

NATURE & WELLNESS BINGO ACTIVITY

Did you know that the presence of urban green spaces are not just good for the environment but also for human health and wellbeing?

There are many physical, psychological, and social ways people benefit from natural areas. Some of these benefits include lower rates of obesity, lower overall aggression, higher mental capacity and concentration, and greater ability to cope with life stressors. Even looking at images of nature in photographs and artwork can relieve stress and improve concentration!

OBJECTIVE

- Learn the human wellness benefits of nature in the city.
- Connect nature in the city to the big picture of climate change, emphasizing the relationship between human health and climate resilience.
- Gain skills in reviewing and referencing scientific articles

Introduction

This activity guides participants through scientific literature that examines the physical, mental, and community benefits of nature. Participants practice reading scientific scholarship and learn more about the importance of natural environments, especially in cities. Through incorporating a bingo game, this activity includes the element of competition, the quick pace of a game show, and a connection to global issues through local concerns. Participants will not only have fun, but also come away with an understanding of nature as vital to human health and wellbeing, and be better able to advocate for urban nature in the face of coming changes.

This two-day activity includes 30 minutes of in-class activities each day as well as an hour for the homework assignment. An alternative short activity (detailed on the backside of this page) is also included to accommodate a more condensed schedule. A medium length activity option would be to condense the day one activities into a 30 minute session of reviewing the flashcards, and then playing bingo and having a discussion for an additional 30 minutes or more.

MATERIALS

For the Facilitator:

1. This instruction sheet: for facilitator
2. Bingo questions cheatsheet

For Participants:

1. Literature reviews: one per participant
2. Flash cards: one set per participant
3. 6 shuffled Bingo boards: one per participant, randomly distributed
4. Stickers or pens for marking bingo boards
5. Three to four prizes for winning teams (optional)

THE ACTIVITY: DAY ONE

Timeline:

- Brainstorm- 10 minutes
- Research- 10 minutes
- Homework- 1 hour

Attention Restoration

Theory (ART) asserts that people can focus better after spending time in nature. Even watching images of nature on a computer monitor been found to be restorative! Green spaces, including those located within the most built-up areas of cities, provide restorative settings that offer people respite and recovery from daily and chronic stressors.



BRAINSTORM

In order to introduce the connection between wellness and nature, ask participants what benefits might come to mind. If possible to be outside, have participants close their eyes and listen, feel, smell, think, etc. Write down questions and assumptions to get a sense of what participants already know.

RESEARCH

With these thoughts in mind, pass out lit reviews and discuss research practices as a valuable skill for High School and College students, for future jobs, and for lifelong learning and engaged citizenship. Research can be found through internet sources, libraries, museums, and universities. These scientific studies are peer reviewed, but there are still elements of bias and areas for further research with any study under consideration. Footnotes and citations use the last name and year to reference the study, in order to give credit to researchers, and to keep consistency and validity.

HOMEWORK

Instruct students to take home the lit reviews and the corresponding set of flashcards to study. The more familiar they are with the material, the better chance they have of winning the bingo game the next day.

DAY TWO

Timeline:

- Bingo game- 20-30 minutes
- Reflection- 10 minutes

Number of People: At least four participants are needed to play bingo. If the group is especially large, participants can also play as teams

BINGO GAME

1. Participants should begin by putting study materials away and out of sight.
2. Each participant is provided with a bingo board (randomized) and board markers (pens or stickers).
3. The facilitator will ask bingo questions (from the materials) and participants will look for the answer on their bingo board. There is only one answer per question, and every answer is on every board in randomized!
4. The goal is to mark enough answers to complete a 4-square win- either horizontally, vertically, or diagonally on the bingo board.
5. The facilitator can check over the potential winners' boards to make sure the participant chose the correct answers (optional)
6. The first participant or team to get a 4-square win checked off by the facilitator wins and gets a prize!
7. After the first win, participants can continue playing until a few people or teams have won.

REFLECTION

Reinforce Health Benefits - Nature supports human health and wellness in many ways.

