Summer Fun for All Ages with GLOBE Citizen Science!

March 4, 2025

The webinar will begin at 11:00 am MT and will be recorded

Welcome and Introductions

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STARnet

GLOBE Observer
the app of THE GLOBE PROGRAM

NASA

QUEENS PUBLIC LIBRARY

Agenda

- Icebreaker
- GLOBE Overview
- Programming ideas from Queens Public Library
- Activity: Color-a-Pixel Poster
- Art related GLOBE programs
- GLOBE Games & Puzzles
- Discussion and Q&A

Icebreaker

While we wait for more friends to join...

What cloud personality do you have?

(Descriptions by Jade Rael from Santa Fe Indian School)

A. **Cumulus**

Easygoing; happy most of the time; loves sunny days; likes to go on walks or hike.

B. **Stratus**

Peaceful; loves the cool weather; wide range of interests.

C. **Cirrus**

Delicate; quiet and thoughtful; always cold and needs a blanket; loves colors.

GLOBEPROGRAM®

A Worldwide Science & Education Program

127 Countries
53K+ Educators
890K+ Students
290K+ Citizen Scientists

Sponsored by: NASA

Supported by: NOAA, NSF, Department of State

GLOBE provides protocols (40) to monitor Earth's environment and a free database to store and access measurements

GLOBE Observer

the app of THE GLOBE PROGRAM

Download on the App Store

GET IT ON Google Play

1. Download the app
2. Register for an account
3. You will receive an email with a link to confirm

What do the 4 tools have in common?

https://observer.globe.gov/toolkit

Queens Public Library

- Collaboration with NASA GLOBE Clouds team.
- Activities and games.
- Examples:
  - Sky Window
  - Elementary GLOBE Storybooks
  - Cloudscape
  - Cloud Dance

Sky Window

- Safety first: Never look directly at the Sun!
- Make cloud observations and submit your data to GLOBE.
- Available in English and Spanish.

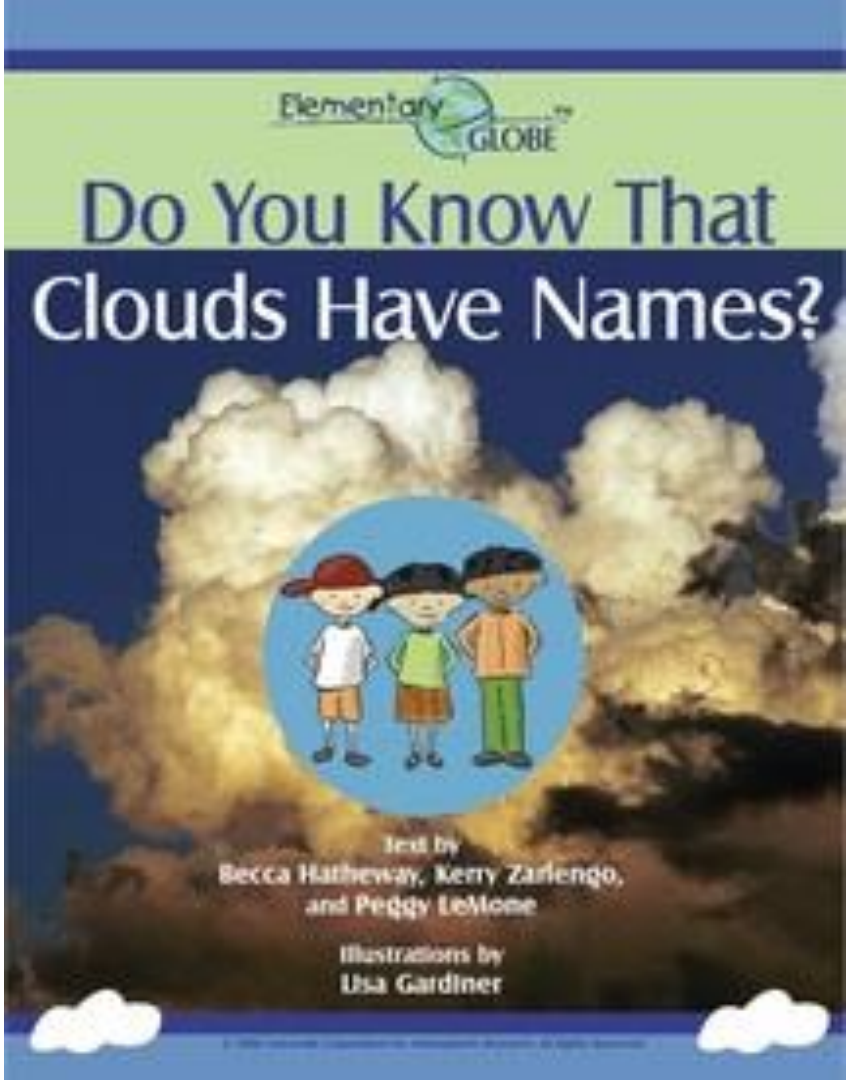
[Sky Window - English]

[Ventana del cielo - Español]

Elementary GLOBE

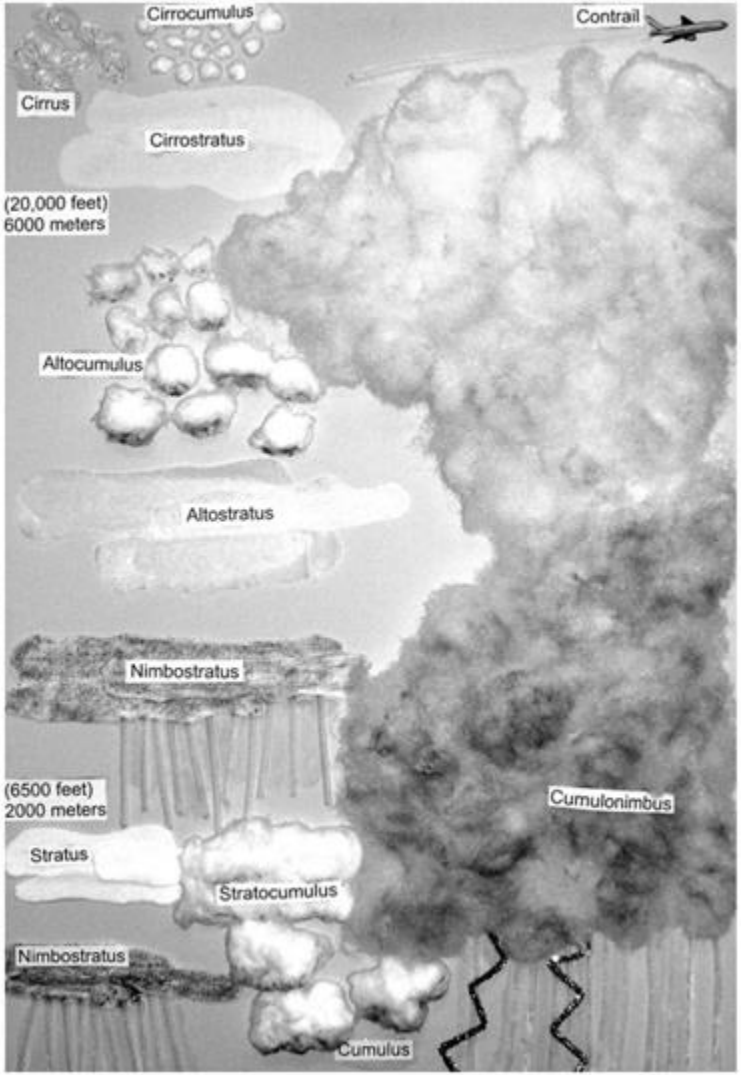
- Introduce students to the various aspects of Earth science:
  - Air quality
  - Climate
  - Clouds
  - Earth system
  - Seasons
  - Soils
  - Water
- Storybook approach, science-based, fictional narrative to engage students in the scientific method.
- Available in:
  - Arabic
  - English
  - French
  - German
  - Norwegian
  - Spanish

