



**MONARCH
HEROES**

“I would say the Eco-Schools Monarch Heroes program has been one of the most rewarding experiences I have had teaching.”

Kimberly Boyce-Quentin, STEM Lab Instructor & Gifted/Talented Coordinator, Piney Point ES, HISD



National Wildlife Federation is working across the U.S. to help restore the iconic monarch butterfly, whose population has plummeted by more than 90 percent in the past 20 years. The milkweed host plants and other nectar-producing plants that monarchs rely upon for breeding and feeding have largely disappeared due to habitat destruction. NWF is working to restore habitat in their flyway.

Monarch Heroes Partnership with Urban Schools

To help build awareness and reverse monarch decline, Monarch Heroes engages K-12 students in monarch butterfly conservation through the planning, building and maintaining of school monarch habitat gardens. Students learn about the crisis facing the monarch and what they can do to help. Working with campus teams of students, teachers, and community volunteers, students create monarch habitat gardens on their school campuses which provide native milkweed and nectar plants to monarchs migrating through Texas. As gardens mature, students engage in citizen science, collecting monarch migration data that contributes to on-going monarch research.

“I can honestly say that Monarch Heroes has played an instrumental part in the increase of my student’s love of learning, while also decreasing the amount of behavioral issues in my classroom. I have been able to extend my students’ learning outside of the classroom walls and into the gardens for all subject areas. We feel so proud that we are helping the Monarch butterfly and other pollinators in our community for a greater cause.”

Victoria Reyna, 2nd Grade teacher, Barrington ES Austin ISD





Monarch Heroes Year 1 Grant Application

Monarchs Need Our Help!

The iconic monarch butterfly, whose population has plummeted by 90% over the last 20 years, needs our help. Due to destruction of habitat across the butterflies' breeding range, native milkweed and other nectar-producing plants that monarchs rely upon for breeding and feeding have largely disappeared along their migratory route. Texas is known as the migration funnel for the monarch, and Houston can accomplish a great deal for monarch butterflies by becoming a critical waystation for them during their migration to and from Mexico.

The **National Wildlife Federation (NWF)** is partnering with the Houston Independent School District (HISD) and the Lady Bird Johnson Wildflower Center to help reverse monarch butterfly decline by creating pollinator gardens on select HISD campuses. The gardens will provide critical food sources – nectar plants and native milkweed (the monarch butterfly's sole larval host plant) – to monarchs migrating through Houston, and will empower students and school communities to take action to help support monarch butterflies on their journey.



New habitat at Poe Elementary

Selected schools will receive the following:

1. 2 Professional development workshops (June 7-8 and September 13)
2. Award of **up to \$1500** to purchase garden supplies, upon completion of budget and design
3. NWF's *Monarch Mission* Curriculum (TEKS-aligned; Spanish version available if preferred)
4. Native milkweed from the Lady Bird Johnson Wildflower Center (LBJWC)
5. 2-3 site visits and consultation from NWF
6. Schoolyard Habitat® sign
7. Eco-Schools USA recognition

To apply for school awards, schools must agree to do the following:

- Maintain and commit resources to the garden for a minimum of 3 years
- Dedicate a minimum of 300 square feet on your campus to build a habitat for the monarch butterfly (location must be approved by district facilities)
- Form a team of a minimum of 3-4 members to help plan, design, maintain and use the garden for educational purposes. The team should include 2 science/math teachers and 1 parent or community volunteer
- Send 2-3 team members to both professional development workshops (1 must be a science and/or math teacher). **The same teachers are required to attend both workshops**
- Include native milkweed and nectar plants that attract monarchs in the garden



- Install garden in October for completion by November 1, 2019
- Prevent use of herbicides, pesticides, or fungicides on or near the garden
- Provide a signed document including all team members' signatures and the principal's signature, acknowledging the grant responsibilities
- Complete a mid-year (Dec 2019) and end-of-year (May 2020) survey and report
- Register the garden as a National Wildlife Federation Schoolyard Habitat® after it is installed (<http://www.nwf.org/Garden-For-Wildlife/Certify.aspx>)
- Designate a team member to be the lead on Eco-Schools audits and the school's online dashboard, who will work to make sure the team is prepared to certify as a Bronze Level or higher Eco-School by May 2020 (<http://www.nwf.org/Eco-Schools-USA>)
- Hold one on-campus student-led community forum at your school to showcase your habitat garden to the local community and request volunteers
- Supervise and arrange for students to host a table to share garden work progress during a school or public event (May 2020)

Eligible Applicants:

This program is open to all Houston ISD K-12 public schools.

