


Celebrate 60 Years of Earth Observations with NASA!

The webinar will begin at 1:00 p.m. (MT) and will be recorded.

While you're waiting:

- 1) Introduce yourself in the chat box and answer our poll question
- 2) Test your audio by clicking on "Meeting" and then "Audio Setup Wizard". You will not need a mic for this webinar.

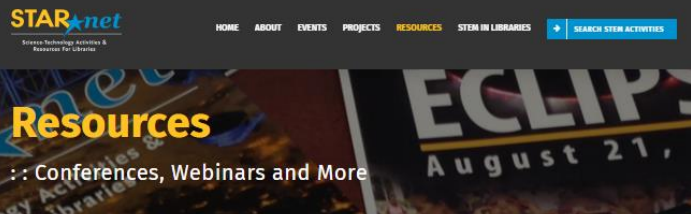


Audio problems? Click and highlight the  button at the top of your screen. You can also click "Meeting" > "Audio Setup Wizard". You will not need microphone capabilities.

Agenda for Today

- Introduction and Reminders
- 2018 Earth Day Page and Special Announcement
- Hands-on STEM: UV Kid
- Celebrating Earth Day with NASA! (with Marile Colon Robles and Jessica Taylor)
- Other Earth Science Activities
- Q&A

Join STAR Net!



Curated Resources For Professional Development

Building the capacity of public libraries and library staff to deliver engaging, inspirational, and educational STEM programs has the potential to transform the STEM education landscape across the country. What started in libraries some years ago as independent experiments in STEM programming has become a national STEM movement.

Across the country, libraries are redefining their roles. They're becoming primary centers of informal learning, especially STEM learning. And this critical transition is being carried out by many dedicated librarians. To help them, the STAR Library Education Network (STAR_Net) is providing resources to support their efforts to develop new skills and provide quality STEM programming.

Collaboration is the key to transforming libraries into STEM learning centers



Conferences



Webinars



Newsletters



Online Forums



STAR_Net Blog



2017 Solar Eclipse



Exhibition Posters



Books, Videos &
More!



Guides, Facts &
Tips

Recent Blogs

> Watercraft Design

> The Dirt on Soil

> Do You Have Your Solar Eclipse
Glasses? Great - Now Try Them Out!

Upcoming Events

Discover NASA Exhibition
(AZ)
May 3 - July 28

Summer Learning - Build a
Better World
May 15 - August 31

Discover Tech Exhibition
(CO)
May 31 - August 25

[View All Events](#)

Professional development
resources, including webinars,
newsletters, blogs, forums, videos,
and much more!

FREE Resources

- Reports and Tools for Library Leaders
- STEM Activity Clearinghouse
- Professional Learning Opportunities
- Blogs
- *STAR Net News*

Reminders

STEM In Libraries

:: Resources for Library Leadership

Partnership Opportunities

Learn about possible STEM partnership opportunities which are available through the resources below. For additional connections to STEM learning opportunities that inspire young people to explore, discover, and create, visit [The Connectory](#).



NASA



SPACE SCIENCE



AFTERSCHOOL



ENGINEERING

- www.starnetlibraries.org/stem-in-libraries/collaboration/partnership-opportunities/