Access Elementary GLOBE Modules



Cloudscape

- Sky scene ordering cloud types by altitude.
- Based on Elementary GLOBE book: “*Do You Know That Clouds Have Names?*” and sky observations.
- Using inexpensive materials: cotton balls, paper, fabric, tissues, etc.
- Kids can also describe their cloudscape verbally.



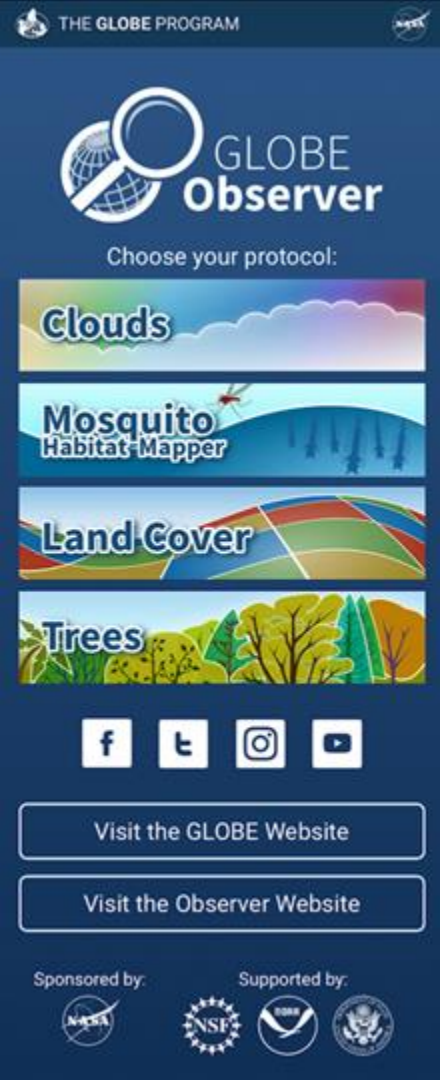
Cloud Dance

Cloud Dance Extended Edition

Precipitation

Contrails

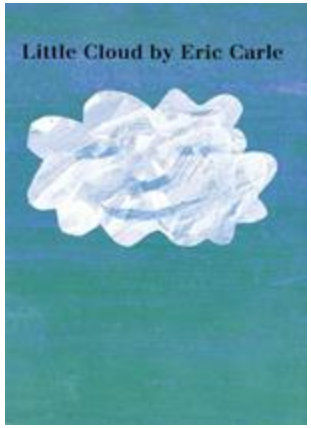
Rainbows

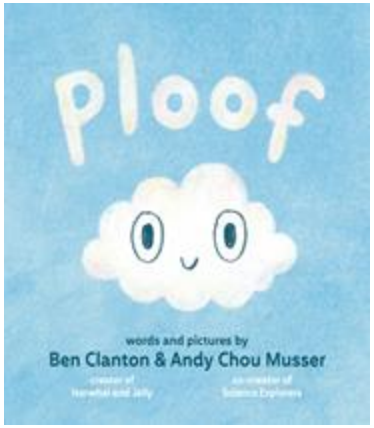


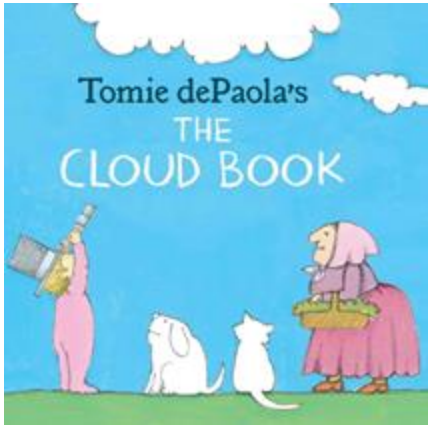
Citizen Science

- Queens Public Library and the NASA GLOBE Clouds team are brainstorming ideas to take the next step.
- Kids are engaged using the Sky Window to identify clouds.
- They love doing the Clouds Dance and the Acorn, Acorn, Tree dance.
- Now, we want their families to join and use the GLOBE Observer app to make observations and contribute to Earth science!

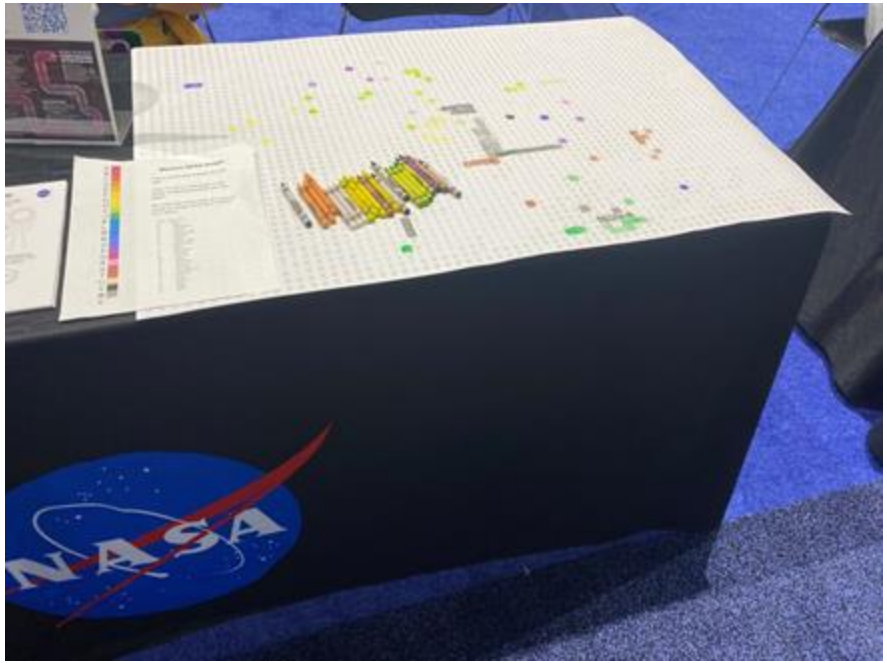
Additional Resources







Color-a-Pixel Poster



Step right up to help collaboratively reveal the mystery image, and learn something new about remote sensing in the process!