Application Guidelines:

- Incomplete applications will not be considered
- A complete application will include the following:
 - Online application: <https://www.surveymonkey.com/r/nwf-mheroesYr1>
 - Four photos of your proposed site(s). Each photo should face one of the cardinal directions – North, South, East, and West (this is submitted through the online application)
 - one-page signed application agreement (found at the end of this document) submitted either through scanning and emailing, or sending to the address specified
- Application agreements should be emailed, mailed, or hand-delivered to: Karen Bishop bishopk@nwf.org or National Wildlife Federation, 505 E. Huntland Drive, Ste 485, Austin, TX 78752
- Applications will be evaluated and selected for funding by a committee
- **All parts of the application must be completed by April 30, 2019**

Eligible Costs:

Funding may be requested for the following: plants, seeds, mulch, soil, lumber and hardware for raised beds, gardening tools, gloves, signage, and other similar materials.

Award Amount:

The award amount is **up to \$1500**, dependent on available funds and scale of proposed project. Award funds will be given to HISD Foundation to be used by each campus as needed for their project.

Reporting Requirement:

A mid-year and end-of-year report, including photos, a summary explaining how funds were used and how remaining funds are expected to be used, and 3 student work samples, is required. Instructions will be provided to grant award recipients. Teachers will also complete an online end-of-year teacher survey.

Publicity:

Successful grant recipients are required to acknowledge the funding source (**National Wildlife Federation**) and the program (**Monarch Heroes**) in any printed materials or public announcements, such as press releases and website posts, about the garden. In social media, the following handles and hashtags can be used:
 @MonarchHeroes @EcoSchoolsUSA #MonarchHeroes

Project Calendar:

Project Month/Year	Important Dates
March 2019	March 18 - Schools invited to apply
April 2019	April 30 - Application due, including online portion and one-page signed document
June 2019	June 7 – 1 st professional development workshop June 8 – optional ½ day field trip to visit existing Monarch Heroes school gardens
September 2019	Sept 13 – 2 nd professional development workshop (note this is a school day. Substitute costs will be covered by Austin ISD)
October 2019	Garden installation should begin this month
November 2019	Nov 1 – Garden must be installed before this date
December 2019	Dec 10 – mid-year progress report due, including photos and 3 student work samples
May 2020	May – Host community forum before May May (exact date TBD) – Monarch Heroes and Eco-Schools USA Celebration & Showcase May 17 - Updated progress report due, including photos and 3 student work samples; end-of-year teacher survey

SITE SELECTION CRITERIA**1. Full sun, 6-8 hours**

This is required for most native nectar plants and for native milkweed. Your chosen area can have some shade. But at least 75% of it should have full sun for 6-8 hours. Determine the amount of sun your area receives by doing a Sun/Shade Survey. Observe the site over a school day. When does sun first shine on the proposed site? Check every hour until the sun has set or is behind a building.

Read more here: https://drive.google.com/file/d/0B_w83YQucZ-FamI3emhrM2prR28/view

2. Soil drains well

Native milkweed and nectar plants in the Austin area are adapted to well-draining soil. To test your soil, use the percolation test – dig a square hole, 1 foot deep by 1 foot wide. Fill it with water and allow to drain completely. Fill it again. After 15 minutes, measure how much the water has fallen with a ruler. Multiply by four to calculate how much water will drain in an hour.

< 1 inch/hour = too slow

1-6 inches/hour = well-drained

>6 inches/hour = too fast

If your chosen area does not drain well (either too fast or too slow), you will need to consider either amending the soil (mixing it with organic matter or sandy soils) building raised beds, or selecting plants that

can tolerate getting their feet wet. Read more here: <https://www.rodalorganiclife.com/garden/what-the-heck-does-well-drained-soil-actually-mean>

3. Protected from north winds

Many plants and pollinators need protection from strong (and cold) north winds. If you have a building or shrubs on the north side of your garden, you are protected. Otherwise, your garden design plan will need to include plants that can buffer the wind in some way.

4. Protected from high traffic area

Monitor traffic patterns in the proposed site area. Do students often cut across this area, or is it the site of other activities including recess or sports? If so, you will need to consider ways to minimize this extra traffic by creating fencing or pathways in the areas of high traffic.

5. Easily accessible from classrooms and supportive of outdoor learning

One of the purposes of your Monarch Heroes garden will be to serve as an outdoor classroom. The proposed site should be close enough to be accessible to students and teachers during the school day. Consider the safety and quality of the site – is it near a busy street or a large and loud generator? These locations are likely not as suitable for outdoor learning.

