

Gardening in Our Warming World: Youth Grow! Unit One: "What's My Story?" Facilitator Guide



Introduction

In **Unit One: What's My Story**, your group will engage in activities that employ existing knowledge, promote self-awareness, encourage self-control, and explore further self-reflection. Seeing how they themselves as part of a larger more complex system, and how they can evoke positive change within a system, starts with self-assurance confidence. In looking at the big picture, any stress and concerns that our younger generation may have on the fate of their future, has placed a burden on their shoulders that they may not be ready for. As adult leaders, it is our responsibility to provide guidance, awareness, and any evidence needed to for youth to use critical thinking to make informed decisions and choices for their personal well-being.

Select the topics and activities in this unit that best suits your group's skill level, interests and capabilities, as they will prepare youth with any urgency they may feel, and stresses on immediacy of actions. Youth are becoming increasingly aware of the environment around them, whether at home, in school or community, they envision a future that is dependent on their present behaviors and begin to recognize that positive changes no matter how big or small will result in positive outcomes for their future lives.

Keeping the discussion ongoing, direct and open-minded will help dispel any fear or misconceptions youth may have in regard to climate change and how society addresses these issues.

How to Talk About Climate Change with Youth

Since climate change perspectives may differ, it is advisable for educators and youth leaders to be ready to respond to those feeling climate anxiety or those in need of science-based knowledge. To provide the public with awareness of climate change risks, we need to frame conversations around climate change impacts and the capacity of our communities to adapt



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and be engaged. We need not have all the answers to play a critical role in addressing climate change, since this is an ever-changing, complex topic that still has unknown factors. Facilitate conversations and dialogue that allow youth to fully engage and express personal viewpoints, and to process any emotional response such as worry, fear, interest, and curiosity which may emerge in their understanding about climate change vision of the future. We can promote a positive tone while using of scientific evidence, when participating in discussions around the critical nature of the issue and offer strategies for curbing and adapting to climate impacts.

Adapted from Gardening in a Warming World Facilitator's Notebook: For Garden-Based Educators, Volunteers, and Peer Learning Networks



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Target Objectives

- ✓ Identify coping skills and build a stronger sense of self-worth and feelings of control.
- ✓ Practice adaptive strategies rather than avoiding difficult situations.
- ✓ Illustrate solutions to address climate change problems.
- ✓ Illustrate examples which support opinions and ideas in persuasive ways.
- ✓ Demonstrate a basic knowledge of climate change and its relationship with eco-systems.
- ✓ Understand systems thinking as it applies to ones' self and the world around them.

Learning Activities

- 1.1 Inspirational Quotes (all skill levels)..... page 4
- 1.2 What's My Story? (all skill levels)..... page 15
- 1.3 Out of Control (all skill levels)..... page 19
- 1.4 Know & Show (Beginning)..... page 24
- 1.5 Systems Thinking (all skill levels)..... page 27

Thriving Model Attributes

Youth Engagement:

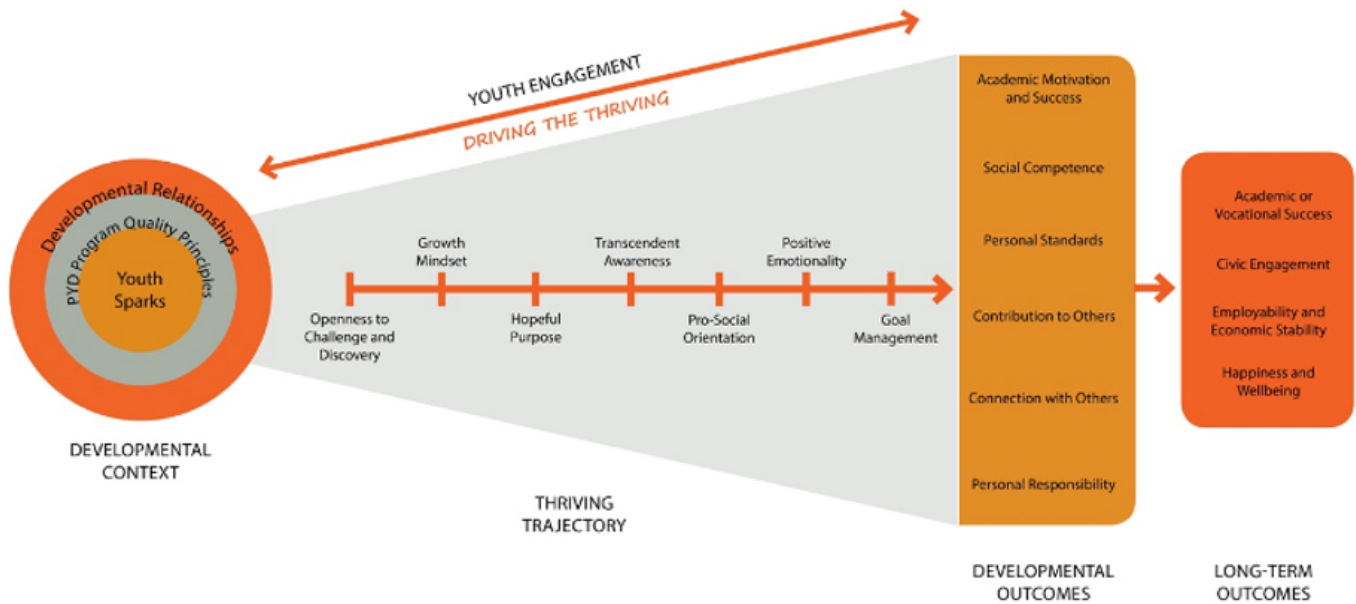
- Growth mindset
- Hopeful purpose
- Pro-social orientation
- Transcendental Awareness
- Positive emotionality

Developmental Outcomes:

- Personal standards
- Personal responsibility

Long-Term Outcomes:

- Happiness and Wellbeing



4-H Thriving Model, Oregon State College of Public Health and Human Science



1.1 Inspirational Quotes: The Power of Change

Skill Level

Intermediate/Advanced

See variations for Beginner level

Learner Outcomes

- Illustrate examples which support opinions and ideas in persuasive ways.
- Demonstrate the impact of word choice in creating tone and interpret connotation of quotes and ideas.

Education Standard(s)

NL-ENG.K-12.2 Understanding the Human Experience

NS.5-8.6, NS.9-12.6 Personal and Social Perspectives: Personal and Community Health

Success Indicators

Compare and contrast inspirational quotations and apply to content area

Life Skills

Relating, character, communication, critical thinking, teamwork

Time Needed

30 minutes

Materials List

Cut outs of inspirational quotes, basket, two poster boards (one marked with the heading "Our Personal Quotes" and the other marked with the heading "Famous Quotes"), easels, tape or thumbtacks to hang poster boards, blank colored paper strips, journal notebook and pens or pencils for each participant

Space

Indoor or protected outdoor space with tabletops or desks for writing and assembling journals. Easel or wall space to hang poster boards

Suggested Group Size

12-15 or more

Acknowledgements

"Inspirational Quotes" by Christine Hadekel, Youth Grow, Cornell Garden-Based Learning

Introduction

Young people use critical thinking skills to explore thoughts and expressions of others, to make connections to self-awareness, ideas, and actions they take, and use these examples to motivate themselves and others by formulating inspirational quotes and

ideas of their own. In this activity, youth will read quotations that inspire positive change and personal growth, then use these as models to craft their own inspirational quote expressing how they see themselves as agents of change.