- Generate interest
- Start conversation
- Hands-on
- Easy-to-use
- Adaptable

Blog Post:

https://strategies.org/products/color-a-pixel-activity

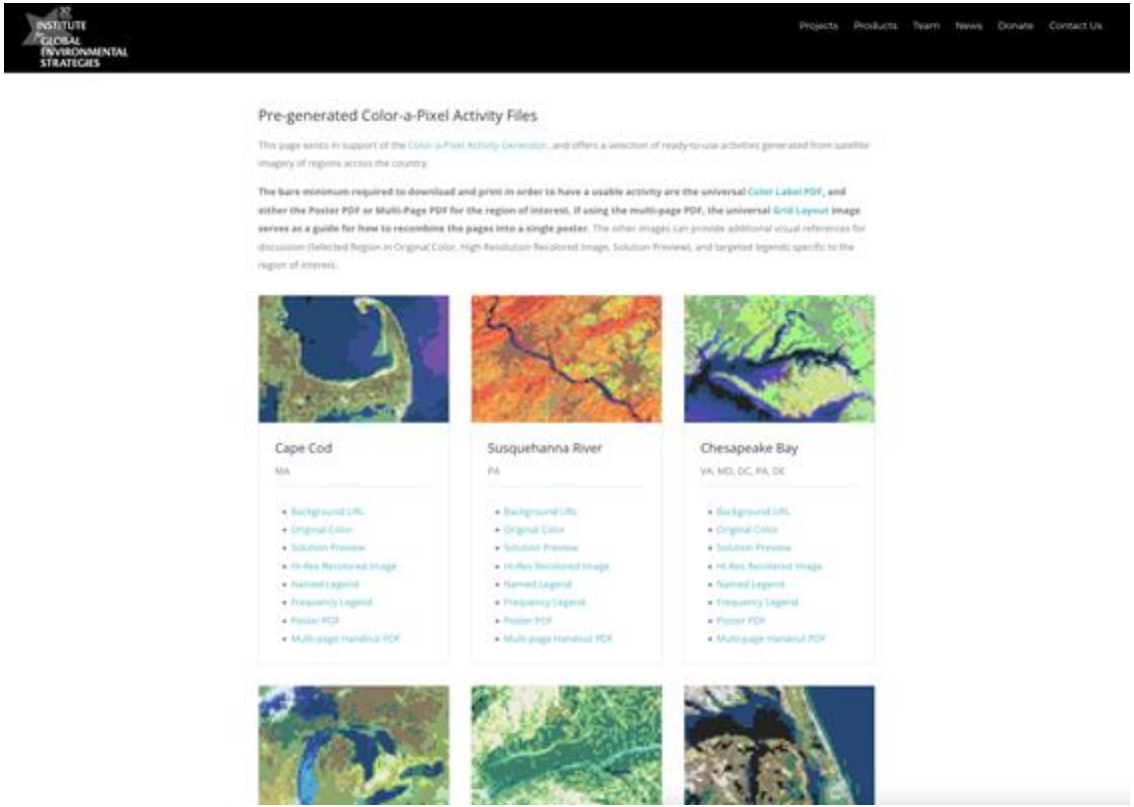
Pre-generated posters:

https://strategies.org/color-a-pixel-pregenerated

Make your own:

https://color-a-pixel.streamlit.app/

Color-a-Pixel: Pre-Generated Posters

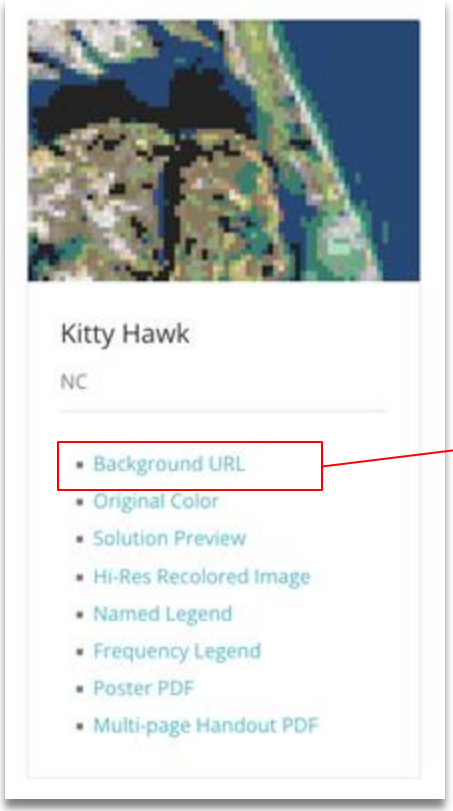


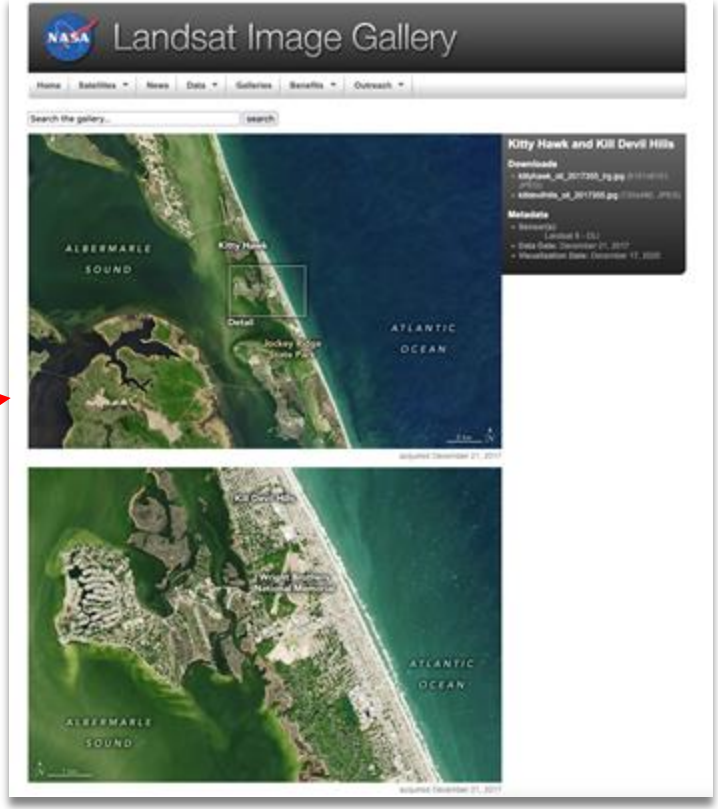
The minimum required to download and print in order to have a usable activity:

- Universal Color Label PDF
- Poster PDF -or- Multi-Page PDF
- If using the multi-page PDF, the universal Grid Layout image serves as a guide for how to recombine the pages into a single poster.