Reinforce Research Skills - Scientific research can be used by anyone. Citations help us validate and reference back, but all research should be viewed with a critical eye, and peer-reviewed is best.

Reiterate connection to climate change - Not only are natural areas beneficial to the web of life in the face of a changing planet, but by supporting health, natural areas help human individuals and communities to be more resilient.

Assess impact with a couple of questions - "What is one takeaway you'll remember from this activity?" "With whom are you going to share this information?"

Pass out the literature review to each participant for future reference.

QUICK OPTION

Don't have enough time for a two-day activity? This activity can be shortened to introduce two ideas: that nature has human health benefits and that we know this based on scientific research.

Timeline: 30-60 minutes

1. Spend a few minutes brainstorming potential human wellness benefits of natural areas.
2. Pass out the bingo boards and begin to play, stopping in between each question to discuss participants' answers. (For game rules, refer above to the instructions for Day 2 Bingo Activity.)
3. Ask if participants have seen evidence of these wellness benefits in their own lives.
4. Conclude with a reflection on the activity, reiterating nature's benefits to human wellness, the importance of research skills, and the connection to climate change.
5. Assess Impact with a couple of reflection questions: What is one takeaway you'll remember from this activity? With whom are you going to share this information?
6. Pass out the literature review to each participant for future reference.

Printing & Using the Flashcards

Printing and Using the Homework Flashcards

1. Send the file to print, and check the settings of the print job to make sure it is double sided and horizontal orientation
2. Print the flashcards
3. Cut out the flashcards
4. Check over your printing with the cheatsheet answer key that comes with the bingo board to ensure the answers and clues are aligned correctly on the front and back of the flashcards

SKILLS LEARNED THROUGH THIS ACTIVITY:

- Learning to read scientific studies
- Referencing research with citations
- Retaining and recalling research information about health and nature
- Learning to advocate for nature in the city with through scientifically rigorous methods

ADDITIONAL RESOURCES:

National Wildlife Federation:

Health Benefits to getting kids outdoors <http://www.nwf.org>

Leave No Child Inside:

Chicago-based organization of national movement promoting outdoor education for children <http://www.funoutside.org>

The Field Museum

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Find this and other climate action tools at climatechicago.fieldmuseum.org

NATURE AND WELLNESS

B I N G O

ADHD (Attention Defecit/ Hyperactive Disorder)	Vegetation	Stress	Stronger Neighbor- hood Ties	Images of Nature
Exercise in Nature	BMI (Body Mass Index)	Greening	Childhood Obesity	Natural
ART (Attention Restoration Theory)	Better Overall Health	* GREEN * FREE SPACE	Attention Spans	Safety
Cope with Major Life Issues	Better Mental Health	Play Space	Greater Longevity	Improved Cognitive Function

NATURE AND WELLNESS

B I N G O

Attention Spans	ADHD (Attention Defecit/ Hyperactive Disorder)	Natural	ART (Attention Restoration Theory)	Stronger Neighbor- hood Ties
Exercise in Nature	Greening	Play Space	Childhood Obesity	Better Overall Health
Greater Longevity	Cope with Major Life Issues	* GREEN * FREE SPACE	Stress	Better Mental Health
Images of Nature	Safety	Vegetation	BMI (Body Mass Index)	Improved Cognitive Function

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NATURE AND WELLNESS

B I N G O

BMI (Body Mass Index)	Vegetation	Play Space	Stronger Neighborhood Ties	Images of Nature
Exercise in Nature	ADHD (Attention Defecit/ Hyperactive Disorder)	Natural	Cope with Major Life Issues	Greening
ART (Attention Restoration Theory)	Better Overall Health	* GREEN * FREE SPACE	Attention Spans	Stress
Greater Longevity	Better Mental Health	Childhood Obesity	Improved Cognitive Function	Safety

NATURE AND WELLNESS

B I N G O

Stress	Cope with Major Life Issues	Natural	ART (Attention Restoration Theory)	Stronger Neighborhood Ties
Improved Cognitive Function	Greening	Play Space	Attention Spans	Safety
Greater Longevity	Exercise in Nature	* GREEN * FREE SPACE	ADHD (Attention Defecit/ Hyperactive Disorder)	Better Mental Health
Better Overall Health	Childhood Obesity	Vegetation	BMI (Body Mass Index)	Images of Nature

