. Families whose parents had a secondary education, jobs, and could read had greater wealth.

3. Based on the game, what factors have the most negative impact on child health? What about positive impact?

Negative impact: lack of vaccines and mosquito netting, low family income, limited access to medical aid and supplies, war, and poor crop harvests. Positive impact: high income, access to medical care and vaccines, stable crop yields, sanitation and clean water supply, and the absence of war.

4. Why do you think there were "CHANCE" cards included in the game?

Many of the factors that impact health are up to chance – for example, how your body responds to an illness or if there is a free health clinic nearby.

ASSESSMENT

Students write down two factors that lead to poor health and two factors that lead to good health.

FOLLOW-UP ACTIVITIES

1. Have small groups of students create a PSA announcement related to one of the public health initiatives mentioned in the lesson.
2. There are many organizations making gains in the area of child health. Have students pick an organization, plan a class or school-wide fundraiser, and donate all the proceeds to the organization of choice. Examples of organizations include UNICEF, The Global Fund to Fight AIDS, Malaria, and Tuberculosis and the International Vaccine Institute.

Adapted with permission from Rx for Child Survival (http://www.wtc.pbs.org/wgbh/rxforsurvival/campaign/givetime/pdf/Rx_Growing_Up_Healthy.pdf) ©2005 WGBH Educational Foundation and Vulcan Productions Inc.

GROWING UP HEALTHY GAME BOARD

Instructions:

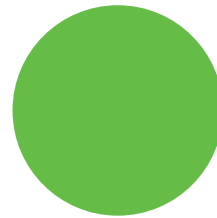
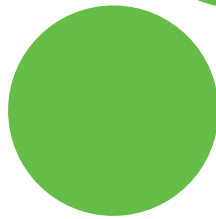
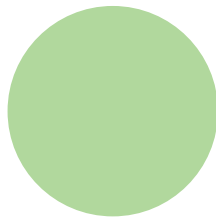
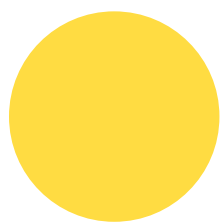
Everyone playing the game is a child growing up in the same rural community in a less developed country. In the game, you (and sometimes your family) face situations that improve or worsen your health. And sometimes, your entire community is affected. Your goal is to finish the game in the best possible health. Beware... your fate is in the cards!