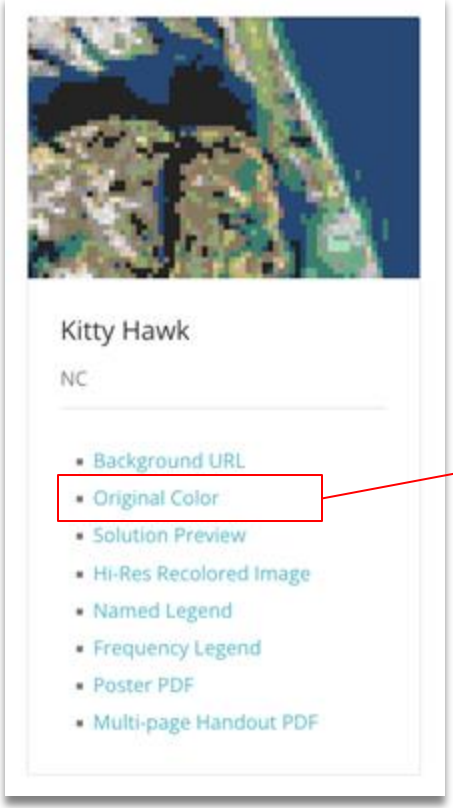
The other images can provide additional visual references for discussion (Selected Region in Original Color, High Resolution Recolored Image, Solution Preview), and targeted legends specific to the region of interest.