Reminders



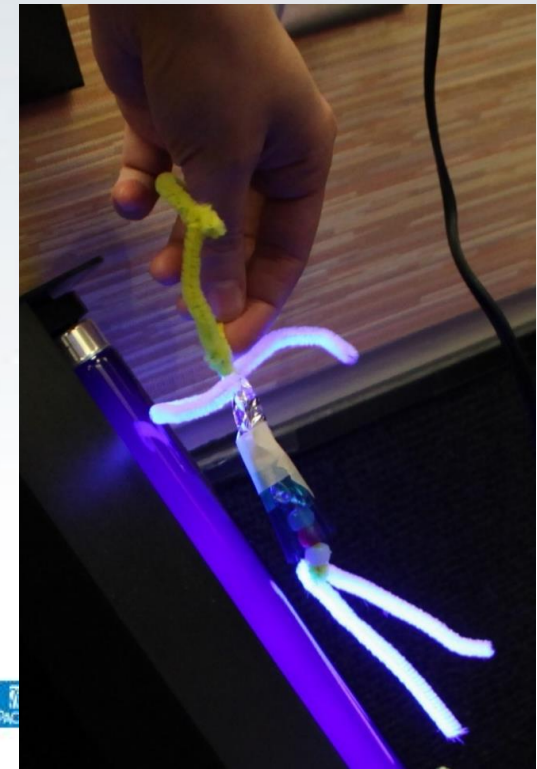
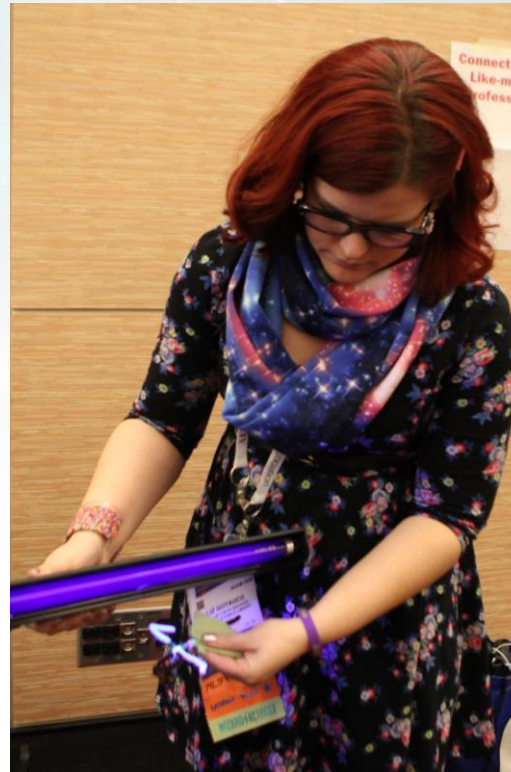
Off to Mars! Programming Ideas for the InSight Launch

Tuesday, April 3rd, 2018 at 3:00 p.m. (EST), 2:00 p.m.
(CST), 1:00 p.m. (MST), 12:00 p.m. (PST)

[Register Here](#)

UV Kid

Credit: American Library
Association



Today's Speakers



**Marilé Colón
Robles**
NASA GLOBE
Clouds lead

I am an education specialist and lead for NASA GLOBE Clouds. I love working with educators on different ways to engage all learners in real-world STEM activities. I was honored to be the recipient of the 2017 Women of Color STEM Award for Educational Leadership – Corporate Promotion of Education. I was also privileged to be a panelist for NASA's 2017 Hispanic Heritage Month celebration titled '¡Latinos STEM Up'! Before I started at NASA Langley in 2010, I was researching interactions between clouds and aerosols as I earned my graduate degree in Atmospheric Sciences from the University of Illinois at Urbana-Champaign. I was born and raised in Río Piedras, Puerto Rico. I am wife and mother of two beautiful girls, an accomplished musician, and an avid volleyball player.



Jessica Taylor
NASA LaRC
Science
Education
Team Lead

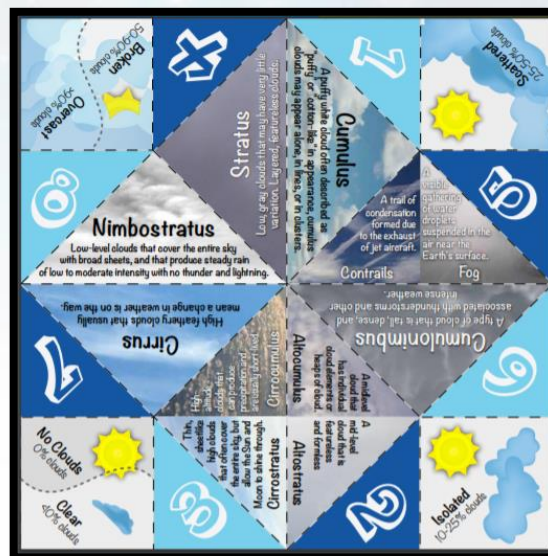
I grew up nearby Tampa, Florida – the lightning capitol of the world! I loved watching storms from the back porch, and would calculate the distance of thunderstorms by counting the number of seconds between the flash and the thunder. I went on to study Meteorology at Florida State University and that's where I began collecting data with The GLOBE Program. It's awesome to be working for NASA and to share my love for doing science with GLOBE.