6. Water source close by

The garden will need to be watered regularly for at least the first year. Having a water spigot nearby will make this task a lot easier. If possible, drip irrigation is even better. Speak with your facilities staff to see if there are existing sprinklers that might be converted to drip irrigation.

7. Approved by facilities and principal

Speak with your facilities and your principal to ensure there are no upcoming proposed uses or other reasons why the location would be unsuitable for a Monarch Heroes garden.

8. How long will we be able to use the site?

This should be a minimum of three years

9. Is there room for future growth?

Every situation is different and this is not a requirement, but it can be beneficial to have extra space to enhance your garden area with outdoor learning features (aka places to sit), and/or expand your garden area.



MONARCH HEROES YEAR 1 SCHOOL APPLICANTS AGREE TO DO THE FOLLOWING:



1. Maintain and commit resources to the garden for at least 3 years
2. Dedicate a minimum of 300 square feet on school grounds (approved by district facilities) to create monarch habitat that also serves as an outdoor classroom
3. Form a team of 3-4 members to help plan, design, maintain and use the garden for educational purposes. The team should include 2 science and/or math teachers as well as a 1 parent or community volunteer
4. Send 2-3 teams members to both professional development workshops (1 must be science and/or math teacher) on **Friday/Saturday, June 7-8, 2019 and Friday, Sept 13, 2019. If 2 team members do not attend, this may result in removal from the program**
5. Attend one webinar to better understand the Eco-Schools USA program, how to document your Monarch Heroes work on your Eco-Schools Dashboard, and how to apply for an Eco-Schools USA award in Fall 2019 (exact date TBD)
6. Include native milkweed and nectar plants that attract monarchs in the garden
7. Install the garden in Oct for completion on or before Nov 1, 2019
8. Prevent use of herbicides, pesticides, or fungicides on or near the garden
9. Provide this signed document including all team members' signatures and the principal's signature, acknowledging the grant responsibilities. NWF should be notified if team members change
10. Complete a mid-year (Dec 2019) and end-of-year (May 2020) survey and report
11. Register the garden as a National Wildlife Federation Schoolyard Habitat® after it is installed (<http://www.nwf.org/Garden-For-Wildlife/Certify.aspx>)
12. Designate a team member to be the lead on Eco-Schools audits and the school's online dashboard, who will work to make sure the team is prepared to certify as a Bronze Level or higher Eco-School by May 2020. (<http://www.nwf.org/Eco-Schools-USA>)
13. Hold one on-campus student-led community forum at your school to showcase your habitat garden to the local community and request volunteers
14. Supervise and arrange for students to host a table to share garden work progress during a school our public event (May 2020)

We agree to the criteria listed above. Team members that circle "Y" below will attend the two workshops as requested or do all in their power to send a replacement team member.

LEAD Team Member Name (responsible for all team communications): _____

LEAD Team Member Signature: _____ Attending Workshop (required for lead). Y N

Team Member Name: _____ Signature: _____
Attending Workshop? Y N

Team Member Name: _____ Signature: _____
Attending Workshop? Y N

Team Member Name: _____ Signature: _____
Attending Workshop? Y N

As Principal of _____, I approve this project and will ensure a minimum of two teachers attend the workshops on the dates specified, or send a replacement team member.

Principal Name: _____ Signature: _____

**POWELL FOUNDATION
HERZSTEIN FOUNDATION
WELLS FARGO**



**GARDEN CLUB OF HOUSTON
HAMMAN FOUNDATION**

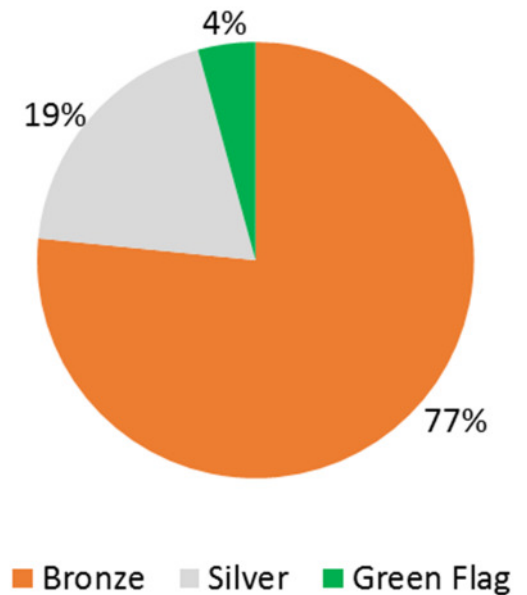
Current Awarded National Wildlife Federation Eco-Schools (Houston ISD, November 2018)



