An Environmental change for Obesity Prevention
Positive Outcomes Associated with a Garden
(obesity prevention and more)

CHILD
- Increased fruit and vegetable consumption
- Increased physical activity / decreased sedentary behavior
- Improved food systems literacy
- Improved proxy efficacy
- Increased volunteerism
- Increased access to gardening

COMMUNITY
- Improved food security
- Increased social interaction
- Increased pride
- Safer Communities
- Improved life satisfaction and well-being
- Rise in property values

PARENT (Guardian)
- Increased fruit and vegetable accessibility
- Increased value of fruits and vegetables
- Increased involvement and interest

GARDEN
- Increased fruit and vegetable accessibility
- Increased value of fruits and vegetables
- Increased involvement and interest
- Safer Communities
- Improved food security
- Increased social interaction
- Increased pride

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<table>
<thead>
<tr>
<th>Art &amp; Music</th>
<th>Health</th>
<th>Language Arts</th>
<th>Math</th>
<th>Physical Education</th>
<th>Science</th>
<th>Social Studies</th>
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</thead>
<tbody>
<tr>
<td>Drama or puppets</td>
<td>Food Security</td>
<td>Written Expression</td>
<td>Estimating and measuring</td>
<td>Walking</td>
<td>Science Skills</td>
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<tr>
<td>Pen &amp; Ink, rubbings, charcoal</td>
<td>Feeding Others</td>
<td>Non-fiction</td>
<td>Weight measurements</td>
<td>Lifting</td>
<td>Observing</td>
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<tr>
<td>Artistic Arrangements for gifts</td>
<td>Teaching the Value of local food Sources</td>
<td>Fiction</td>
<td>Volume</td>
<td>Carrying</td>
<td>Recording</td>
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<tr>
<td>Illustrating expressive writing</td>
<td>Nutrition Education</td>
<td>Expressive Language (speech)</td>
<td>The Plot</td>
<td>Digging</td>
<td>Measuring</td>
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<tr>
<td>Vegetable printing</td>
<td>Making healthy choices about food and Diet</td>
<td>Listening</td>
<td>Time</td>
<td>Planting</td>
<td>Concluding</td>
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<td>Vegetable dyes</td>
<td>Importance of exercise</td>
<td>Reading</td>
<td>Plant Growth</td>
<td>Raking</td>
<td>Comparing</td>
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<tr>
<td>Natural art drawings or collage</td>
<td>Breathing fresh air</td>
<td>Handwriting</td>
<td>Recording</td>
<td>Breathing fresh air</td>
<td>Predicting</td>
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<tr>
<td>Painting, sketching</td>
<td>How to use tools safely</td>
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<td>Singing</td>
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<td>Drama</td>
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<td>Instrumental music (rhythms of gardening)</td>
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</tbody>
</table>

Math:
- Estimating and measuring
- Weight measurements
- Volume
- The Plot
- Time
- Plant Growth
- Recording
- Logging
- Graphing
- Charting
- Geometry
- Area
- Scale drawing on graph paper
- Computation

Physical Education:
- Walking
- Lifting
- Carrying
- Digging
- Planting
- Raking
- Breathing fresh air
- Dexterity and Balance

Science:
- Science Skills
- Observing
- Recording
- Measuring
- Concluding
- Comparing
- Testing
- Predicting
- Related Activities
- Tools
- Seeds
- Soils
- Temperature
- Plant Growth
- Sunlight
- Water usage

Social Studies:
- Discussing the Environment
- Cultural Exchange
- Developing a positive self-image through success experiences
- Support multiple intelligences teaching
- Learning about agricultural economy
- Developing insight into global conservation matters

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Data compiled from educator observations of 2010-11 NGA garden award programs. (272 awards impacting 42,537 students).

NGA Grants Awards:

~ Subaru Healthy Sprouts
~ Muhammad Ali Center Peace Garden
~ Welch’s Harvest Grants
~ Mantis Community and Youth Gardens
~ It’s All About the Fruit and Veggies!
~ Youth Garden Grants
~ Farmer’s Garden by Vlasic
~ Midwest Adopt a School Garden Award
Research Supporting Positive Outcomes in Children from Garden-Based Education

~ Increase fruit and vegetable consumption  
  (McAleese & Rankin, 2007; Lautenschlager & Smith, 2007)

~ Moderate intensity physical activity  
  (Domenghini & Shoemaker, unpublished doctoral dissertation)

~ Increase knowledge about food systems  (Lautenschlager & Smith, 2006)

~ Increase nutrition knowledge  
  (Morris & Zidenberg-Cherr, 2002; Parmer, et al., 2009)

~ Increase preference for vegetables  
  (Morris & Zidenberg-Cherr, 2002; Lineberger & Zajicek, 2000)

~ Increase willingness to try vegetables  (Morris, et al., 2001)

~ Improve science achievement  
  (Klemmer, et al., 2005; Smith & Motsenbocker, 2005)

~ Increase life skills-working with groups & self-understanding  
  (Robinson & Zajicek, 2005)

~ Increase self-efficacy for gardening  
  (Poston, et al., 2005; Domenghini, et al., 2011)

~ Increase asking for fruits and vegetables to made available at home  
  (Heim, et al., 2011)

~ More positive environmental attitudes  (Waliczek & Zajicek, 1999)

~ Develop skills and increase empowerment  (Pothukuchi, 2004)

Please see your handout for additional garden facts about parents/guardians and communities.
Join Us In Our Initiative to establish A Garden in Every School®

www.garden.org
www.kidsgardening.org
Research Supporting Positive Outcomes from Garden-Based Education

**Children**

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**Parents/Guardians**

- Increase home availability and accessibility of fruits and vegetables (Heim, et al., 2011)
- Increase value of fruit and vegetable consumption (Heim, et al., 2011)
- Increase parental involvement (Alexander & Hendren, 1998)
- Higher job satisfaction when green space is visible from office desk (Kaplan, 1993)
- Moderate form of PA for older adults (Park, et al., 2008)

**Community**

- Improve food security (Corrigan, 2011)
- Increase social networking (Sullivan, et al., 2004)
- Fewer crimes and instances of graffiti (Kuo & Sullivan, 2001)
- Increase Fruit and Vegetable Consumption (Alaimo, et al., 2008)
- Increase property values (US EPA 2011)
- Improve psychological well-being (Barnicle & Midden, 2003)
- Improve understanding of food systems (Corrigan, 2011)
Citations