Color-a-Pixel: Pre-Generated Posters

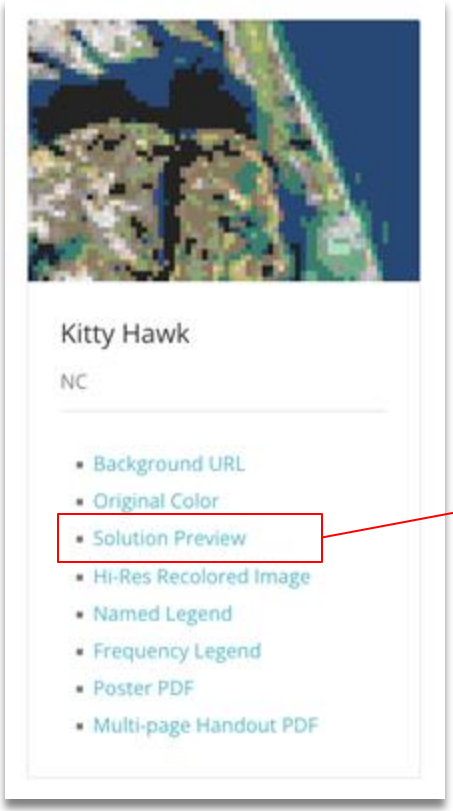


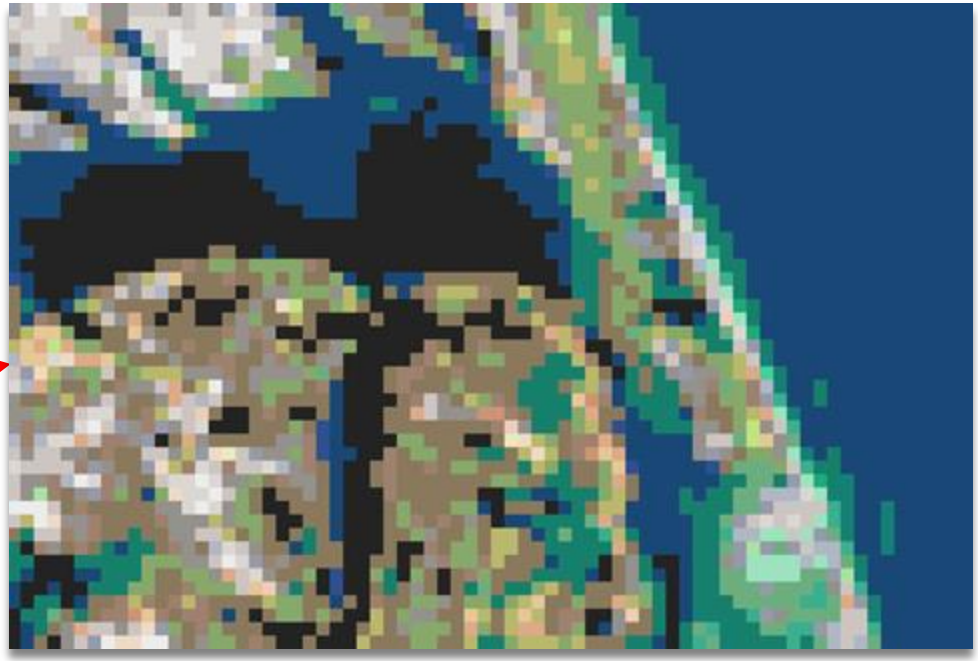


Color-a-Pixel: Pre-Generated Activities



Color-a-Pixel: Pre-Generated Activities





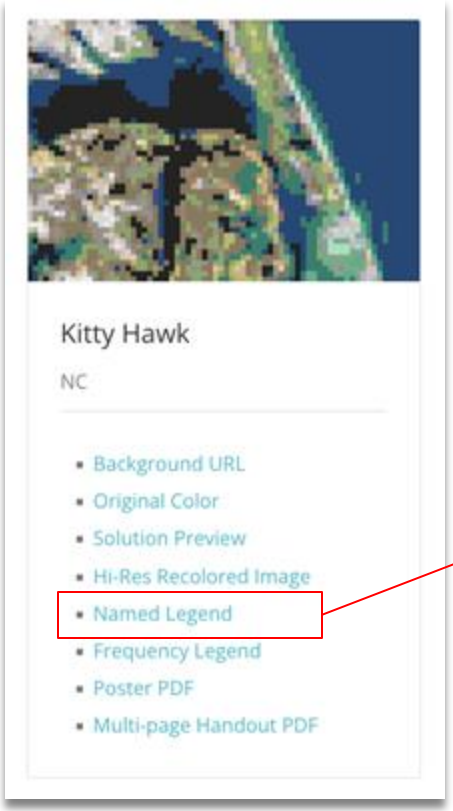
Color-a-Pixel: Pre-Generated Activities

Kitty Hawk

NC

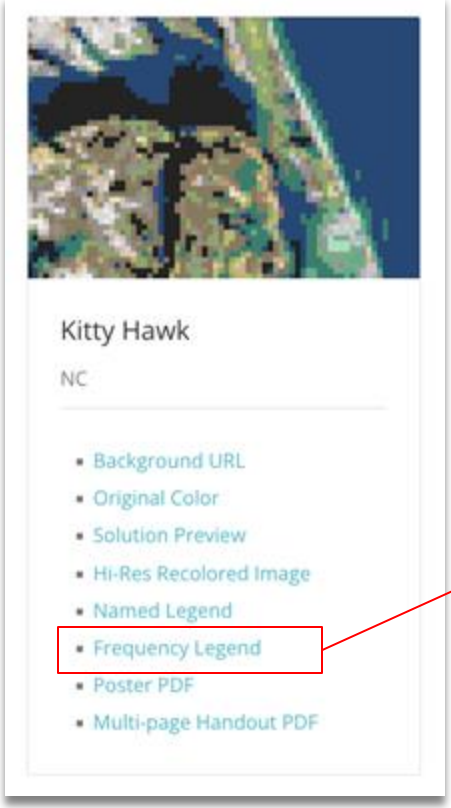
- Background URL
- Original Color
- Solution Preview
- Hi-Res Recolored Image
- Named Legend
- Frequency Legend
- Poster PDF
- Multi-page Handout PDF

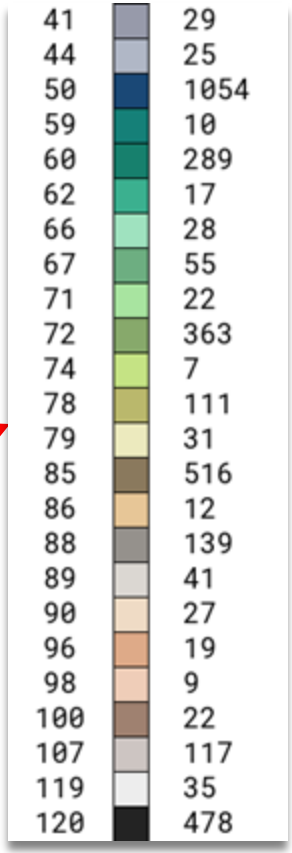
Color-a-Pixel: Pre-Generated Activities



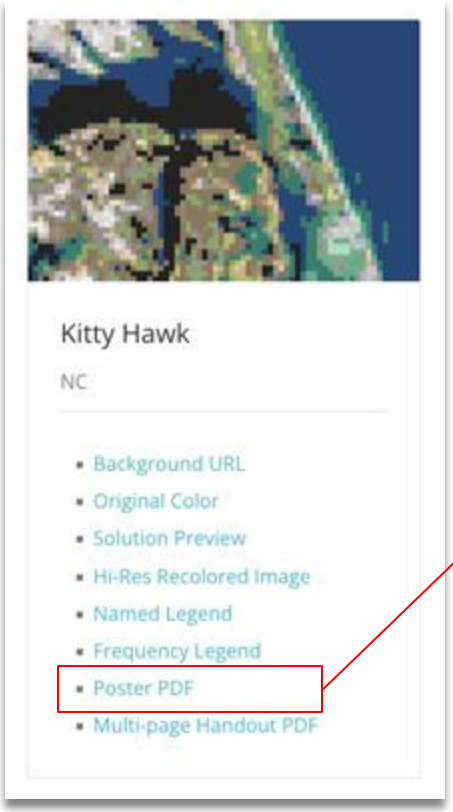
41	Manatee
44	Cadet Blue
50	Midnight Blue
59	Pine Green
60	Tropical Rain Forest
62	Jungle Green
66	Sea Green
67	Forest Green
71	Granny Smith Apple
72	Asparagus
74	Yellow Green
78	Olive Green
79	Spring Green
85	Shadow
86	Gold
88	Gray
89	Timberwolf
90	Almond
96	Tumbleweed
98	Desert Sand
100	Beaver
107	Silver
119	White
120	Black