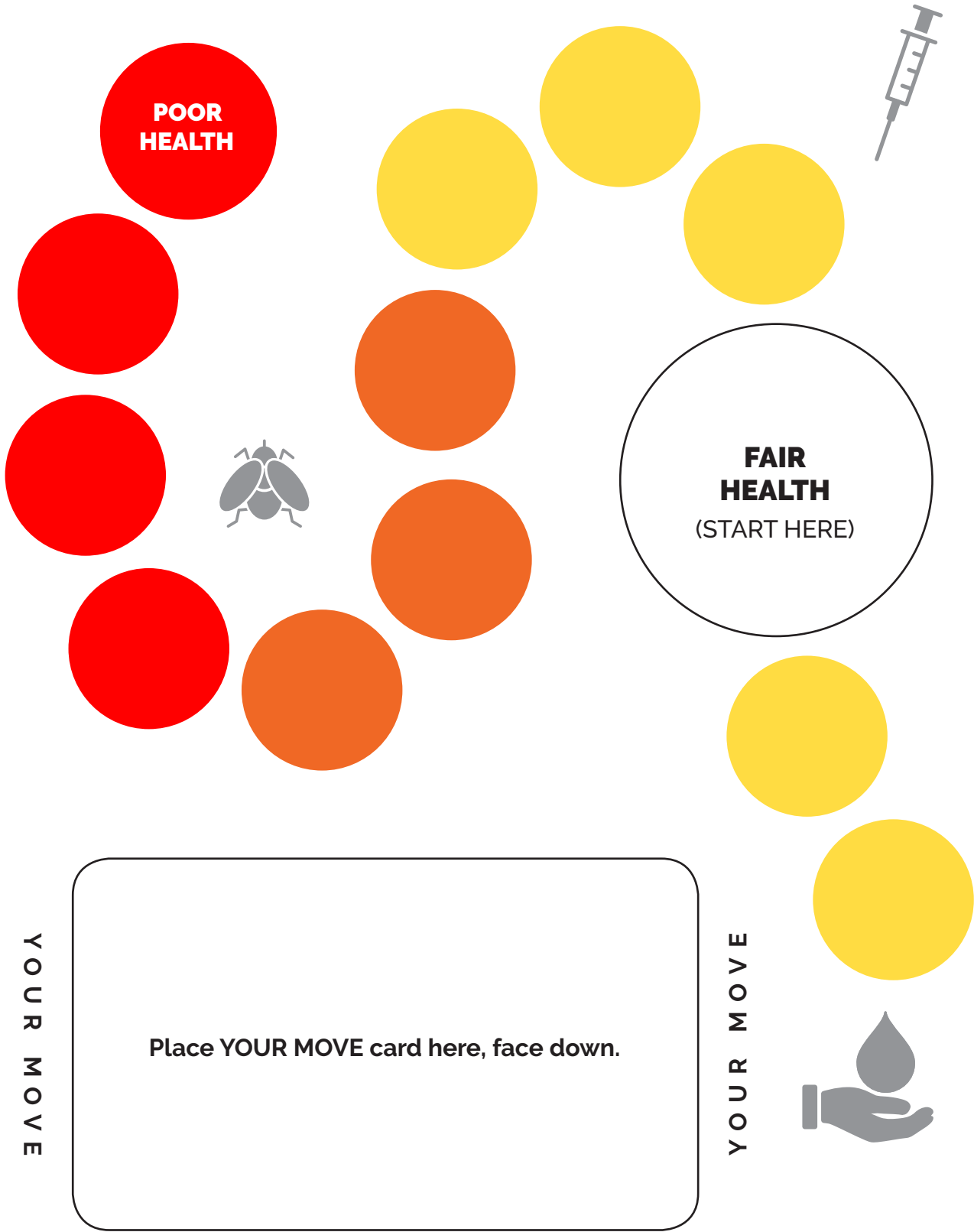
1. Place your game piece on FAIR HEALTH.
2. Take five tokens from the bank. (This is your money to spend during the game.)
3. Set the timer for eight minutes.
4. The play goes clockwise, with the youngest player going first.
5. On your turn, take a YOUR MOVE card and follow the instructions. (Put card in discard pile unless you are keeping it. If you run out of cards, shuffle and reuse them.)
6. The game ends when the time runs out.

Scoring:

How many public health measures that kept you healthy during the game can you recall?

- 1 – 3 measures: Try again!
- 4 – 6 measures: You're paying attention!
- 7+ measures: Public health expert!





GROWING UP HEALTHY

CHANCE CARDS

CHANCE

You receive care at a free clinic.
Move 1 place toward GOOD HEALTH.

CHANCE

Your condition remains stable.
Stay where you are.

CHANCE

Your condition remains stable.
Stay where you are.

CHANCE

You receive care at a free clinic.
Move 1 place toward GOOD HEALTH.

CHANCE

You receive care at a free clinic.
Move 1 place toward GOOD HEALTH.

CHANCE

Your condition remains stable.
Stay where you are.

CHANCE

Your condition worsens.
Move 1 place toward POOR HEALTH.

CHANCE

Your condition improves.
Move 1 place toward GOOD HEALTH.

CHANCE

Your condition improves.
Move 1 place toward GOOD HEALTH.

CHANCE

Your condition worsens.
Move 1 place toward POOR HEALTH.

CHANCE

Your condition worsens.
Move 1 place toward POOR HEALTH.

CHANCE

Your condition improves.
Move 1 place toward GOOD HEALTH.

GROWING UP HEALTHY

YOUR MOVE CARDS

YOUR MOVE: Your family has a good harvest and will have plenty of food this year.

- **Move 2 places toward good health.**

Did you know? Poor nutrition causes nearly half (45%) of deaths in children under five.¹

YOUR MOVE: A clinic has Vitamin A to protect your vision.

- **Pay 2 tokens to the bank to buy Vitamin A and move 1 place toward good health.**
- **If you cannot afford to buy Vitamin A, move 1 place toward poor health.**

Did you know? Each year, an estimated 250,000 to 500,000 children go blind because of a Vitamin A deficiency.³

YOUR MOVE: You have severe diarrhea and become dehydrated.