Opening Questions:

Is there a famous quote that you like, and how does it make you feel? What does this quote mean to you?

Background Information

Before the Activity

- Using the **Inspiration Quotes Activity Handout**, review quotes for appropriate use with your audience. Consider their reading ability, since it would be embarrassing to encourage reading among those for whom the vocabulary is difficult. You may want to give them the opportunity to put their quote back in and select another – that ensures that they do not have to read a quote that is too difficult to wade through.
- Print the selected quotes in large font size. Cut each one along the dotted line so they are in individual strips. There are many ways to use these, and you will likely think of creative opportunities!
- Hang poster board(s) on the wall

Let's Do It!

1. Introduce the activity by explaining that we will be reading quotations that inspire positive change and personal growth, then we will use these as a model to craft their own inspirational quote expressing how they see themselves as agents of change.
2. As a whole group, stand in a circle. Pass around a basket or other container and ask each young person to pull out an inspirational quote, reading their quote out loud to the rest of the group as they do. Ask them to hold onto this quote and bring them to their groups for the next small group activity, modeling questions for small group discussion:
 - What did you like about this quote? Did not like?
 - How/why is this inspirational?
 - Does it inspire you? How?
3. Break participants into smaller groups of 2-3 to discuss these questions about the quotes they read aloud. Then ask each group to come up their own inspirational quote, how they can inspire others to take action for positive change as it relates to climate change, giving them the choice to write one individually or as a group.
4. Have each group tape quotes on the poster boards on the wall, somewhere prominently in the room. One poster can include quotes written by participants, another poster can be the pre-written quotes.
5. Have participants write their favorite inspirational quote on the cover or first page of their journal.

Talk It Over:

- What is your favorite quote that you found?
- How did you interpret it?
- How did it inspire you?

Variations

For Beginning Skill level: Follow steps as written above, then adapt for beginners from this point on:

Opening Questions:

Is there a famous quote that you like, and how does it make you feel? What does this quote mean to you?

Background information:

Before the Activity

- Using the **Fun and Inspirational Quotes Activity Handout** (designed for beginner skill level), review quotes for appropriate use regarding reading ability and comprehension of your group members.
- Print the selected quotes in large font size. Cut each one along the dotted line so they are in individual strips. There are many ways to use these, and you will likely think of creative opportunities!
- Hang poster board(s) on the wall.

Let's Do It!

1. As a whole group, stand in a circle. Pass around a basket or other container and ask each person to pull out an inspirational quote, reading their quote out loud to the rest of the group as they do. Ask them to hold onto this quote and bring it to their small group for the next activity.
2. Break into smaller groups of 2-3 for and ask these questions about the quotes.
3. What did you like about this quote? Did not like?
4. What does it mean to you?
5. Ask each group to come up with a group or personal quote that inspires them, using the famous quotes as examples.
6. Have each group tape both famous and personal / group quotes on the poster boards on the wall, somewhere prominently in the room. One poster can include personal quotes, the other poster can be the pre-written famous quotes.
7. Have participants write their favorite inspirational quote on the cover or first page of their journal.

References

"Inspirational Quotes" by Christine Hadekel, from *Youth Grow, Cornell Garden-Based Learning*, updated by Donna Alese Cooke

Learn More/Virtual Fun/News/Did You Know

- <https://learninginbloom.com/learning-quotes/>
- <https://www.polk-fl.net/staff/resources/documents/keystocharacter/WorkingWithQuotations.pdf>
- <https://www.mensaforkids.org/teach/lesson-plans/quotation-station/>

Youth Handouts: Beginning Level Inspirational Quotes Activity Handout;
Intermediate/Advanced Inspirational Quotes Activity Handout



1.1 Fun and Inspirational Quotes

For Beginning Skill Levels

Prepare in advance:

- Review the following quotes for appropriate use with your audience. Consider their reading ability, since it would be embarrassing to encourage reading among those for whom the vocabulary below is difficult.
- Print the following quotes in large font size. Cut each one along the dotted line so they are in individual strips. There are many ways to use these, and you will likely think of creative opportunities!

“You must be the change you wish to see in the world.”

– Mahatma Gandhi

“Success is not how high you have climbed, but how you make a positive difference to the world.”

Bennett

— Roy T.

“If I cannot do great things, I can do small things in a great way.”

— Martin Luther King Jr.

“I see every person with two eyes. One eye sees who they are today and the other eye sees who they can become tomorrow.”

– Millard Fuller

“If you have good thoughts they will shine out of your face like sunbeams and you will always look lovely.”

– Roald Dahl

“We know what we are but know not what we may be.”

– Shakespeare

“If you can dream it, you can do it.”

– **Walt Disney**

“As human beings, our greatness lies not so much in being able to remake the world, as in being able to remake ourselves.”

– **Gandhi**

“It is not only for what we do that we are held responsible, but also for what we do not do.”

– **Moliere**

“Don’t let what you can’t do stop you from doing what you can do.”

– **John Wooden**

“We all can dance when we find music we love.”

– **Giles Andreae**

“It’s not what happens to you, but how you react to it that matters.”

– **Epictetus**

“When you know better you do better.”

– **Maya Angelou**

“Do what you can, with what you have, where you are.”
– **Theodore Roosevelt**

“You always pass failure on the way to success.”
– **Mickey Rooney**

“No one is perfect – that’s why pencils have erasers.”
– **Wolfgang Riebe**

“Why fit in when you were born to stand out?”
– **Dr. Seuss**

“Never let the odds keep you from doing what you know in your heart you were meant to do.”
– **H. Jackson Brown**

“You can steer yourself any direction you choose.”
– **Dr. Seuss**

“Anything is possible. Anything can be.”
– **Shel Silverstein**

“Nothing is particularly hard if you break it down into small jobs.”
– **Henry Ford**

“When you do the common things in life in an uncommon way,
you will command the attention of the world.”

– **George Washington Carver**

“Winning doesn’t always mean being first. Winning means
you’re doing better than you’ve done before. ”

– **Bonnie Blair**

“Never give up on what you really want to do. The person with
big dreams is more powerful than one with all the facts. ”

– **Albert Einstein**



1.1 Inspirational Quotes

For Intermediate and Advanced Skill Levels

Prepare in advance:

- Review the following quotes for appropriate use with your audience. Consider their reading ability, since it would be embarrassing to encourage reading among those for whom the vocabulary below is difficult.
- Print the following quotes in large font size. Cut each one along the dotted line so they are in individual strips. There are many ways to use these, and you will likely think of creative opportunities!

Without good farming there can be no good food; and without good food there can be no good life.”

– Alice Waters

“I am convinced that my life belongs to the whole community, and as long as I live, it is my privilege to do for it whatever I can, for the harder I work, the more I live.”

– Melnea Cass

Though I do not believe that a plant will spring up where no seed has been, I have great faith in a seed. Convince me that you have a seed there and I am prepared to expect wonders.”

– Henry David Thoreau

“I don’t know what your destiny will be, but one thing I know – the only ones among you who will be really happy are those who will have sought and found how to serve.”

– Albert Schweitzer

“I think the most profound expression of education is action – action in the interest of helping heal what ails our communities, our nation, and our world.”

– Johnnetta Cole

“When I use my strength in the service of my vision, then it becomes less and less important whether I am afraid.”