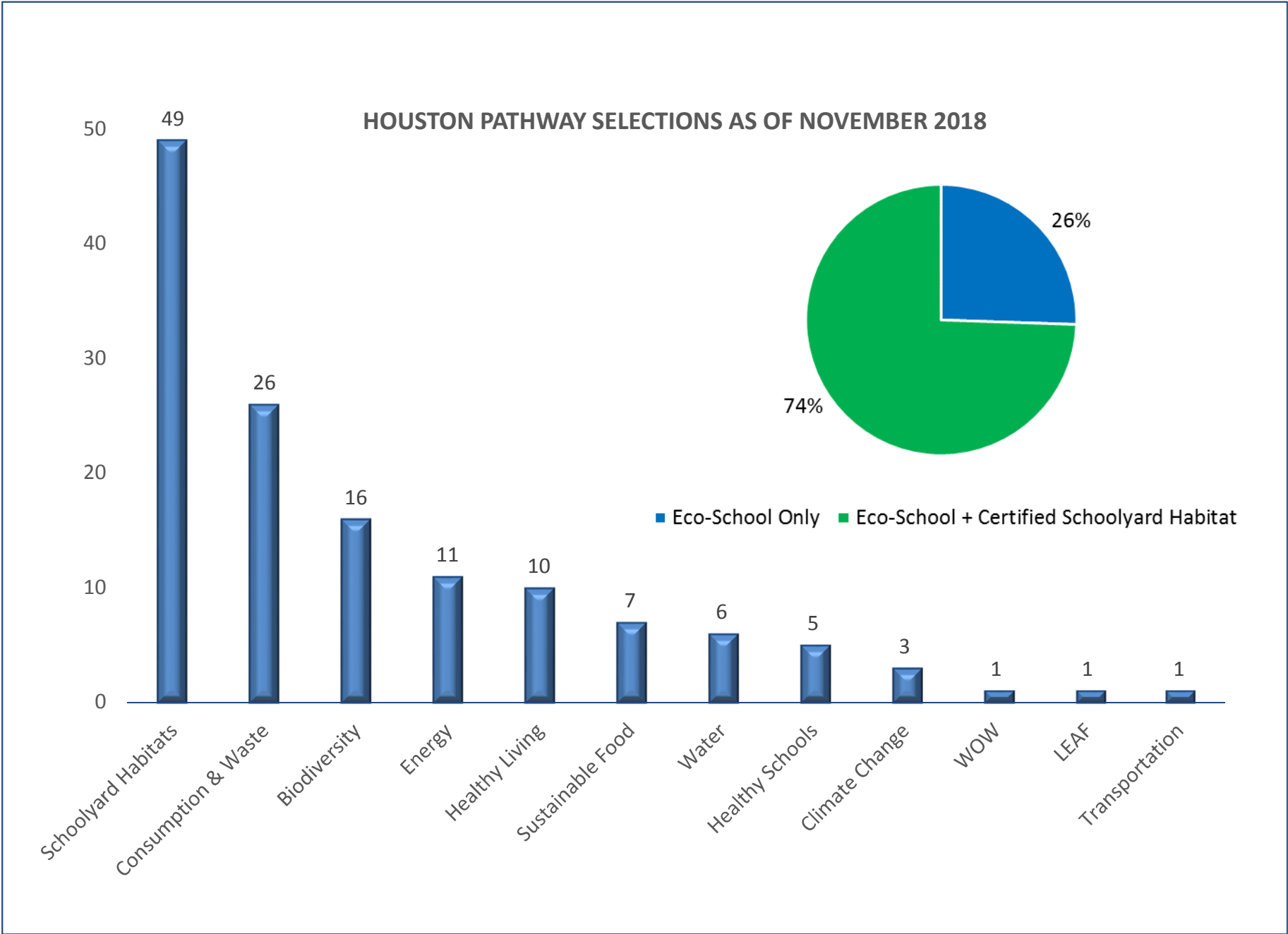
ATTUCKS MS
AUSTIN HS
BCMA @ RYAN MS
BERRY ES
CARNEGIE VANGUARD HS
DAILY ES
DOGAN ES
DURKEE ES
HARTSFIELD ES
HELMS ES
KOLTER ES
LANTRIP ES
LONGFELLOW ES
LOVETT ES
MACGREGOR ES
MILBY HS
MITCHELL ES
NORTHLINE ES
OATES ES
ORTIZ MS
POE ES
RED ES
RIVER OAKS ES
SEGUIN ES
STEVENS ES
TANGLEWOOD MS
WESTSIDE HS
WISDOM HS