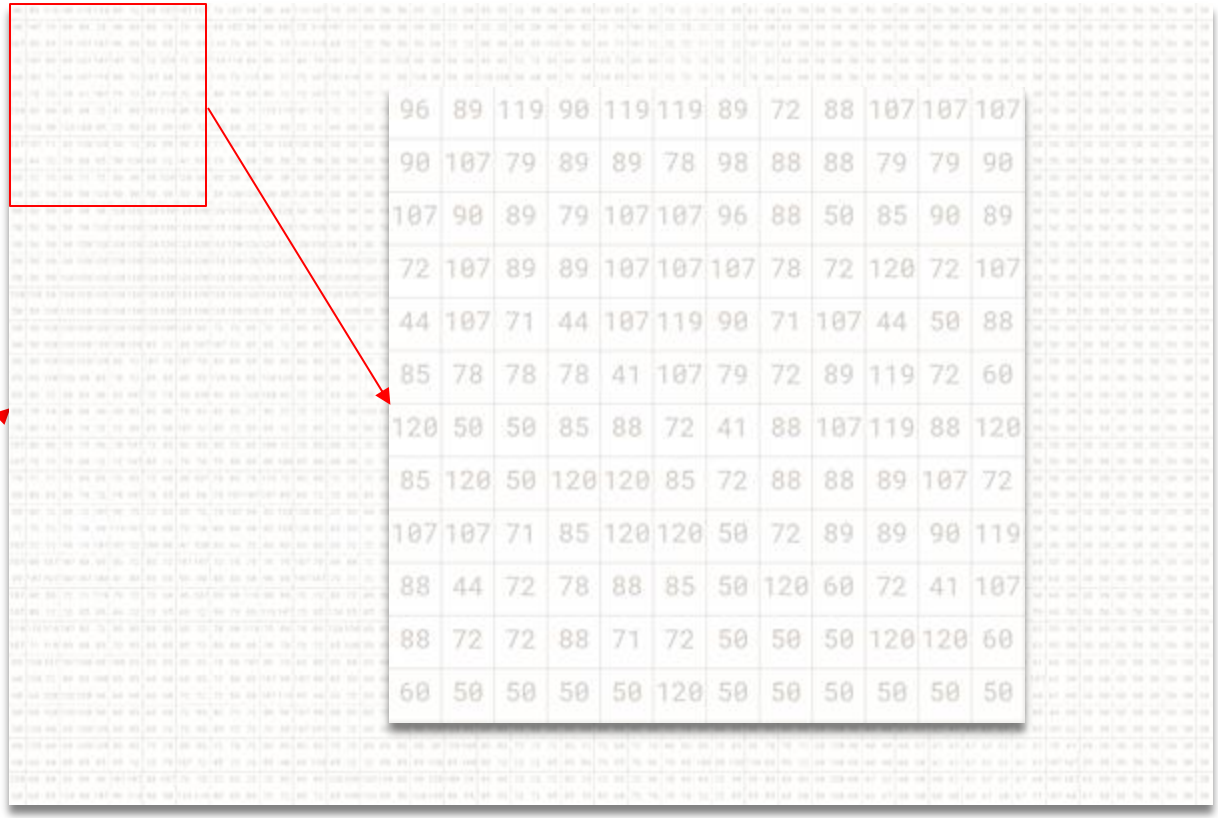
Color-a-Pixel: Pre-Generated Activities



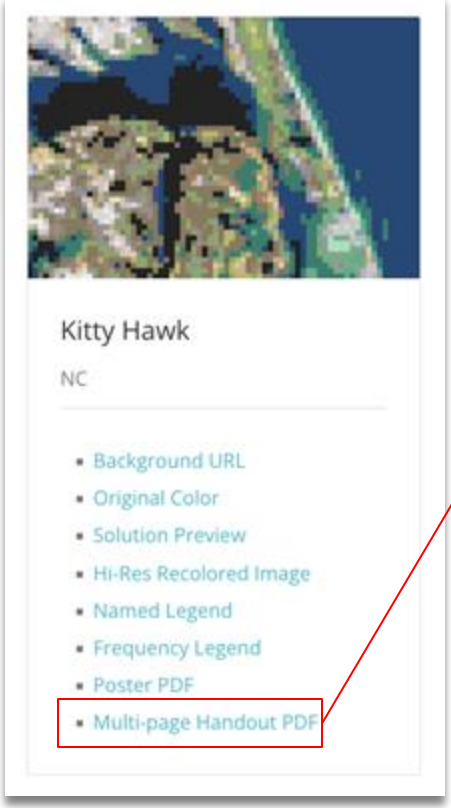


Color-a-Pixel: Pre-Generated Activities

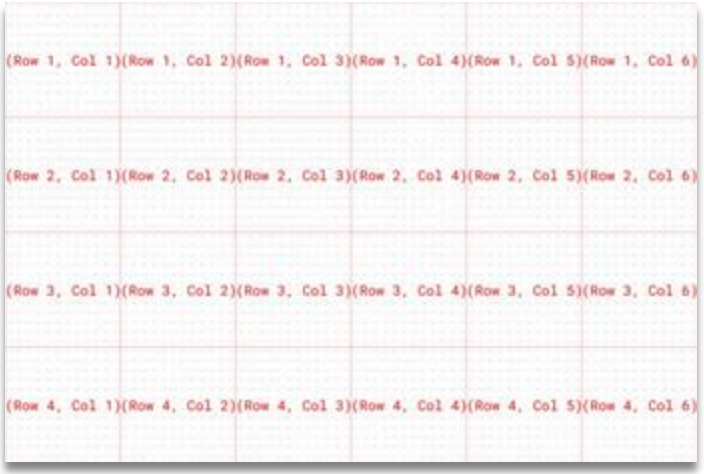




Color-a-Pixel: Pre-Generated Activities



Grid Layout



Color-a-Pixel Poster Programming Ideas and Tips

Game Night

This game night included several activities that participants could rotate through.

People would color for a little bit (some longer than others) then move on to another activity.

Time: ~1-2 hours

Post final image alongside with original image

Print poster on matte paper!

Station/Tabletop Activity

Post instructions with color legend for that image.

Mystery NASA Satellite Image!

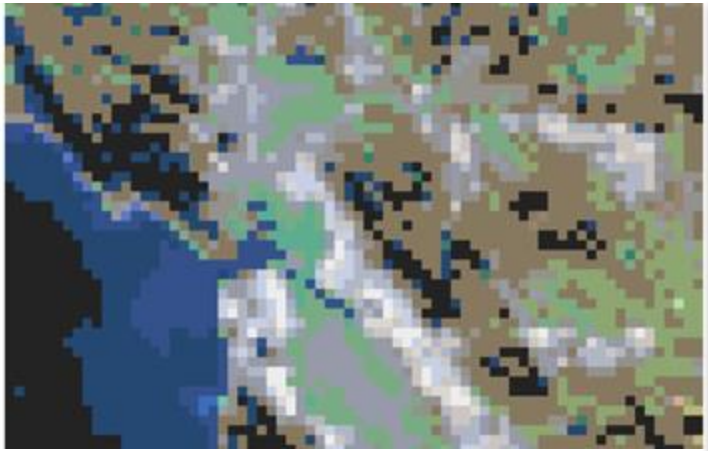
- Match the crayon to the number printed on the poster
- Color in the pixels of to reveal an image of a location from space.
- What clues can you use to guess where this is?

Ideas:

- Start with a few pixels colored in
- Leave the poster up for an event or over a period of time (week).
- Post some clues to generate interest
- Post the answer with original image and link to learn more.

Color-a-Pixel: Practical Tips

Print the color key generated for your image and only put out the crayon colors for that image. When activity is completed share/post the original image.



Pixelated image of San Francisco Bay uses 20 different colors shown in key

36	Royal Purple
41	Manatee
42	Indigo
43	Wild Blue Yonder
44	Cadet Blue
45	Periwinkle
46	Blue Violet
48	Denim
50	Midnight Blue
60	Tropical Rain Forest
62	Jungle Green
67	Forest Green
72	Asparagus
85	Shadow
88	Gray
89	Timberwolf
100	Beaver
107	Silver
119	White
120	Black

Above: Original Landsat 9 image of San Francisco Bay (Credit NASA/USGS)

Color-a-Pixel: Practical Tips

- Crayons are packed randomly by the manufacturer (left photo)
- Sort crayons by color, using paper wrapper as a guide (right photo)

Color-a-Pixel: Practical Tips

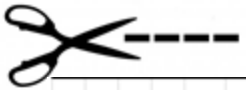
Download and print master key

Sort 120 crayons using master key

Master key is also a template for crayon labels

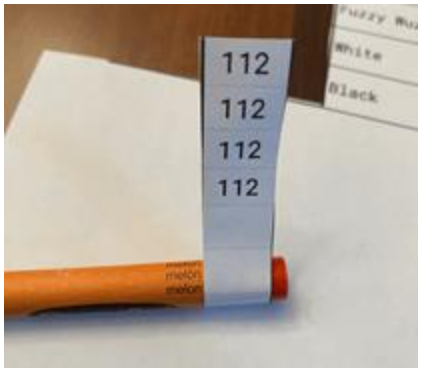
Label crayons with numbers

1. **Cut out label**



112	112	112	112				Melon
113	113	113	113				Bittersweet
114	114	114	114				Sunset Orange
115	115	115	115				Red Orange

2. Wrap label around end of Crayon, using glue stick or tape to secure



Other Ideas

- Write numbers on crayons
- Don’t number crayons, and post the legend with crayon names & numbers

Happy Coloring!