– **Audre Lorde**

“We have the power to change things. It doesn’t take much to start a revolution of thought and spirit. It takes one person, and then another, and then another. We have to have the willingness to be respectful of each other, to celebrate our differences and not let differences become obstacles. It’s a responsibility and a chore. But when it works, it’s a work of art.”

– **Leonard Zakim**

“Whatever you can do, or think you can, begin it. Boldness has power, and genius, and magic in it.”

– **Goethe**

“I see every person with two eyes. One eye sees who they are today and the other eye sees who they can become tomorrow.”

– **Millard Fuller**

“Not only is another world possible, she is on her way. On a quiet day, I can hear her breathing.”

– **Arundhati Roy**

“We all should know that diversity makes for a rich tapestry, and we must understand that all the threads of the tapestry are equal in value no matter what their color.”

– **Maya Angelou**

“As human beings, our greatness lies not so much in being able to remake the world, as in being able to remake ourselves.”

– **Gandhi**

“Courage is not the absence of fear, but the will to overcome it.”

– **U.S. Marine Corps**

“We do not believe in ourselves until someone reveals that deep inside us something is valuable, worth listening to, worthy of our trust, sacred to our touch. Once we believe in ourselves we can risk curiosity, wonder, spontaneous delight or any experience that reveals the human spirit.”

– **E.E. Cummings**

“All people are caught in an inescapable network of mutuality, in a single garment of destiny. Whatever affects one directly affects all indirectly. I can never be what I ought to be until you are what you ought to be, and you can never be what you ought to be until I am what I ought to be.”

– **Martin Luther King Jr.**

“When written in Chinese, the word “crisis” is composed of two characters. One represents danger and the other represents opportunity.”

– **John F. Kennedy**

“It is in the garden that we get down on our hands and knees and feel the soil draw us into an understanding of the inter-relationships between all living things...It seems to me that the garden is the only practical way for urban societies to come in close contact with the basic realities of life, and if that contact is not close, it is not meaningful at all.”

– **Gene Logsdon**

“It is not only for what we do that we are held responsible, but also for what we do not do.”

– **Moliere**

“Opportunity is missed by most people because it is dressed in overalls and looks like work.”

– **Thomas Edison**

“Everybody can be great. Because everybody can serve. You don’t have to have a college degree to serve. You don’t have to make your subject and verb agree to serve. You don’t have to know about Plato and Aristotle to serve. You don’t have to know Einstein’s theory of relativity to serve. You don’t have to know the second law of thermodynamics in physics to serve. You only need a heart full of grace. A soul generated by love.”

– **Martin Luther King Jr.**



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Reviewers: Marcia Eames-Sheavly, Joy Flynn, CCE Suffolk Master Gardener Volunteer



1.2 What's My Story?

Skill Level

Intermediate

Learner Outcomes

Youth will:

- Identify and build on strengths
- Explore identity
- Build on emotional intelligence
- Understand stress and stressors

Education Standard(s)

- NS.5-8.6 Personal and Social Perspectives: Personal Health, populations, resources, and environments, natural hazards, risks and benefits
- NL-ENG.K-12.4 Communication Skills

Success Indicators

Explores personal feelings, values, strengths, and limitations to realize potential.

Life Skills

Critical thinking, self-motivation, self-esteem, self-responsibility, managing feelings

Time Needed

45 minutes

Materials List

Pens, markers for each participant, **Youth Grow Group Bingo**, one for each participant **Act for Youth Self-Awareness** overview, handouts from **Act for Youth Self-Awareness**, one for each participant:

- Individual Assets
- Gathering Information About Young People's Strengths
- Sparks Peer-to-Peer Interview
- Looking Back: Sparks Interview Questions for Adults (for adult leaders of this activity to better understand Sparks concept and use as a model activity).

Space

Comfortable, safe place for youth to reflect and work in pairs for peer-to-peer interaction.

Suggested Group Size

12-15 or more

Acknowledgements

- Cornell Garden-Based Learning Youth Grow:
<http://gardening.cals.cornell.edu/lessons/curricula/youth-grow/>
- Act for Youth: http://actforyouth.net/youth_development/professionals/sel/

Introduction

Through exploration of one's feelings, values, strengths, and limitations, we realize our potential, and how feelings and thoughts influence what we do. This directly relates to how often young people do not know their strengths, and helping youth identify and use their strengths is a way to motivate them to develop the skills they need to succeed.

"What's My Story" includes activities and resources from 4-H and ACT for Youth that promote self-awareness and how youth see themselves in the world today. Activities encourage youth to use their positive attributes and talents to face problems and address issues of climate change and become stewards of the environment and catalysts of change.

Opening Questions:

- What do you like best about yourself?
- What things do you feel most passionate about?
- What things do you feel you do best?
- How do you feel about your relationships with others?

Background information:

Before the Activity

Gather and prepare materials, review and print handouts.

Let's Do It!

Introduce the activity with an **Ice Breaker**: Explain that first we will do a fun icebreaker, where you will play the **Youth Grow "Group Bingo"** game by going around the room to find people who fit the listed categories. How many boxes can you fill? Can you find others who have similar interests as you?

"What's My Story" Activity:

Using the **ACT for Youth Self-Awareness** resources, follow these steps to help participants identify and build on their strengths:

1. Have youth work alone to complete the **"Individual Assets"** charts.
2. While they do so, use the **"Gathering Information about Young People's Strengths"** to prompt questions as they fill in their answers.
3. After they complete their **"Individual Assets"** charts, hand out one **"Peer-to-Peer Interview Worksheet"** to each person and divide the whole group into pairs.
4. Using their **"Peer-to-Peer Interview Worksheet"** have pairs interview each other on their 'sparks'.
5. Adult leaders can join the fun by interviewing each other, using the **Looking Back: Sparks Interview Questions for Adults interview sheet**.

Talk It Over:

Share/Reflect: Have youth share with the group:

Do you feel more aware of your strengths and passions in yourself now than before?
How so?

How might you see your best self and those people and things that inspire you, help you make this world a better place?

Apply

Ask for volunteers to share their 'sparks' and open the discussion on how you can use these passions, talents, and strengths to face everyday issues related to climate change.

Examples:

- Youth with a passion for gardening or recycling can teach others sustainability practices.
- Youth with knowledge about science can teach others about climate change basics.
- Someone with excellent technical web skills can create a blog for youth and climate change mitigation.

Learn More

- Work on appropriate activities for your group on self-awareness, self-management, social awareness and more, from the ACT for Youth Social and Emotional Learning Toolkit. New resources are added monthly:
http://actforyouth.net/youth_development/professionals/sel/
- Look for activities promoting self-awareness in the **4-H Inspire Kids to Do Activity Guide** at <https://4-h.org/wp-content/uploads/2018/11/4-H-Activity-Guide-Final-112018.pdf>
- Cornell Garden-Based Learning <http://gardening.cals.cornell.edu/>
- Youth Grow <http://gardening.cals.cornell.edu/lessons/curricula/youth-grow/>

Youth Handouts

- Youth Grow "Group BINGO"
- Found at http://actforyouth.net/youth_development/professionals/sel/:
 - Overview for Leaders: Act for Youth Self-Awareness
 - Act of Youth Handouts:
 - Individual Assets
 - Gathering Information About Young People's Strengths
 - Sparks Peer-to-Peer Interview
 - Looking Back: Sparks Interview Questions for Adults



Group Bingo

Find people who fit in the following categories. Write their name in the box. Each person can only sign in one box. Fill in as many as you can. Have fun!