CESAR CHAVEZ HS
DAILY ES
ED WHITE ES
ELIOT ES
FONDREN MS
HARRIS, R.P. ES
HARVARD ES
LANIER MS
POE ES
RED ES
RIVER OAKS ES
SUTTON ES

BRIARGROVE ES
PINEY POINT ES



*NOTE: There are 283 school in Houston ISD. Currently 94 schools (33%) are registered Eco-Schools – of these, 88 have achieved one or more awards or are currently working on an award.



*Note: There are 83 registered Schoolyard Habitats in Houston. 35 of them are Eco-Schools (74%).

Current Registered Eco-Schools in Houston ISD, November 2018

Current HISD Eco-Schools, November 2018

1. Alcott Elementary
2. Askew Elementary
3. Attucks MS
4. Austin High School
5. Barrick Elementary
6. Baylor College of Medicine Academy at Ryan Middle School
7. Baylor College of Medicine Academy at Rusk Middle School
8. Bell Elementary
9. Bellaire High School
10. Berry ES
11. Braeburn Elementary
12. Briargrove Elementary
13. Carnegie Vanguard HS
14. Cesar Chavez High School
15. Clifton Middle School
16. Cook Elementary School
17. Cornelius Elementary
18. Crockett Elementary
19. Cunningham Elementary
20. Daily Elementary
21. Dechaumes Elementary
22. Dogan Elementary
23. Durkee ES
24. Eastwood Academy HS
25. Ed White Elementary
26. Eliot Elementary
27. Emerson Elementary
28. Energy Institute High School
29. Fleming Middle School
30. Foerster Elementary
31. Fondren Middle School
32. Foster Elementary
33. Franklin Elementary
34. Furr High School The Green Institute
35. Gabriela Mistral C.E.C.
36. Garden Oaks ES
37. Golfcrest Elementary
38. Gregory Lincoln Education Center
39. Hamilton Middle School
40. Harper Alternative
41. Harris (R.P.) Elementary
42. Hartsfield Elementary
43. Harvard ES
44. Heights High School
45. Helms ES
46. Henderson Elementary
47. Hilliard Elementary
48. Hobby Elementary
49. Jones Futures Academy HS
50. Kolter Elementary
51. Lanier Middle School
52. Lantrip Elementary
53. Law Elementary
54. Lockhart Elementary
55. Longfellow Elementary
56. Lovett Elementary
57. MacGregor Elementary
58. Manuel Crespo Elementary
59. McGowen Elementary
60. Mcnamara Elementary
61. Memorial Elementary
62. Milby HS
63. Milne ES
64. Mitchell Elementary
65. Northline Elementary
66. Northside High School
67. Oak Forest Elementary
68. Oates Elementary
69. Ortiz Middle School
70. Osbourne Elementary
71. Outdoor Education Center, Olympia
72. Pershing Middle School
73. Piney Point ES
74. Poe Elementary
75. Pugh Elementary
76. Red Elementary
77. River Oaks Elementary
78. Roberts Elementary
79. Seguin Elementary
80. Sharpstown High School
81. Southmayd Elementary
82. Stevens Elementary
83. Sutton Elementary
84. Tanglewood MS

Current Registered Eco-Schools in Houston ISD, November 2018

- | | |
|-----------------------------|-------------------------------------|
| 85. Tinsley Elementary | 90. Westside High School |
| 86. Travis Elementary | 91. Wisdom HS |
| 87. Twain (Mark) Elementary | 92. Whittier Elementary |
| 88. Wainwright Elementary | 93. Woodson Leadership Academy PK-8 |
| 89. Welch MS | 94. Young Men's College Prep. HS |

Registered Eco-Schools: 94 (33% of district given 283 schools in HISD)

- Elementary: 62
- Middle School: 12
- High School: 15
- Other: 5 (includes K-8, CEC, and other)

Award Status:

- Any Award: 47 (16% of district)
- Green Flag: 2 (4% of awarded; 2% of registered)
- Silver: 9 (19% of awarded; 4% of registered)
- Bronze: 36 (76% of awarded; 38% of registered)

Grant Programs over time:

- **Environmental Audits**
- **Litter Less**
- **Monarch Heroes**
- **Student Resilience Ambassadors**
- **USA-Taiwan**