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NATURE AND WELLNESS

B I N G O

BMI (Body Mass Index)	Vegetation	Play Space	Stress	Images of Nature
Better Mental Health	ADHD (Attention Defecit/ Hyperactive Disorder)	Greater Longevity	Cope with Major Life Issues	Greening
ART (Attention Restoration Theory)	Better Overall Health	* GREEN * FREE SPACE	Natural	Attention Spans
Stronger Neighbor- hood Ties	Exercise in Nature	Safety	Improved Cognitive Function	Childhood Obesity

NATURE AND WELLNESS

B I N G O

BMI (Body Mass Index)	Stress	Natural	ART (Attention Restoration Theory)	Safety
Improved Cognitive Function	Greening	Play Space	Attention Spans	Images of Nature
Better Overall Health	Stronger Neighbor- hood Ties	* GREEN * FREE SPACE	ADHD (Attention Defecit/ Hyperactive Disorder)	Better Mental Health
Exercise in Nature	Childhood Obesity	Vegetation	Cope with Major Life Issues	Greater Longevity

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<p>17 children of low-income families that moved into new housing were assessed for the quality of their cognitive functioning—their capacity to focus or direct their attention. The researcher concluded: “Children whose homes improved the most in terms of greenness following relocation also tended to have the highest levels of cognitive functioning following the move.”</p> <p>(Wells, 2000) #10</p>	<p>After observing 3173 children for eight years, researchers observed that body mass index (BMI) a measure of weight and obesity, was significantly lower (healthier) at age eighteen for those who lived within 500 meters of a park. Recreation programs within six miles from the children’s homes were also significantly associated with healthier BMI at age eighteen.</p> <p>(Wolch, 2011) #11</p>	<p>“More than 100 studies now confirm that stress reduction and mental restoration are significant benefits associated with living near green areas, having a view of vegetation, and spending time in natural settings. Green spaces, including those located within the most built-up areas of cities, provide restorative settings that offer people respite and recovery from daily and chronic stressors.”</p> <p>(Wolf et. al, 2013) #12</p>
<p>Mental health is significantly related to residential distance from parks, with the highest mental health scores among residents within short walking distance from the park. Having a nearby urban park is associated with the same mental health benefits as decreasing local unemployment by two percentage points, suggesting at the least a potential of environmental interventions to improve mental health.</p> <p>(Pasanen et. al, 2014) #7</p>	<p>Individuals who had some nearby vegetation were significantly more effective in managing major life issues (coping) than were their counterparts living in barren environments.</p> <p>(Kuo, 2001) #5</p>	<p>For girls, the more that a view from the apartments where they lived contained natural elements as opposed to man-made ones, the higher their self-discipline related to concentration impulse inhibition, and delay of gratification. For boys, attentional functioning was not related to the level of nature immediately around their homes, but was related to the level of nature in their usual play space.</p> <p>(Faber et al, 2002) #3</p>
<p>A study of residents of an urban housing development shows that aggression is less when there is vegetation nearby than it is in more barren settings: ‘Nearby nature was systematically related to lower scores on multiple indices of aggression against partners and one index of aggression against children.’</p> <p>(Kuo, 2001) #4</p>	<p>Social ties—a measure of sense of community—were stronger among residents who lived close to greener open spaces: [T]he more vegetation in a common space, the stronger the neighborhood ties near that space—individuals living near to greener common spaces had more social activities and more visitors, knew more of their neighbors, reported that their neighbors were more concerned with helping and supporting one another, and had stronger feelings of belonging.”</p> <p>(Kuo, 1998) #6</p>	<p>In a study of more than 10,000 people, living in a green environment was positively associated to all three health indicators in the study: recently-reported symptoms, overall self-assessment, and score on a general health questionnaire. “People living in a greener environment appear to be significantly more healthy than others... 10% more green space in the living environment leads to a decrease in the number of symptoms that is comparable with a decrease in age by five years.”</p> <p>(de Vries, et. al, 2003) #9</p>