Speaks a language other than English. _____	Has shopped at a farmer's market. _____	Has given a speech to more than 50 people. _____
Can define Fair Trade. _____	Lives more than 100 miles from a big city. _____	Has harvested and eaten fresh raw corn. _____
Has milked a cow. _____	Has worked on a farm. _____	Likes to dance. _____
Composts at home. _____	Has a garden. _____	Plays a musical instrument. _____
<u>Has</u> hands that are the same size as yours. _____	Wants to be a chef. _____	Has the same favorite <u>ice</u> cream as you. _____

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1.3 Out of Control!- or Not

Skill Level

Beginner / Intermediate / Advanced

Learner Outcomes

- Identify coping skills and build a stronger sense of self-worth and feelings of control.
- Practice adaptive strategies rather than avoiding difficult situations.
- Illustrate solutions one is using and can continue to use to address climate change problems.

Education Standard(s)

NS.5-8.6 Personal and Social Perspectives: Personal health

Success Indicators

Practice adaptive strategies rather than avoiding difficult situations

Life Skills

Problem solving, decision making, critical thinking, stress management, managing feelings, goal management, self-motivation, self-responsibility, self-discipline

Time Needed

45 minutes

Materials List

“**Out of Control!-or Not**” handout, drawing paper, crayons, colored pencils, and/or markers for each participant; markers, poster paper or white or black board.

Space

Indoor space and tabletops or desks for drawing, and writing and walls to hang poster paper

Suggested Group Size

12-15 or more

Acknowledgements

Adapted from “**What Can You Control?**” found at YourLifeYourVoice.org

Introduction

Eco-anxiety and/or Climate-anxiety, is an overwhelming fear which Elizabeth Haase, MD., addresses in her article **Children’s Emotional Responses to Climate Change** found in the Mental Health And Our Changing Climate: Impacts, Implications, and Guidance <https://www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf> (March 2017). Haase notes that the “direct experience with and future

unknown effects of climate change can cause children to exhibit symptoms of PTSD, such as phobic behavior, panic, nightmares, and anxiety.” How can we address these responses in a positive way? One approach is through resilience. For example, Haase shares that “a capacity-building intervention developed by Seligman and Peterson (2003) aims to bolster people’s coping skills through a learned optimism framework...[by developing] a stronger sense of self-efficacy and feelings of control and encourages them to practice adaptive strategies rather than disengaging from difficulty” (2017).

Opening Questions (choose questions appropriate for the skill level of your group):

- How do you feel about things you hear in the news or on social media?
- Do you feel overwhelmed at times? Powerless?
- How much control do you think you have over things you may face in your life?
- How do you handle situations that are out of your control?
- Is there anything in your life that you wish you could change, but cannot?

Background information:

In “**Out of Control!-or Not**” participants will understand what is within their control and what is not. They will learn how to take steps towards positive actions particularly those bigger issues currently out of their control.

Before the Activity

Prepare materials and handouts; Review activity scenarios, make additional scenarios that are appropriate to this group.

Let’s Do It!

Part One: What Can I Choose to Do? Provide real-life scenarios of examples of obstacles, adapted from YourLifeYourVoice.org, with possible options that address each obstacle:

- 1. You promised your track coach you would run every day this week, however it has been raining non-stop for the last few days. What would you do?**
 - a) Not go outside and get wet, I’ll stay inside and play video games.
 - b) Go outside and dress for the weather but be careful and still get my running in for the day.
 - c) Go to the indoor track at school after school to get my running done for the day.
- 2. You had a disagreement with your best friend, and he/she stopped talking to you, and now you have no one to eat lunch with. What would you do?**
 - a) Since you feel awkward eating alone, you skip lunch and go to the library instead.
 - b) You find another friend to sit with during lunch.
 - c) Reach out to your best friend to try to work things out.

Notice that the first option in each scenario avoids the problem, and the other two options are ways around these obstacles? Seek out alternatives to solutions to your problems, keeping things within your control. Take back your control!

Part Two: “Out of Control!- or Not”: Using the “Out of Control!- or Not” handout, ask participants to illustrate through drawings on paper, things that are either in their control or not in their control, using the following examples to prompt the activity:

1. Things that you usually do not have control over:

- Other people's actions, feelings or words
- Obeying laws or rules
- Your past
- Weather

2. Things that you CAN control:

- Your attitude, effort, words
- Your actions & reactions
- Your choices

Part Three: Little Things I Can Do Comic Strip

- Circle back to the issue of climate change. How do these things we can or cannot control relate to this issue of climate change, without being too intimidating and overwhelming?
- Discuss possible scenarios that describe solutions to climate change problems. Have participants illustrate in an “**I Can Do Comic Strip**” little steps they have in their control, either by describing things they already do (ex: recycling plastic and paper, eat more plants); and things they can do (ex: start a garden, compost bin, save rainwater) to address the issue of climate change such as:
 - a. My family committed to reduce the amount of garbage we have each week, and in addition to recycling my plastic and paper, I will start a compost bin and make sure I save all my food scraps rather than throw them in the trash. (Things I do now, and things I can do).
 - b. My science teacher wants to start an after-school garden program for the kids in my grade. Rather than go home and watch TV, I will join the garden club and learn how to grow my own food. (things I can do, learn about)
 - c. My best friend lives a few blocks from me, but rather than ask my mom or dad to drive me I ride my bike or walk. (things I do now)

Talk It Over:

Share: Participants share their illustrations, discuss anything surprises, concerns or anything they want to share.

Apply: Ask youth to reflect on opening questions:

- How might you face situations that may be overwhelming to you?
- How will you teach your brain to focus on the thoughts and ideas that offer solutions to problems and issues you face that are in your control??
- How will you handle situations that are out of your control?

References

- Your Life Your Voice from Boys Town
<https://www.yourlifeyourvoice.org/Pages/home.aspx>
- Clayton, S., Manning, C. M., Krygsman, K., & Speiser, M. (2017). Mental Health and Our Changing Climate: Impacts, Implications, and Guidance. Washington, D.C.: American Psychological Association, and ecoAmerica.
<https://www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf>

Learn More

- Social impacts of climate change: UNICEF Impact of Climate Change on Children 2015.
https://www.unicef.org/publications/files/Unless_we_act_now_The_impact_of_climate_change_on_children.pdf
- National Geographic: Kids sue U.S. Government over Climate Change
<https://www.nationalgeographic.com/news/2017/03/kids-sue-us-government-climate-change/>
- Tips and Tools to help deal with challenges, at Your Life Your Voice from Boys Town: <https://www.yourlifeyourvoice.org/Pages/Tips.aspx> including Being Resilient: <https://www.yourlifeyourvoice.org/Pages/tip-being-resilient.aspx?Topic=Coping%20Skills>

Youth Handouts

“Out of Control!-or Not” handout

“Out of Control!- or Not” Handout

What are some things that you usually do NOT have control over?

What are some things that you CAN control?

Things I cannot control are:

Things I can control are:

Draw a picture of yourself here



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1.4 Know and Show Sombrero

Skill Level

Beginning

Learner Outcomes

- Demonstrate their personal relationship with the earth.
- Illustrate what they know about climate change and gardening.