GLOBE Observer: Clouds

Hands-on Activities:

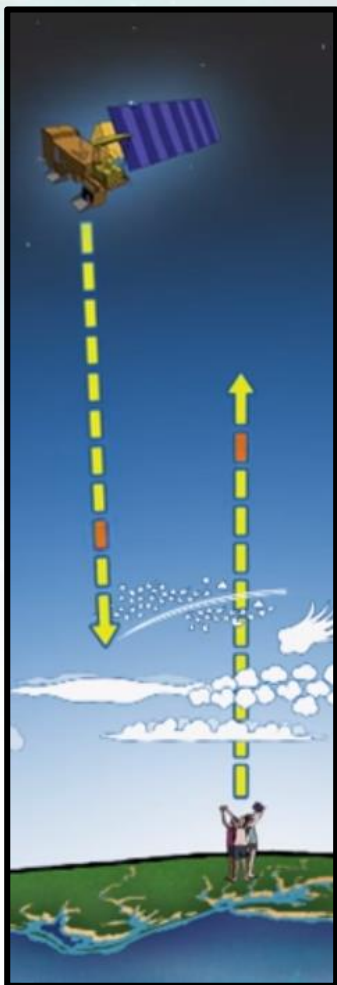


1. Estimating Cloud Cover(above)
2. Cloud Teller (right-hand side)



NASA GLOBE Clouds with satellite match

Cloud observations submitted through GLOBE Observer Clouds are matched with satellites overhead of the observer taking measurements at about the same time!



GLOBE Observer App



Objective: Submitting cloud observations to NASA!

Audience:

- Families with school-aged children
- Tweens and Teens
- Adults

Materials: smart phone or tablet; access to outside

GLOBE Observer App

PLEASE NOTE:

1. Not all patrons will have a phone, or want to download the app.
2. The library can engage with different audiences, including school-aged children, if it has devices with the app on it to showcase the app and make observations.



Other Resources: Cloud Observations

Data Sheet:

Atmosphere Investigation: Cloud Protocol Data Sheet SEE GLOBE CLOUD CHART FOR VISUAL REFERENCE 1

School/Observer Name: _____ Study Site: _____

Date (ex. 2017 01 13): Year: ____ Month: ____ Day: ____

Time (ex. 24 Hour Clock: 14 26): Local: Hour ____ Minute ____ Universal: Hour ____ Minute ____

1. What is in Your Sky?

Total Cloud/Contrail Cover:

☐ Sky is Obscured

☐ None (Go to box 2) ☐ Scattered (25-50%) ☐ Fog ☐ Sand ☐ Haze

☐ Few (<10%) ☐ Broken (50-90%) ☐ Heavy Rain ☐ Spray ☐ Heavy Snow ☐ Smoke ☐ Volcanic Ash

☐ Isolated (10-25%) ☐ Overcast (90-100%) ☐ Blowing Snow ☐ Dust ☐ Go to box 6

*If you can observe sky color or visibility, complete box 2

2. Sky Color and Visibility

Color (Look Up): ☐ Cannot Observe ☐ Deep Blue ☐ Blue ☐ Light Blue ☐ Pale Blue ☐ Milky

Visibility (Look Across): ☐ Cannot Observe ☐ Unusually Clear ☐ Clear ☐ Somewhat Hazy ☐ Very Hazy ☐ Extremely Hazy

3. High Level Clouds

☐ No High Level Clouds Observed (Go to box 4)

Cloud Type: ☐ Contrails (number of): ## ☐ Cirrus ☐ Cirrocumulus ☐ Cirrostratus

Cloud Cover: ☐ Few (<10%) ☐ Isolated (10%-25%) ☐ Scattered (25%-50%) ☐ Broken (50%-90%) ☐ Overcast (>90%)