- **To recover, pay 2 tokens to the bank for oral rehydration solution. Move 1 place toward good health.**
- **If you cannot afford oral rehydration solution, take a CHANCE card.**

Did you know? Diarrhea is a leading cause of death among children under five years old.²

YOUR MOVE: A limited supply of insecticide-treated netting is being sold in your community.

- **Pay the bank 2 tokens to buy netting to protect yourself from mosquitoes carrying malaria. Move 1 place toward good health.**

Keep this INSECTICIDE-TREATED NETTING CARD to show you are protected.

- **If you cannot afford netting, move 1 place toward poor health.**

YOUR MOVE: You have clean drinking water.

- **Move 2 places toward good health.**

Did you know? Nearly 1 in 10 people worldwide lack access to safe water.

YOUR MOVE: You get pneumonia.

- **Pay 2 tokens to the bank for antibiotics and move 1 place toward good health.**
- **If you can't afford antibiotics, take a CHANCE card.**

Did you know? Pneumonia can be treated with antibiotics, but only one-third of children with pneumonia get the antibiotics they need.⁴

YOUR MOVE: A local health clinic offers vaccines.

- **Pay the bank 2 tokens to be immunized against measles, diphtheria, and whooping cough. Move 1 place toward good health.**

Keep this IMMUNIZATION CARD to show you are immunized.

- **If you cannot afford to be immunized, move 1 place toward poor health.**

YOUR MOVE: Your parents lose their jobs and are unable to provide you regular meals.

- **Move 2 places toward poor health.**

Did you know? Malnutrition makes people more vulnerable to becoming sick.

YOUR MOVE: War erupts in your country, and you move to a refugee camp.

- **Everyone moves 3 places toward poor health.**

Did you know? In refugee camps, overcrowding and unsanitary conditions promote the spread of disease.

YOUR MOVE: You were breastfed as a baby.

- **Move 1 place toward good health.**

Did you know? Breastfeeding provides essential nutrients and boosts a baby's immune system.

YOUR MOVE: Your parents have a secondary education, can read, and have good jobs.

- **Take 2 tokens from the bank and move 1 place toward good health.**

Did you know? According to the World Health Organization, higher education level and income is linked to better health.

YOUR MOVE: You get the flu.

- **Take a CHANCE card.**

Did you know? People with the flu are contagious from a day before they feel symptoms to up to a week after feeling sick.

YOUR MOVE: Your government has increased the amount it spends on public health.

- **Everyone moves 2 places toward good health.**

Did you know? In 2014, the U.S. spent an average of \$9,403 per person for health care. In Mexico, the average was \$1,122. In Afghanistan, it was \$167*.⁵*

**amount in purchasing power parity (PPP)*

YOUR MOVE: Aid organizations cannot deliver medical supplies to your remote area.

- **Everyone moves 2 places toward poor health.**

Did you know? Geographical barriers, political instability, and mistrust of foreign governments can keep health workers from reaching people in need.

YOUR MOVE: A drought destroys half your family's food crop, and you become malnourished.

- **Move 2 places toward poor health.**

Did you know? The USDA recommends 2,200-2,400 calories a day for an active woman and 2,600-3,200 calories a day for an active man.

YOUR MOVE: A limited supply of insecticide-treated netting is being sold in your community.

- **Pay the bank 2 tokens to buy netting to protect yourself from mosquitoes carrying malaria. Move 1 place toward good health.**

Keep this INSECTICIDE-TREATED NETTING CARD to show you are protected.

- **If you cannot afford netting, move 1 place toward poor health.**

YOUR MOVE: Your family has a good harvest and will have plenty of food this year.

- **Move 2 places toward good health.**

Did you know? Poor nutrition causes nearly half (45%) of deaths in children under five.⁶

YOUR MOVE: One of your parents becomes seriously ill and cannot take care of you.

- **Move 2 places toward poor health.**

Did you know? As of 2014, around 13 million children worldwide had lost a parent to AIDS. More than 80% of these children live in sub-Saharan Africa.⁷

YOUR MOVE: You wash your hands regularly with soap and hot water.

- **Move 1 place toward good health.**

Did you know? Unwashed hands can spread diseases, such as colds, flu, strep throat, ear infections, and diarrhea.

YOUR MOVE: An epidemic strikes your community. Everyone gets sick.