Education Standard(s)

- NS.K-4.3 Life Science: The characteristics of organisms
- NS.5-8.3 Life Science: Ecosystems
- NS.5-8.6 Personal and Social Perspectives: Environments

Success Indicators

Illustrate what they know about climate change and the world around them.

Life Skills

Communications, learning to learn

Time Needed

40 minutes

Materials List

2-inch clear tape, newspaper, gardening magazines and photos of plants (healthy and not healthy) miscellaneous art supplies (markers, yarn, glitter, pipe cleaner, tissue paper, crafts supplies on hand. Try to use recycled materials wherever possible).

Space

Place with desks or tabletops for using craft supplies to build a sombrero

Suggested Group Size

10 or more

Acknowledgements Adapted from the Cornell Garden-Based Learning Seeds of Change by Dina El-Mogazi, and the Junior Master Gardener curriculum.

Introduction

Opening Questions:

- What have you noticed about changes in the weather lately?
- Is it always the same every day in each season? Too hot? Cold? Rainy?
- What do you know about Climate Change?

Background information:

- **Before the Activity**

Gather and set up crafts supplies needed for the activity. Make a hat to model, showing what you know about plants in the garden, their needs and how climate change may affect a healthy garden.

Let's Do It!

- **Make the Hat**

- Place the middle of two large, square sheets of newspaper on the top of a student's head.
- Lay the rest of the paper flat against the student's head.
- Tape around the newspaper starting right over the ear and continue wrapping until the tape goes all the way around the student's head.
- Curl up the edges of the newspaper to form the brim of the hat.

- **Decorate the Hat**

- Ask the opening questions, and others listed in a way that the children will understand:
 - What do plants need to be healthy?
 - What have you noticed about changes in the weather lately?
 - How do you see plants in the garden reacting to these changes in weather patterns? (ex: what happens with too much or too little rain?)
- Ask children to think about what they know about a healthy garden and/or the effects of climate change towards garden plants.
- Encourage them to use what they know to decorate their hats, with different art supplies, pictures of plants, flowers and vegetables cut from magazines,
- Encourage them to be creative, but do not offer too many suggestions or prompting (unless needed for adaptive learning), as the goal is to see what they know about the topic.
- They may demonstrate the concept of climate change in a simple way, such as by drawing a very hot sun and plants drying up or drawing how planting trees makes the planet a beautiful, green place.

Talk It Over:

Share/Reflect

- When everyone's finished their hats, encourage them to show their creation to the group and talk about what each decoration or item means.
- As they do this, jot down the numbers and range of responses.
- For example, when asked what plants need, children may show water drops, and a sun. Note those as examples of two different needs.
- Once everyone has presented their hats to the group, and you have finished writing down their range of responses, invite the children to wear their hats when they go out into the garden.

Apply

Take the children out to the garden, have them observe plants closely. Ask:

- What do you see in the garden today? Healthy plants? Any plants that look stressed due to weather we have had lately?
- What can we do in the garden to keep plants healthy when changes in weather may affect them?

Variations

- Explain to them that these hats are called 'sombros.' Sombrero is a Spanish word which means 'shade'. These hats create shade and are a great way to get protection from the hot summer sun!
- Expand the discussion on how some plants need sun and some need shade.
- Keep a box where the hats can be kept, so children can wear them in the garden on sunny days!

References

Adapted from Cornell Garden-Based Learning Seeds of Change, by Dina El-Mogazi, and Junior Master Gardener curriculums.

Learn More

- Cornell Garden-Based Learning: <http://gardening.cals.cornell.edu/>
- How to Talk to Kids About Climate Change, NPR.org: <https://www.npr.org/2019/10/22/772266241/how-to-talk-to-your-kids-about-climate-change>
- NASA Climate Kids, Good basic site geared towards elementary ages. Activities, good basic info, topics include soil, plants, activities: <https://climatekids.nasa.gov/>
- National Environmental Education Foundation (NEEF) Greening STEM Toolkit at <https://www.neefusa.org/resource/greening-stem-educator-toolkit>
- Science and math activities at <https://www.neefusa.org/resource/greening-stem-educator-toolkit>
- National Geographic Kids, Climate Change: <https://kids.nationalgeographic.com/explore/science/climate-change/>
- National Institute of Environmental Health Science, Climate Change, NIH: <https://kids.niehs.nih.gov/topics/climate-change/index.htm>
- Talking to Children about Climate Change, NOAA, National Ocean Service: <https://oceanservice.noaa.gov/education/planet-stewards/talking-about.html>



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Authors: Dina El-Mogazi, adapted from the Junior Master Gardener curriculum, Donna Alese Cooke

Reviewer: Marcia Eames-Sheavly



1.5 Systems Thinking and Me

Skill Level

Beginner / Intermediate / Advanced

Learner Outcomes

- Understand systems thinking, its benefits and how it applies to various systems.
- Understand a sense of place within a system.
- Recognize how systems thinking applies to sustainable eco-systems and gardens.
- Identify and explain how developing habits of systems thinking in managing gardens and landscapes can support environmental stewardship and a sustainable community.
- Identify ways to mitigate and adapt to climate impacts.

Education Standard(s)

- NS.K-4.3 Life Science: Organisms and environments
- NS.5-8.3 Life Science: Populations and Ecosystems; Diversity of Organisms
- NS.9-12.3 Life Science: Behavior of Organisms, Interdependence of organisms, organization in living systems

Success Indicators

Understand systems thinking, its benefits and how it applies to various systems.

Life Skills

Critical thinking, resiliency, healthy living choices

Time Needed

50 minutes; extra time for Intermediate level variations

Materials List

Ball of yarn, newsprint / flip-chart size paper, markers, handout, scrap paper, markers, pens or pencils. Youth Handouts: Forest Eco-System, Mind Map: What does Systems Thinking look like in the garden?, Habits of a Systems Thinker (for Leaders and intermediate / Advanced Skill Level participants)

Leader Handouts: Mind Map Model: Systems Thinking in the Garden

Space

A garden space for observation and indoor or outdoor tables and chairs for writing and drawing.

Suggested Group Size

12-15 or more

Acknowledgments

Portions adapted from Cornell Garden-Based Gardening in a Warming World, Seeds of Change and Youth Corps.

Introduction

Systems thinking considers the creation, analysis, and resolution of issues that arise from complicated forms of interaction in systems. Different parts of a system are so interconnected that if we alter one part of a system it will change other parts. Systems thinkers focus on wholes rather than on parts.

In this activity, youth will see themselves and others in context of a whole system, their relationships with other parts, and how interactions among each element works as a network rather than hierarchies. Using a Mind Map, youth will use the garden to illustrate the elements within its system, and the impacts that people and climate change have on each other and other elements in the garden.

Mind mapping is a method of brainstorming. It relates to the way our brains work by linking thoughts and making connections with one idea leading into another. This activity is an effective way to reflect on interactions of elements within a living system and open the discussion and how further exploration in methods of sustainable solutions.

Opening Questions:

- How do you see yourself and others as a part in the world as a whole system?
- As part of a system, what is your connection to nature, people, problems, and events?
- How might climate change affect a system (such as a garden)?
- What can we do to keep our garden system healthy and sustainable, in extreme weather and continued changes in climate?