Visual Opacity: ☐ Opaque ☐ Translucent ☐ Transparent

4. Mid Level Clouds

☐ No Mid Level Clouds Observed (Go to box 5)

Cloud Type: ☐ Altostratus ☐ Altimcumulus

Cloud Cover: ☐ Few (<10%) ☐ Isolated (10%-25%) ☐ Scattered (25%-50%) ☐ Broken (50%-90%) ☐ Overcast (>90%)

Visual Opacity: ☐ Opaque ☐ Translucent ☐ Transparent

5. Low Level Clouds

☐ No Low Level Clouds Observed (Go to box 6)

Cloud Type: ☐ Fog ☐ Stratus ☐ Nimbostratus ☐ Cumulus ☐ Cumulonimbus ☐ Stratocumulus

Cloud Cover: ☐ Few (<10%) ☐ Isolated (10%-25%) ☐ Scattered (25%-50%) ☐ Broken (50%-90%) ☐ Overcast (>90%)

Visual Opacity: ☐ Opaque ☐ Translucent ☐ Transparent

6. Surface Conditions

Mandatory:

Snow/Ice: Yes ☐ No ☐ Dry Ground: Yes ☐ No ☐

Standing Water: Yes ☐ No ☐ Leaves on Trees: Yes ☐ No ☐

Muddy: Yes ☐ No ☐ Raining/Snowing: Yes ☐ No ☐

Optional:

You may submit any or all

Temperature: ____ °C

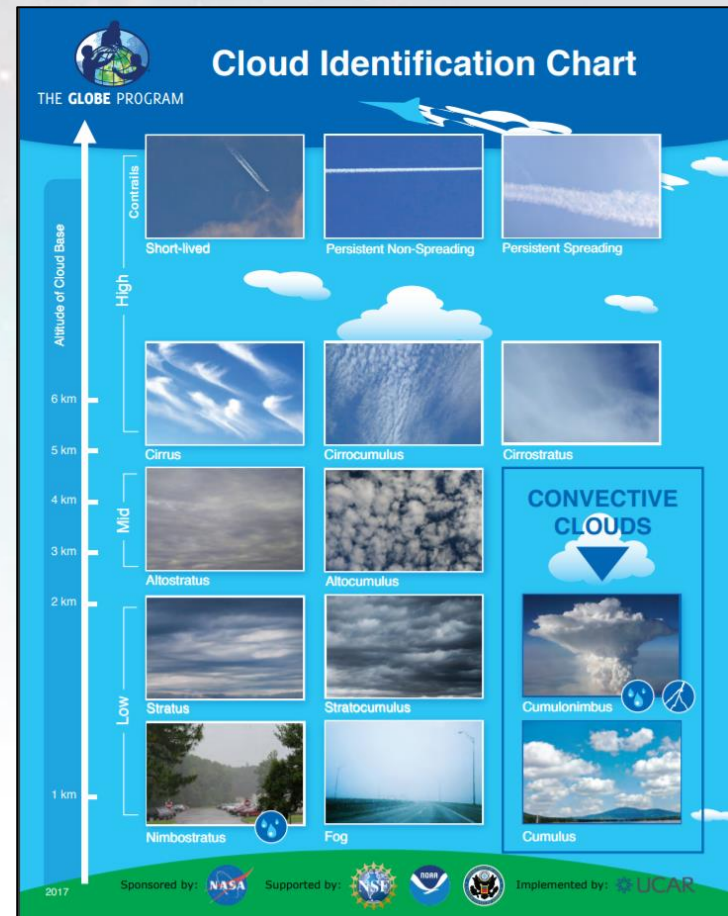
Barometric Pressure: ____ mb

Relative Humidity: ____ %

Comments: _____

GLOBE 2017 ATMOSPHERE

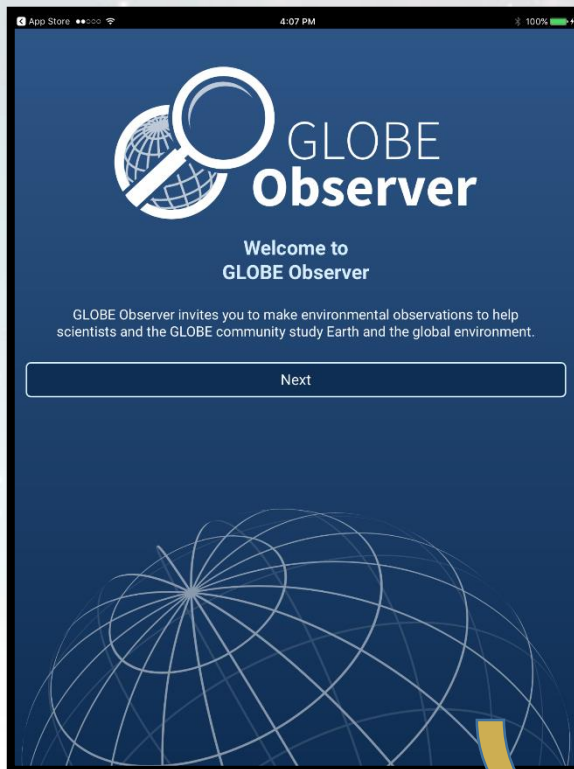
Cloud Charts (available in different languages)



How to Download the App



Icon of the app



Join the Team: Referral Code

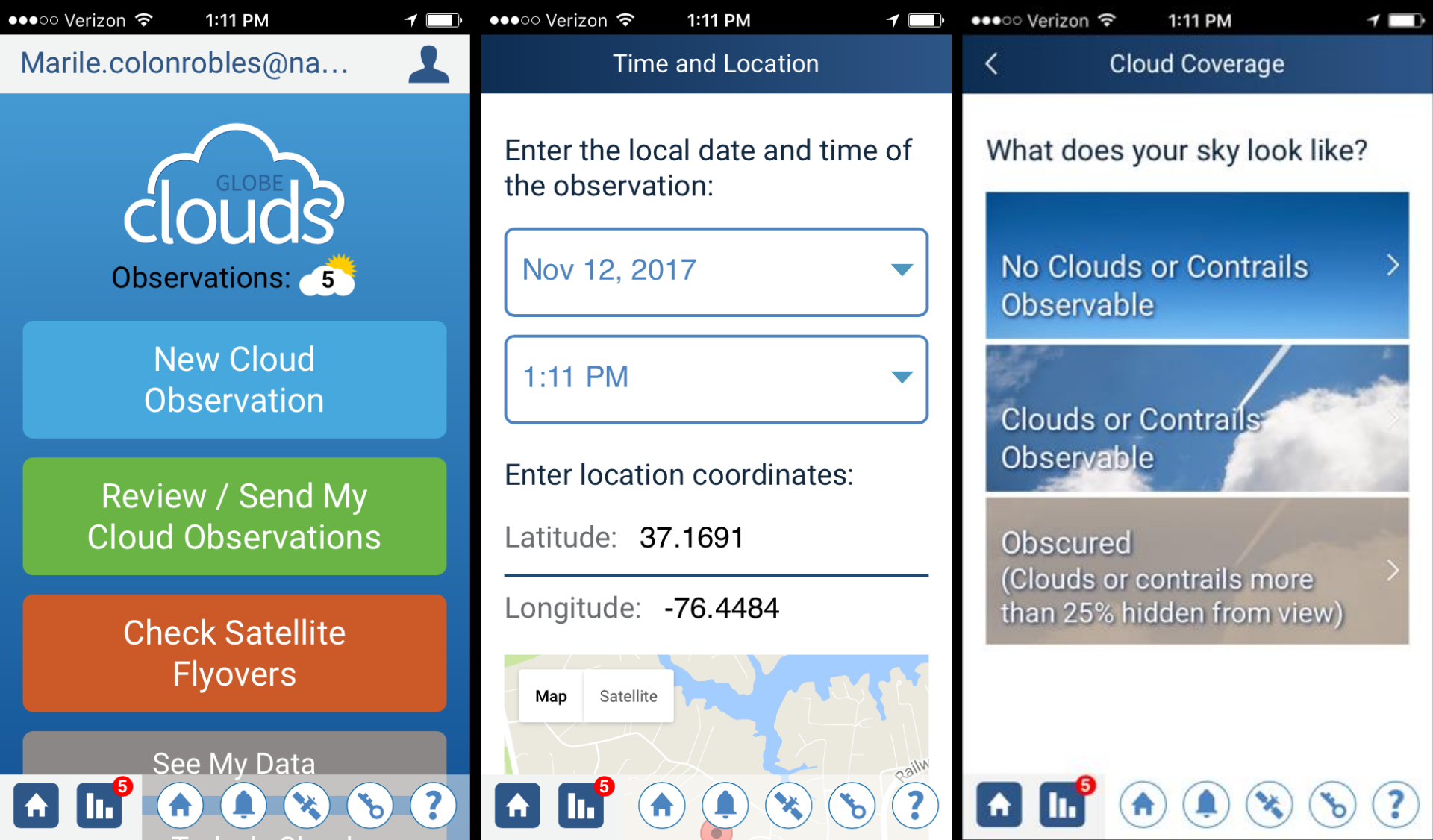
The screenshot shows the 'Login' screen of the GLOBE Observer App. At the top, it says 'Welcome to the GLOBE Observer App. Please register this device with your GLOBE account, or create a new account below.' There is a link for 'Forgot your password?'. Below that, the 'Existing GLOBE Users and Citizen Scientists' section has fields for 'Email:' and 'Password:', followed by a yellow 'Login' button. The 'New GLOBE Citizen Scientists' section is highlighted with a red border and includes a '*Email:' field, a 'Select Country' dropdown menu, a 'Referral Code: (optional)' field, and a yellow 'Create Account' button. At the bottom, a note states: '* An email will be sent to this address with a password to be used on the next screen.' and a link to the 'NASA Privacy Policy'.