- **Each player takes a CHANCE card.**

Did you know? In high income countries, people most commonly die from chronic diseases like heart disease or cancer. In low income countries, people most commonly die from infectious diseases like malaria, AIDS, and tuberculosis.

YOUR MOVE: Your family filters its water.

- **Move 2 places toward good health.**

Did you know? By filtering water through old saris, Bangladeshi women in one community cut the incidence of cholera by 50%.

YOUR MOVE: A \$100 donation enables your local clinic to buy 1,000 oral rehydration solution packets.

- **Everyone moves 1 place toward good health.**

Did you know? These packets cost about 10 cents each and annually could prevent over 1 million child deaths from dehydration associated with diarrhea.

YOUR MOVE: A local health clinic offers vaccines.

- Pay the bank 2 tokens to be immunized against measles, diphtheria, and whooping cough. Move 1 place toward good health.

Keep this IMMUNIZATION CARD to show you are immunized.

- If you cannot afford to be immunized, move 1 place toward poor health.

YOUR MOVE: You are exposed to measles.

- If you have an IMMUNIZATION CARD, you are protected. Move 1 place toward good health.
- If not, you contract measles and infect other players. All players not immunized get measles. They each take a CHANCE card.

Did you know? From 2000-2014, measles vaccination prevented an estimated 17 million deaths, making the measles vaccine one of the best buys in public health.⁸

YOUR MOVE: Your community has a sanitation system.

- Everyone moves 2 places toward good health.

Did you know? 68% of the world population uses an improved sanitation facility (which means human waste is separated from human contact).⁹

YOUR MOVE: You are exposed to diphtheria.

- If you have an IMMUNIZATION CARD, you are protected. Move 1 place toward good health.
- If not, you contract diphtheria and infect other players. All players not immunized move 1 place toward poor health.

Did you know? Vaccines, which cost less than one dollar per dose, are one of the most cost-effective public health interventions.

YOUR MOVE: You are exposed to whooping cough.

- If you have an IMMUNIZATION CARD, you are protected. Move one place toward good health.
- If you do not have an IMMUNIZATION CARD, move 1 place toward poor health.

Did you know? Whooping cough is extremely contagious and easily spreads from person to person through coughing and sneezing.

YOUR MOVE: Malaria-carrying mosquitoes are abundant in your community.

- If you have an INSECTICIDE-TREATED NETTING CARD, you are protected. Move 1 place toward good health.
- If not, you get malaria. Take a CHANCE card.

Did you know? Children under 5 years old are one of the most vulnerable groups affected by malaria.

YOUR MOVE: One of your parents gets a higher-paying job.

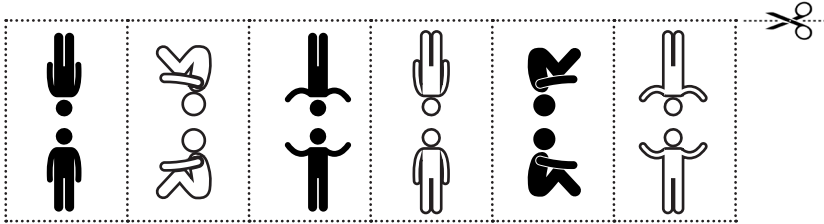
- Take 2 tokens from the bank and move 1 place toward good health.

Did you know? The higher a country's average income, the higher its average life expectancy.

YOUR MOVE: It is the rainy season and there are more malaria-carrying mosquitoes.

- Players with INSECTICIDE-TREATED NETTING CARDS are protected. They each move 1 place toward good health.
- Players who are not protected get malaria. They each take a CHANCE card.

Did you know? Insecticide-treated netting costs \$2.50 per net.¹⁰



Cut along dotted lines and fold in half.

^{1,6} World Health Organization, Children: Reducing Mortality Fact Sheet, 2016

^{2,9} World Health Organization, Key Facts from 2015 Joint Monitoring Programme Report (JMP)

³ World Health Organization, Micronutrient deficiencies

⁴ World Health Organization, Pneumonia Fact Sheet, 2016

⁵ The World Bank, Health Expenditure per Capita (US\$), 2014

⁷ UNICEF, Statistics, Protection, Care and Support for Children affected by HIV and AIDS

⁸ World Health Organization, Measles Fact Sheet, 2016

¹⁰ Against Malaria Foundation, Why US\$2.50 per Net?,