Background information:

Refer to *Thinking About Systems: 12 Habits of Mind* by Linda Booth Sweeney:

<https://www.lindaboothsweeney.net/index.php/thinking/principles/habits>

Consider definitions of “systems” and “systems thinker”; refer to “Habit of a System Thinker” handout to introduce systems thinking, Waters Foundation:

<https://www.watersfoundation.org/>

Before the Activity

Gather materials for the activities, set up the room for whole and small group work. Leader will prepare by reading background information and review Leader Handouts.

Let’s Do It!

Explain that we will reviewing what we know about eco-systems and be learning systems thinking. We will brainstorm and design a Mind Map to illustrate how you see yourself within that system and connected to other parts of that system.

1. Ball of Yarn Interconnections

To introduce the concept of Systems Thinking, start with this icebreaker to prompt a discussion around interconnectedness.

- Form a circle with your group and have on hand a ball of yarn. Give the ball of yarn to one person who is willing to begin by stating a challenge or problem related to climate change (ex: extreme weather, extinction of species, food insecurity).
- The first person keeps hold of the end of the yarn ball and tosses the ball to another group member, who then shares a climate change challenge or problem that relates to the previous one described.
- Continue this pattern until everyone in the circle has shared.
- Note the interconnected web that has been formed as the relationships among challenges or problems emerge.

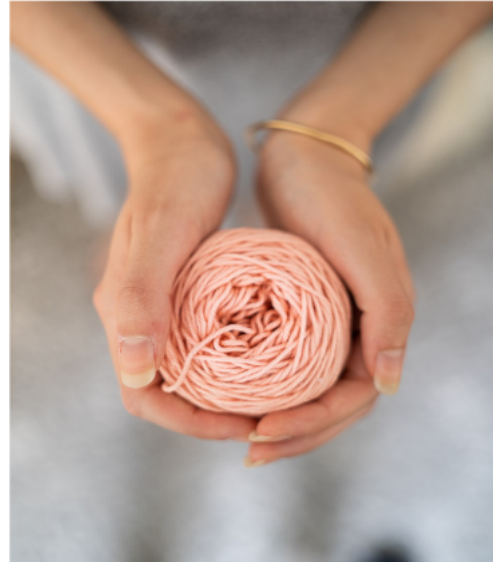


Photo by Les Triconautes from Unsplash

2. Recognizing Systems

Distribute the “**Forest Eco-System**” handout to review prior knowledge and ask:

- What do we see when we look at a forest? (trees, plants, soil, water, birds, animals, sometimes people and more).
- How do you see each of these elements relating to each other?
- What positive and negative influences might you see these elements have on each other?

3. Mind map

Explain that, in the same way a forest has its own eco-system, so does a garden. Describe the activity: we will be brainstorming in small groups of 4 to 5 people and designing a Mind Map that shows different elements in the garden and how they relate to each other.

- Take a few moments to go outside to observe a garden or landscape and record on scrap paper, the elements they see (plants, soils, birds, etc.).
- Have the small groups return to a space with tables and pass out newsprint/ flip-chart size paper, marking pens and the **Mind Map: What does Systems Thinking look like in the garden?** handout. Have each group select someone to do the writing for the group.
- Using the leader **Mind Map: What does Systems Thinking look like in the garden?** handout as an example, model how their Mind Maps could look like.
- Have each group design their own Mind Map on newsprint or larger paper, using the **Mind Map: What does Systems Thinking look like in the garden?** handout as a visual starting point and to draft notes on.

- Identify observations of the elements they just made out in the garden, and how climate change and people influence the elements in the garden's system.
- Draw lines to and from each element illustrating which elements have relationships and interactions with each other and write any connecting thoughts on those lines.
- Explain we will be adding more to our Mind Maps after the next discussion.

4. Taking it a Step Further: Being a Systems Thinker in the Garden

In observing a Systems Thinking approach, we can picture how different parts of a system are so interconnected that if we alter one part of a system it will change other parts. This allows us to ask the important questions that will help us better understand the garden system. For example:

- What happens to the soil and plants when there are long periods of drought or wet weather?
- What happens to the plants and animals as soil health and water quality change?
- What happens to beneficial insects when pollinating plants die off due to inconsistent weather?

5. **For Intermediate/Advanced Skill Levels:** Explore and apply the topic further with the **Garden Clinic- Why System Thinking Matters** and **Thinking Deeper: Discuss** activities in Variations.

Talk It Over:

Share

Each group will share their Mind Maps in a whole group discussion.

Reflect

Why does being a systems thinker matter in our everyday lives and gardening practice?

Generalize

For youth interested in or need an introduction to Systems Thinking and its role in sustainable eco-systems, changes in the weather provide opportunities to observe the growth and development of living things and their relationships to each other. Spring inspires an awakening of the senses, and the intellect follows with a natural desire to learn. This is an excellent time to introduce the concept of connections between plants, animals, people, and climate.

Term and Concept

Albedo: the measure of how much light that hits a surface is reflected without being absorbed.

Microclimates: the climate of a very small or restricted area, especially when this differs from the climate of the surrounding area.

Phenology: the study of cyclic and seasonal natural phenomena, especially in relation to climate and plant and animal life.

Sustainability: preventing the reduction of natural resources in order to maintain an ecological balance.

Systems Thinking: paying attention to interrelationships, patterns, and dynamics as well as to the parts.

Apply

How can we be systems thinkers in in our everyday lives and gardening practice?

Variations

The following activities are recommended as a way of introducing students to the basics of garden ecosystems and the importance of seasonal events:

- Signs of spring. Learn about how climate change affects developmental changes (*phenology*) and the unfolding of seasonal cycles. Discuss how plants and animals awaken from winter dormancy and hibernation, reproduce, grow, and interact with their environment and other species.
 - Journals. Start a multimedia garden journal. (Modes of learning: observing, thinking, feeling, creating). Go out in the garden and sit quietly. What do you see, hear, feel, smell? Take notes, take photos, draw pictures, make recordings of sounds. Collect in individual journals or make an electronic compilation through Moodle or other sharing format.
 - Identifying *microclimates* (observing). On an early warm spring day, go out for a walk and observe different microclimates. Where is it warmer? Where is it cooler? Are there any north facing slopes that still have snow? Are there any south facing brick walls that have bulbs blooming next to them? Feel the surfaces of the ground with bare feet if possible. Compare a black parking lot to a light-colored paved surface. Compare pavement to grass. Discuss *albedo*. Record observations in journals.

Intermediate/Advanced Skill Levels: Garden Clinic- Why System Thinking Matters

Use the **Habits of a Systems Thinker** handout, ask youth to reflect on the Mind Map they just created. Ask them to add ideas and processes that help promote sustainability in the garden (ex: composting, using organic matter, harvesting rainwater).

- Ask one or more volunteers to briefly describe to the whole group a specific challenge or problems that occur in the garden (insects, diseases, invasive species, drought)
- Break up into teams to practice systems thinking in examining the challenge(s) or problem(s) and identifying potential strategies to address the challenge(s) or problem(s).
- Encourage teams to review the systems thinker bullet points in their efforts to identify the connections and impacts that solutions might have – including potential effects that might not be obvious at first.
- For example, using chemical herbicides may successfully kill a noxious invasive species but also the beneficial insects including pollinators that converge on it and nearby plants.
- Systems thinking requires being a detective who asks good questions to ascertain connections. Some groups may find drawing a simple diagram or map helps explore links between components, actions and potential impacts.