What is a Referral Code?

- A way to join the team
- Anyone can use the code
- The code does not expire

Referral Code: library

NOTE: The app and use are completely free. The referral code helps us identify which users learned about the app at a library event! ***An email is sent rapidly with a password.***



If no clouds or can't see sky, then:

Verizon 1:11 PM

< Overall Sky Conditions

What color is the sky?

Deep Blue ☐

Blue ☐

Light Blue ☐

Pale Blue ☒

Home 5 Notifications Satellite Key ?

Verizon 1:11 PM

< Overall Sky Conditions

What is the sky visibility?

Unusually Clear ☐

Clear ☐

Somewhat Hazy ☐

Very Hazy ☒

Home 5 Notifications Satellite Key ?

Verizon 1:13 PM

< Types of Obscurations

Click on the types of obscurations:

Blowing Snow ☐

Heavy Snow ☐

Heavy Rain ☐

Home 5 Notifications Satellite Key ?

If there are clouds, then:

Overall Sky Conditions

What percentage of the whole sky is covered by clouds? *

Few
< 0 - 10 ☐

Isolated
10 - 25 ☐

Scattered
25 - 50 ☐

Broken ☐

High Level Clouds

Which high level clouds/contrails are present?

No high level clouds/contrails observed >

High in the Sky

Cirrus ☐

Cirrocumulus ☐

Mid Level Clouds

Which mid level clouds are present?

No mid level clouds observed >

Middle of the Sky

Altostratus ☐

Altostratus ☐

What percentage of the mid is covered by clouds?

Low Level Clouds

Which low level clouds are present?