Let us know any suggestions for making this a better activity for libraries.

Share how you use this activity and any tips for others.

- https://strategies.org/contact-us
- Post on STARnet Community
  https://www.starnetlibraries.org/starnet-community/

Art related GLOBE Programs

GLOBE Resources for 2025 Library Summer Reading Programming

- Children's Programming
- Teen Programming
- Intergenerational Programming
- Early Literacy Programming
- Picture Book Reading Lists by Topic
- Further Activities by Topic

https://bit.ly/GLOBE-Libraries

GLOBE Resources for 2025 Library Summer Reading Programming

This guide provides ready-to-use library program plans featuring GLOBE Program activities and data collection opportunities that align with the 2025 Collaborative Summer Library Program theme "Color Our World."

The GLOBE Program

The GLOBE Program is an international science and education program sponsored by NASA and supported by National Oceanic and Atmospheric Administration (NOAA), the National Science Foundation (NSF), and the U.S. Department of State. The program gives K–16 students and the public a way to meaningfully contribute to an understanding of the Earth system through place-based, authentic research.

Download the GLOBE Observer App

GLOBE's citizen science app, GLOBE Observer, allows volunteers to make environmental observations that complement NASA satellite observations. The app guides you through the observation process for tree height, clouds, mosquito habitats, and land cover data collection. Create a free account to get started!

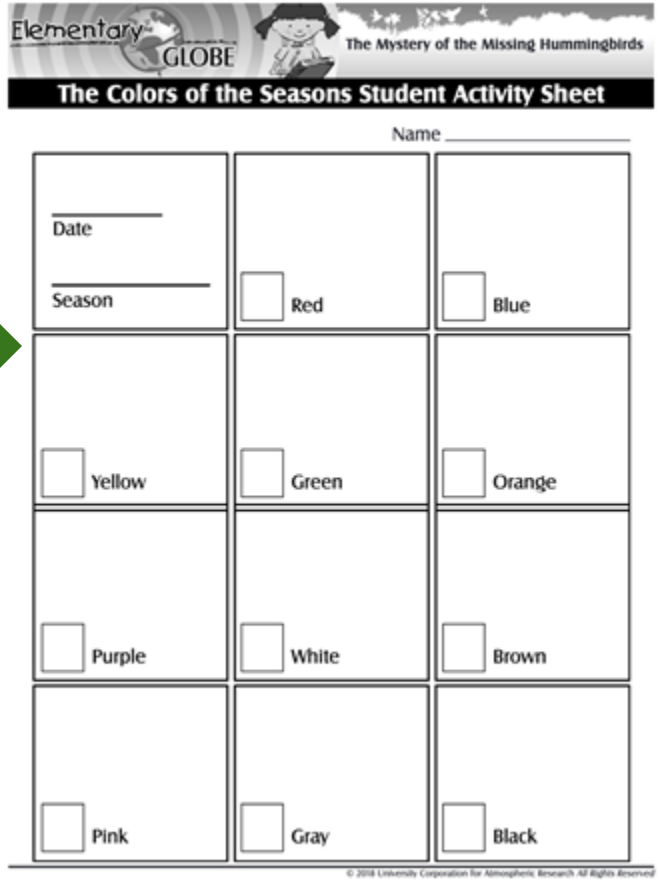
Acknowledgements

This resource was developed by the U.S. GLOBE Coordination Office at the University of New Hampshire Leitzel Center with comments and feedback from the U.S. GLOBE Partnership community and in collaboration with Theresa Schwerin, Institute for Global Environmental Strategies and GLOBE Observer team.

Children's Programming Example

Children's Storytime: Seasons and Colors

1. Read *Summer Colors* by Diana Morgan (2018).
2. Go on a color walk to record the colors that can be seen in the summer.
3. Read *Green on Green* by Dianne White (2020).
4. Everyone votes for their favorite season.
5. Art activity: NOAA paint-by-number maps of plant growth in different seasons.
6. Movement break with The Seasons Song by Super Simple Songs.



Teen Programming Example

Trees and Kindness Rocks (from LaSalle Public Library)

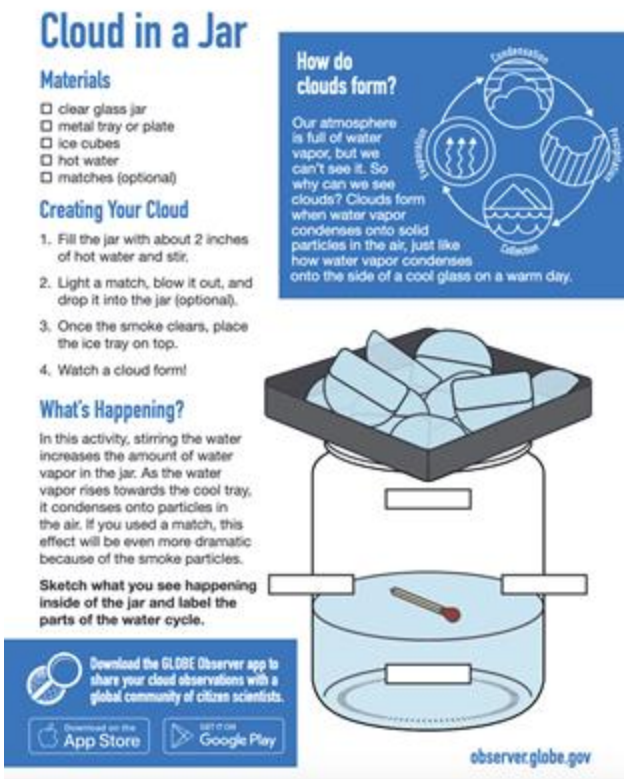
1. Go outside to use the GLOBE Observer app to measure tree height.
2. Make a “kindness rock” with paint or markers, showing your tree and its measurements.
3. Leave your rock at the base of the tree you measured to inspire others (see activity for other ideas!).
4. Read *Rise to the Sky: How the World's Tallest Trees Grow Up* by Rebecca E. Hirsch (2023).

Read about Kindness Rocks and trees at https://www.starnetlibraries.org/gratitude-kindness-rocks-where-science-and-art-meet/

Intergenerational Programming Example

Clouds Family Program (from Los Angeles Public Library)

1. Do the Cloud in a Jar activity.
2. Go outside to use the GLOBE Observer app to make cloud observations.
3. Go back inside to make Cloud Mobiles.