Advanced/Intermediate Skill Levels: Thinking Deeper: Discuss

Expand the activity to include a discussion on the characteristics of a Systems Thinker:

- Sees the whole: interprets the world in terms of interrelated “wholes” or systems, rather than as single events, or snapshots.
- Looks for connections: tends to look for connections among nature, ourselves, people, problems, and events.
- Pays attention to boundaries: knows that systems are nested and how you define the system is critical to what you consider and don’t consider.
- Changes perspective: changes viewpoints to increase understanding, knowing that what we see depends on where we are in the system.
- Looks for things that slows down cause and effects (carbon dioxide)
- Reflects on one’s own assumptions about how the world works and how that may limit thinking.
- Anticipates unintended consequences: traces cause and effect asking: “what happens next?”
- Looks for change over time: sees today’s events as a result of past trends and an indication of future ones.
- Sees “self” as part of the system: looks for influences from within the system, focusing less on blame and more on how the structure (or set of interrelationships) may be influencing behavior.
- Embraces and holds the tension of paradox and ambiguity, without trying to resolve it quickly.
- Finds leverage: knows that solutions may be far away from problems and looks for areas of leverage, where a small change can have a large impact on the whole system.
- Watches for win/lose attitudes: in situations of high interdependence dichotomous views usually make matters worse.

This listing is from *Gardening in a Warming World: A Climate Smart Gardening Course Book*, 2018 <http://climatechange.cornell.edu/gardening/>. Adapted from *Thinking About Systems: 12 Habits of Mind* by Linda Booth

Learn More

- Smart Solutions for a Changing Climate: <http://climatechange.cornell.edu/gardening/>
- Gardening in a Warming World: A Climate Smart Gardening Course Book, 2018: <http://climatechange.cornell.edu/gardening/>
- Yellowstone study, wolves change rivers, Yellowstone National Park Trips: <https://www.yellowstonepark.com/things-to-do/wolf-reintroduction-changes-ecosystem>
- Wolves, rivers, systems thinking, and trophic cascades, The Ecologist: <https://theecologist.org/2018/oct/17/wolves-rivers-systems-thinking-and-trophic-cascades>
- Teach Systems Thinking_InTeGrate: https://serc.carleton.edu/integrate/teaching_materials/systems.html

References

- Cornell University Climate Smart Solutions Program, <http://climatechange.cornell.edu/gardening/>
- Thinking About Systems: 12 Habits of Mind by Linda Booth Sweeney, <https://www.lindaaboosweeney.net/index.php/thinking/principles/habits>
- Habits of a System Thinker, Waters Center for Systems Thinking <https://www.watersfoundation.org/>
- Gardening in a Warming World: A Climate Smart Gardening Course Book, 2018: <http://climatechange.cornell.edu/gardening>

Youth Handouts:

- Forest Eco-System
- Mind Map: What does Systems Thinking look like in the garden?
- Habits of a Systems Thinker (for Leaders and intermediate/Advanced Skill Level participants)

Leader Handouts:

- Mind Map Model: Systems Thinking in the Garden



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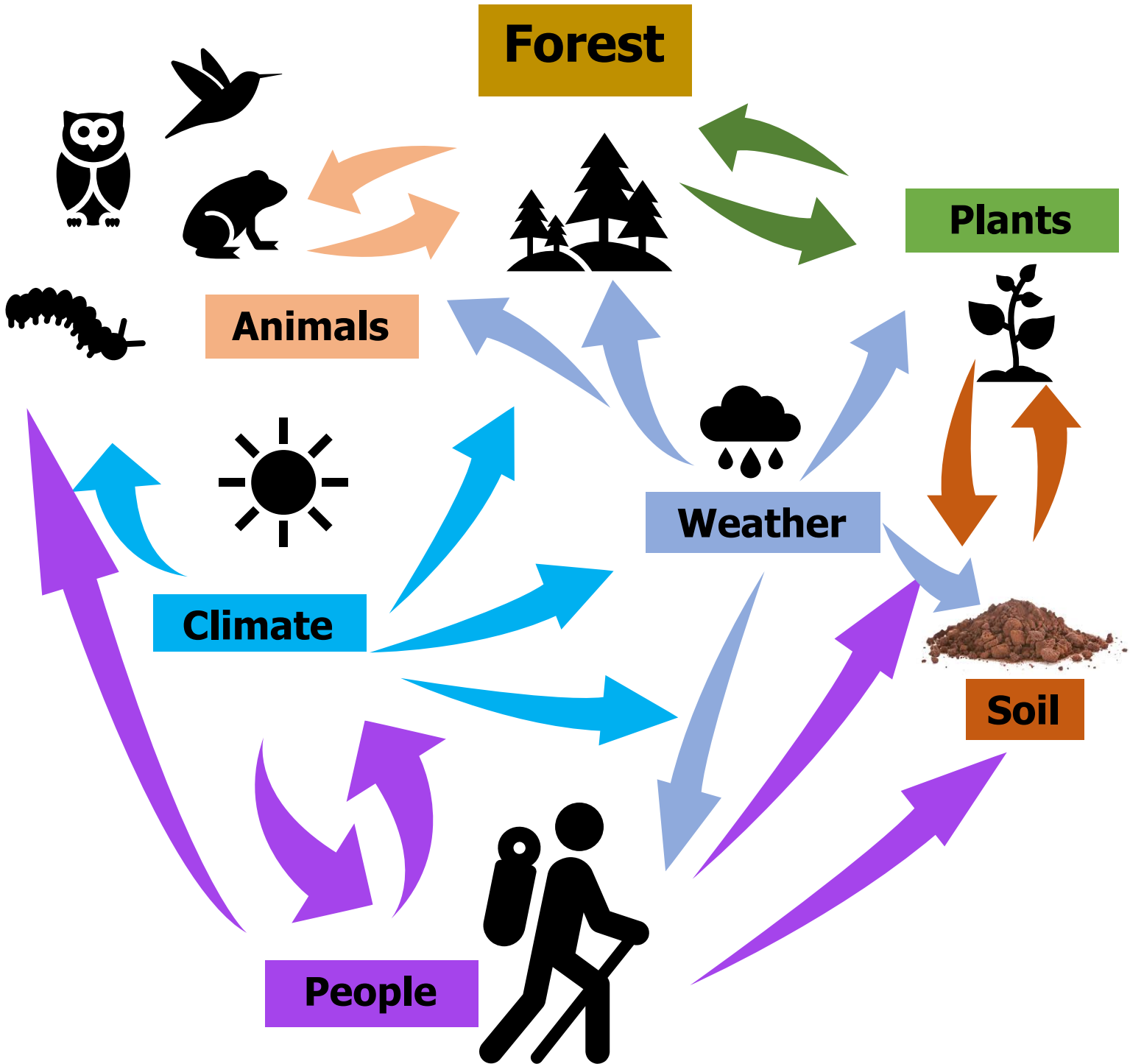
Authors: Donna Alese Cooke, Dina El-Mogazi, Gardening in a Warming World.

Reviewer: Marcia Eames-Sheavly



Handout: Forest Eco-System

What does Systems Thinking look like in a forest? What patterns, influences, and impacts do you see between people, plants, animals, climate and weather?