CARD SET 1- DESCRIPTIONS (BACK OF FLASHCARD)

Stress Reduction	Reduced childhood obesity	Improved cognitive functioning (capacity to focus or direct attention)
Self-discipline related to concentration, impulse inhibition, and delay of gratification	Coping with major life issues	Better mental health
Better overall health	Stronger neighborhood ties	Safety

CARD SET 1- TITLES (FRONT OF FLASHCARD)

<p>After a study with children diagnosed with ADHD showed significant benefits to walks in a city park, as compared with walks in urban neighborhoods or dense downtown districts, researchers inferred that being in these green environments benefitted many children. Incorporating trees and grass in schoolyards could play an important role in the classroom, better preparing children to return to the class with longer attention spans.</p> <p>(Faber et. al, 2009) #2</p>	<p>What is a numerical measure of weight and obesity, which tends to be lower (healthier) based on proximity to green spaces, parks, and recreational resources? This measure was used in a study of 3173 children, who were found to have significantly lower (healthier) scores at age eighteen for those who lived within 500 meters of a park, green space and/or recreational resource.</p> <p>(Wolch et. al, 2011) #11</p>	<p>According to a study from the early 2000s, for girls, the more that a view from the place where they lived contained natural elements as opposed to man-made ones, the higher their self-discipline related to concentration, impulse inhibition, and delay of gratification. Attention Restoration Theory is offered as an explanatory mechanism for this connection.</p> <p>(Faber et. al, 2002) #3</p>
<p>A study of residents of an urban housing development shows a correlation between aggression and urban environment—particularly, aggression is less when there is vegetation nearby than if it is more barren. A theory was developed called Attention Restoration Theory, which asserts that people can concentrate better after spending time in nature, or even looking at scenes of nature.</p> <p>(Kuo, 2001) #4</p>	<p>More than 100 studies now confirm that stress reduction and mental restoration are significant benefits associated with green areas and vegetation. Even watching images of nature on a computer or television monitor has been found to be mentally restorative.</p> <p>(Wolf et. al, 2013) #12</p>	<p>According to a recent Dutch study, living in green environments was positively related to health indicators. Assuming a causal relationship between green space and health, 10% more green space in the living environment leads to a decrease in the number of problematic symptoms that is comparable with a decrease in age by 5 years, likely leading to people living longer healthier lives.</p> <p>(de Vries, et. al) #9</p>
<p>A study of residents of an urban housing development shows a correlation between aggression and urban environment. When residents of housing with lower levels of nearby vegetation were compared to residents of similar housing with just concrete and asphalt, the former individuals were significantly more effective in coping with major life issues than their counterparts.</p> <p>(Kuo, 2001) #4</p>	<p>Children with this disorder went on twenty-minute individual guided walks of a city park on a weekly basis. Twenty minutes in a park setting was sufficient to elevate attention performance relative to the same amount of time in other settings. While Ritalin prescriptions have risen over the past few years, “Doses of nature” might serve as a safe, inexpensive, widely accessible alternative benefit for these youth.</p> <p>(Faber et. al, 2009) #2</p>	<p>A study of inner city children found that boys, versus girls, had a different relationship between views of nature and self-discipline. This study indicated that boys’ attentional functioning was not related to levels of nature immediately visible from their home, but was related to the level of nature in their usual play space, as evidenced by the recreational habits of inner-city boys within this study.</p> <p>(Faber et. al, 2002) #3</p>

CARD SET 2- DESCRIPTIONS (BACK OF FLASHCARD)

Natural	BMI (Body Mass Index)	Attention Spans
Greater Longevity	Images of Nature	ART (Attention Restoration Theory)
Play Space	ADHD (Attention Deficit/ Hyperactivity Disorder)	Vegetation

CARD SET 2- TITLES (FRONT OF FLASHCARD)

A decade long study was conducted in Philadelphia to assess the health and safety outcomes following a vacant lot “greening” program--“greening” being a process that includes creating a park-like setting with trees, shrubs and benches. Researchers found that vacant lot “greening” was associated with reduced gun assaults across an entire city, and reductions in vandalism in one section of the city.