Cloud in a Jar

Materials

- ☐ clear glass jar
- ☐ metal tray or plate
- ☐ ice cubes
- ☐ hot water
- ☐ matches (optional)

Creating Your Cloud

1. Fill the jar with about 2 inches of hot water and stir.
2. Light a match, blow it out, and drop it into the jar (optional).
3. Once the smoke clears, place the ice tray on top.
4. Watch a cloud form!

What's Happening?

In this activity, stirring the water increases the amount of water vapor in the jar. As the water vapor rises towards the cool tray, it condenses onto particles in the air. If you used a match, this effect will be even more dramatic because of the smoke particles.

Sketch what you see happening inside of the jar and label the parts of the water cycle.

Download the GLOBE Observer app to share your cloud observations with a global community of citizen scientists.

App Store | Google Play

How do clouds form?

Our atmosphere is full of water vapor, but we can't see it. So why can we see clouds? Clouds form when water vapor condenses onto solid particles in the air, just like how water vapor condenses onto the side of a cool glass on a warm day.

observer.globe.gov

Cloud Mobile

Start

Finish

Games to Support Summer Programs

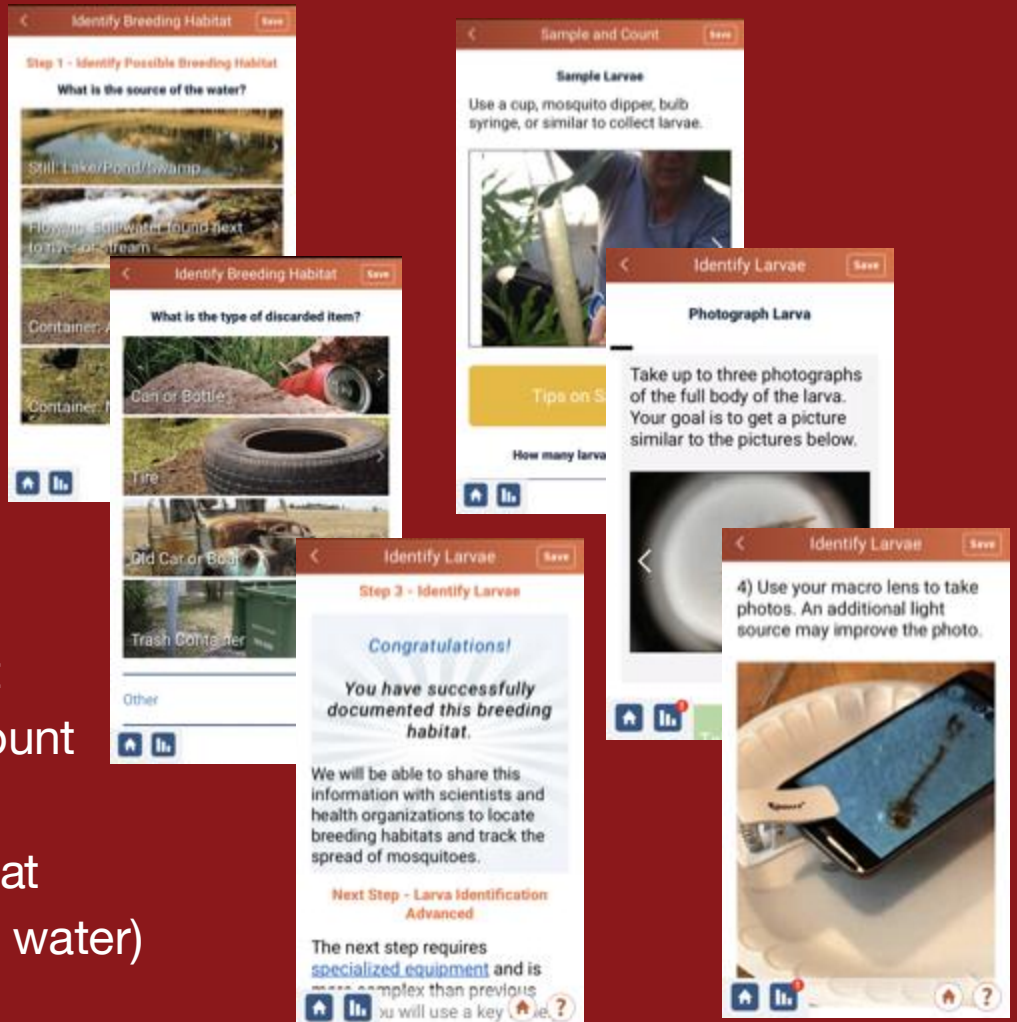
See **GLOBE Observer Library Guide** sample programs and ideas to combine resources for passive and active library programs (games, videos, hands-on activities, and more).

https://observer.globe.gov/libraries

Mosquito Habitat Mapper: Habitats and Hideouts Game

Steps to observe:

- Identify habitat
- Sample and count
- Identify larvae
- Eliminate habitat (clear standing water)



Habitats and Hideouts Game

Learn about the different places where water collects and mosquito moms can lay their eggs.

Can be played 3 ways:

- Bingo
- Name that habitat
- Sketch that habitat

Download PDFs of activity guide, playing boards (30), and call sheet/slides

https://strategies.org/products/mosquito-habitats-and-hideouts

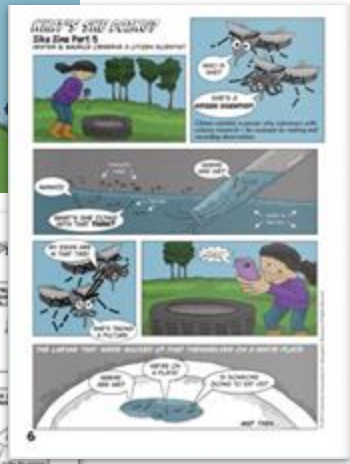
Variations on Habitats and Hideouts

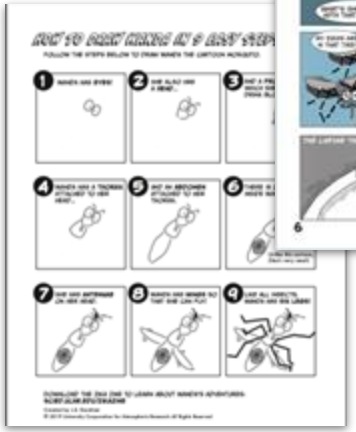
Scavenger Hunt:
Los Angeles Public Library included a scavenger hunt with photos posted around the library.

Mosquito Habitats and Hideouts Walk
Use the call sheet from bingo to search for potential habitats.

Couple with Zika Zine Comic
Download the coloring pages, How to Draw Wanda in 9 Easy Steps and Make Your Own Zika Zine Comic and create your own mosquito pictures and stories. https://scied.ucar.edu/zikazine

Above: Photo courtesy Los Angeles Public Library





Discussion

Answer in the chat: How might your library implement these activities in your summer programming?

Thank you!

Any Questions?