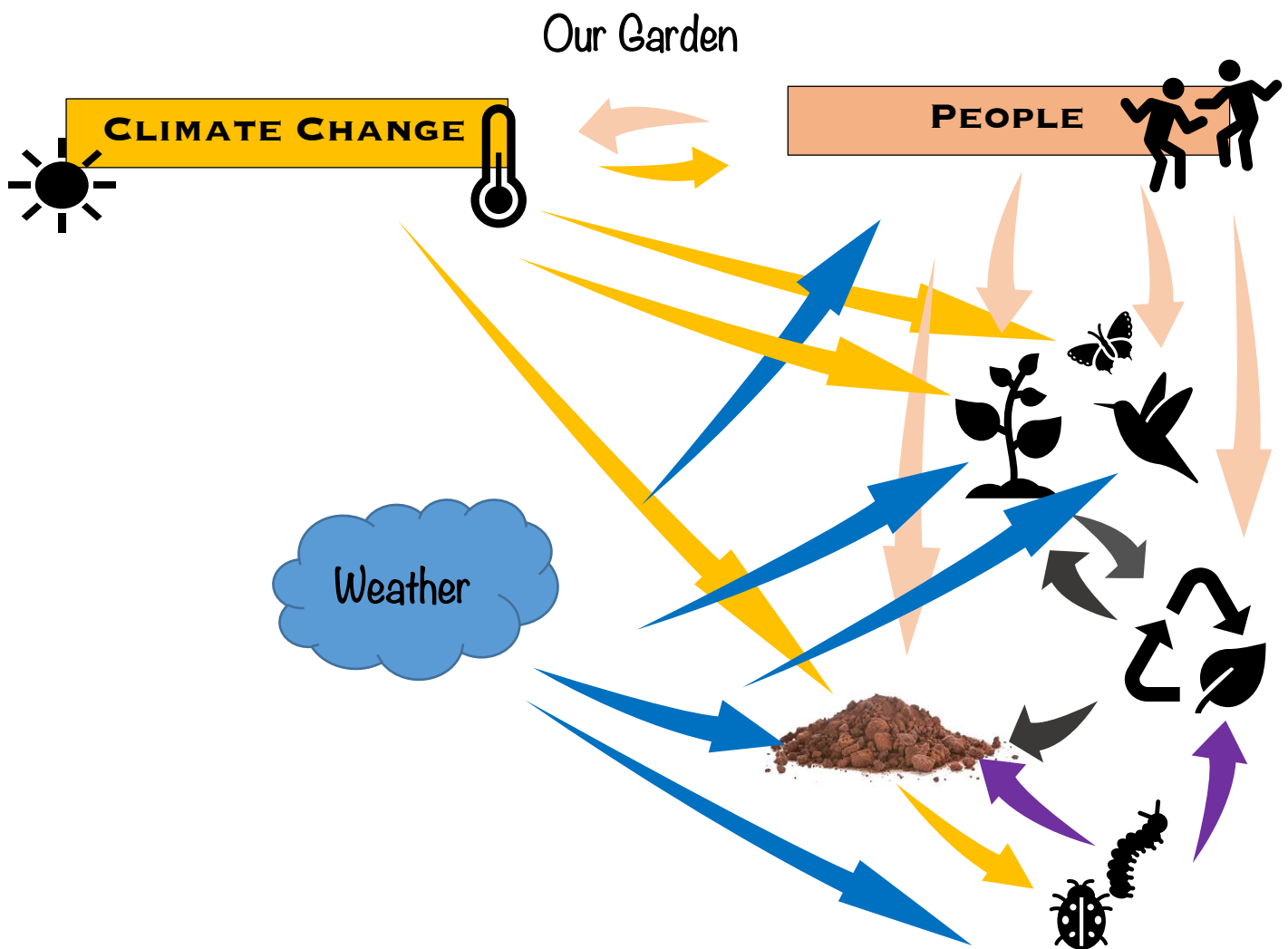




Leader Handout: Mind Map Model: Systems Thinking in the Garden

Leaders: Use this example to show the complex interactions among elements in the garden and as a model for participants to create their own Systems Thinking in the Garden Mind Map. Based upon their brainstorming and observation results, each group will have variations of this version. Observations of garden elements may include plants, soil, water, compost bin, animals, weather, etc.

Opening questions: What does Systems Thinking look like in the garden? Observe the different elements in the garden. What is their place within the whole system, and how do they interact/influence each other? How do people and Climate Change affect all the elements?

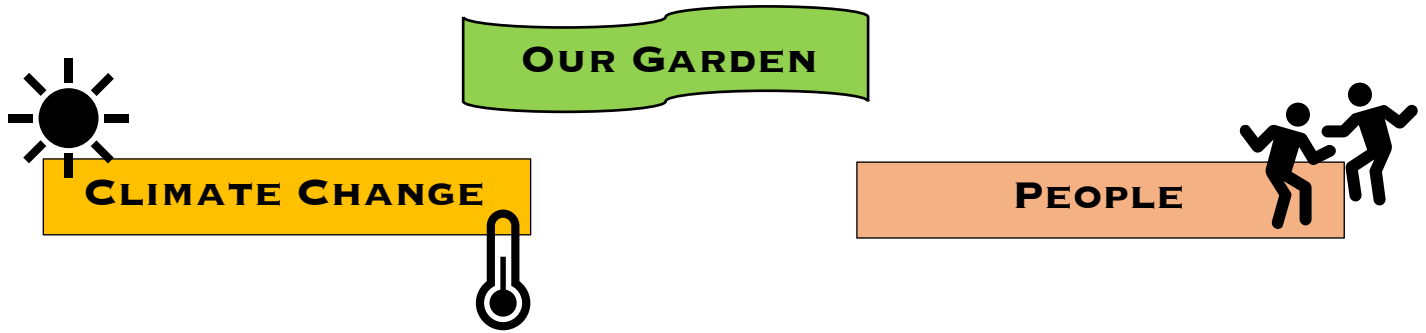


Author: Donna Alese Cooke



Handout: Mind Map: What does Systems Thinking look like in the garden?

Observe the different elements in your garden (plants, soil, water, compost bin, animals, weather, etc.). What is their place within the whole system, and how do they interact/influence each other? How do people and Climate Change affect all the elements?



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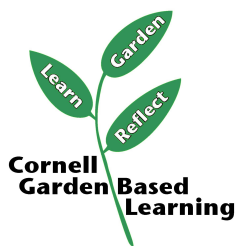


Handout: Habits of a Systems Thinker

<p>Seeks to understand the big picture</p>	<p>Observes how elements within systems change over time, generating patterns and trends</p>	<p>Recognizes that a system's structure generates its behavior</p>
<p>Identifies the circular nature of complex cause and effect relationships</p>	<p>Makes meaningful connections within and between systems</p>	<p>Changes perspectives to increase understanding</p>
<p>Surfaces and tests assumptions</p>	<p>Habits of a Systems Thinker</p>	<p>Considers an issue fully and resists the urge to come to a quick conclusion</p>
<p>Considers how mental models affect current reality and the future</p>	<p>Uses understanding of system structure to identify possible leverage actions</p>	<p>Considers short-term, long-term and unintended consequences of actions</p>
<p>Pays attention to accumulations and their rates of change</p>	<p>Recognizes the impact of time delays when exploring cause and effect relationships</p>	<p>Checks results and changes actions if needed: "successive approximation"</p>



Photo by Daniel de-Nadai-from Unsplash



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