(Branas, et al, 2011) #1

A study conducted in Finland shows evidence that both physical activity and exposure to nature are connected to improved health. This study suggested that repeated exercise in nature is related to improved long-term wellbeing more explicitly than repeated exercise in built environments indoors or outdoors. General health, emotional wellbeing, and sleep quality all were positively associated with more frequent, active visits to natural environments.

(Pasanen, 2014) #7

CARD SET 3- DESCRIPTIONS (BACK OF FLASHCARD)

Vacant Lot “Greening”

Exercise in Nature

CARD SET 3- TITLES (FRONT OF FLASHCARD)

Questions with answers

- Researchers found reduced gun assaults and vandalism after doing this to vacant lots.

Vacant lot greening

- Researchers found that time in nature decreased symptoms of this disorder. “Doses of nature” could serve as safe, inexpensive, widely accessible alternatives to medications like Ritalin. **ADHD**

- Incorporating trees and grass in schoolyards could play an important role in the classroom, better preparing children to return to the class with higher _____. **Attention Spans**

- A study found that when girls had a view from their home with more _____ elements, as opposed to man-made ones, the higher their self-discipline and concentration. **Natural**

- Boys were found to have better attention spans if there was a lot of nature visible from their _____. **Play Space**

- _____ asserts that people can concentrate better after spending time in nature, or even looking at scenes of nature. It has also been associated with lowered aggression, greater overall community safety, and greater overall health. **Attention Restoration Theory (ART)**

- In a study of urban residents, aggression was found to be less when there is vegetation nearby than if it is more barren, overall improving neighborhood _____. **Safety**

- When residents of housing with lower levels of nearby _____ were compared to residents of similar housing with just concrete and asphalt, the former individuals were significantly more effective in coping with major life issues than their counterparts, according to a study of residents of an urban housing development. **Vegetation**

- New research suggests that _____ is an important external resource for coping with life issues, in addition to the significant importance of social support. This could point to a possible new focus for intervention efforts. **Physical Context**

- In lower income, inner city neighborhoods, increasing green space may help provide individuals and families the psychological resources needed in order to _____. It was said that trees were “helping to ‘take arms against a sea of troubles.’” **Cope with Major Life Issues**

- What is a measure of sense of community, which is stronger among residents who live close to green open spaces? It includes more activities, more visitors, more concern for helping and supporting one another. **Stronger neighborhood Ties**

- Although physical health is associated with proximity to parks for exercise reasons, _____ health is also related to residential distance from parks, comparable to decreasing local unemployment rates by two percentage points. **Mental Health**

· According to a recent Dutch study, 10% more green space in the living environment is comparable with a decrease in age by 5 years, likely leading people to live longer, healthier lives. What is this health benefit also known as? **Greater Longevity**

· In a study of 10,000 people, living near green environments was positively related to _____, evidenced by both physical and mental indicators, reducing general medical expenses. **Better Overall Health**

· Low-income families who moved closer to green spaces tended to have a higher capacity to focus or direct attention, also known as _____. **Improved cognitive functioning**

· After a longitudinal study of youth, researchers observed that those who have a park or outdoor play space within 500 meters of their residence have reduced rates of _____. **Childhood Obesity**

· What is a numerical measure of weight and obesity, which tends to be lower (healthier) based on proximity to green spaces, parks, and recreational resources? **Body Mass Index (BMI)**

· More than 100 studies have confirmed that stress reduction and mental restoration are significant benefits associated with green areas and vegetation. Even watching _____ on a computer or television monitor has been found to be restorative. **Images of Nature**

· Green spaces provide restorative settings that offer people respite and recovery from daily and chronic _____. **Stress**

· According to a study from Finland, repeated _____ is related to improved long term well-being, more explicitly than repeated exercise in built environments indoors or outdoors. **Exercise in Nature**