No low level clouds observed >

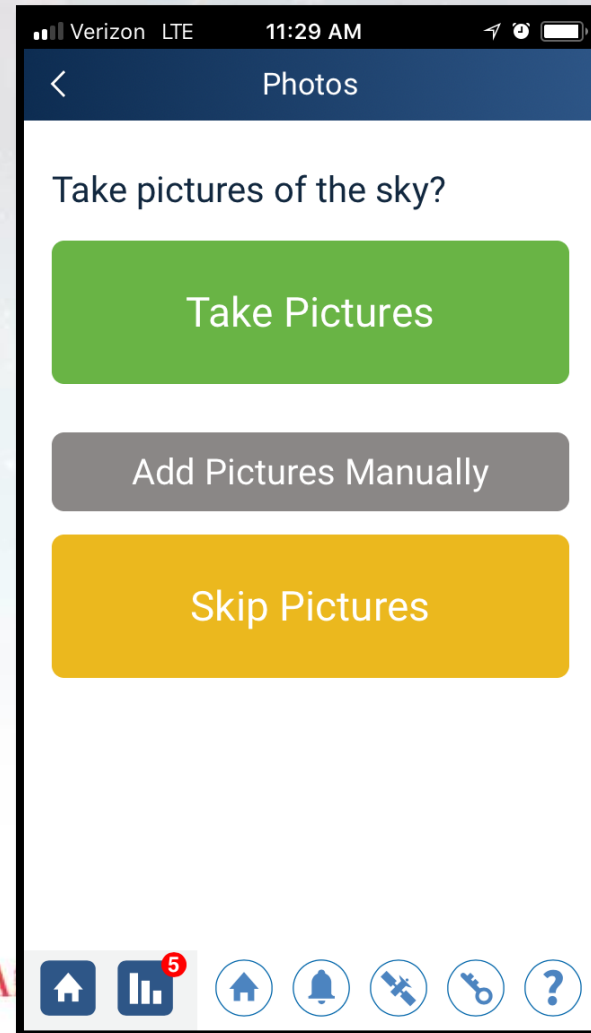
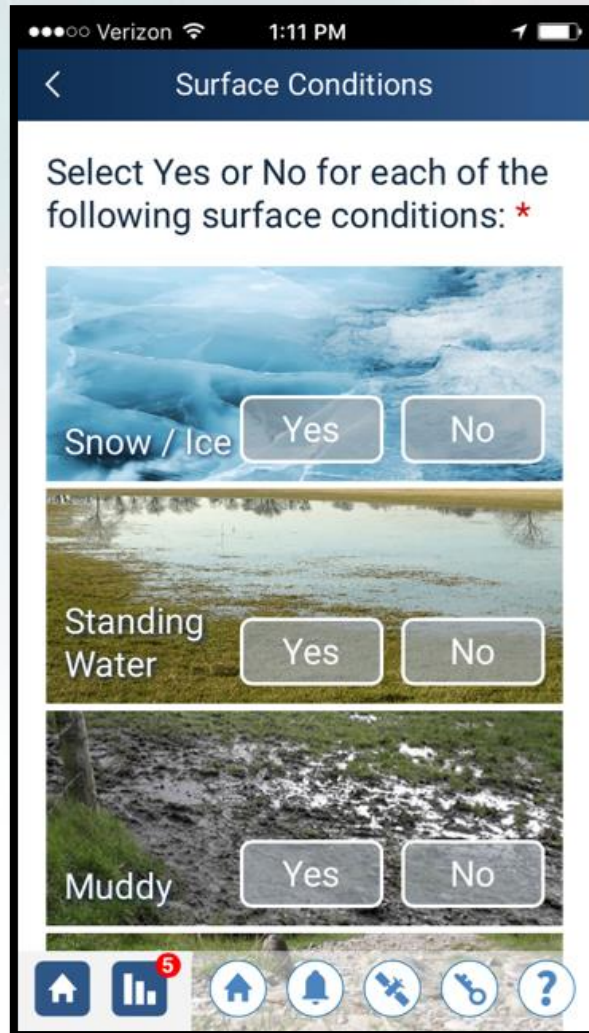
Low in the Sky

Fog / Stratus ☐

Stratocumulus ☐

NOTE: Each step is a YES/NO, with visual examples to help the patron identify the cloud.

Information about your surroundings



Optional: Submit your pictures

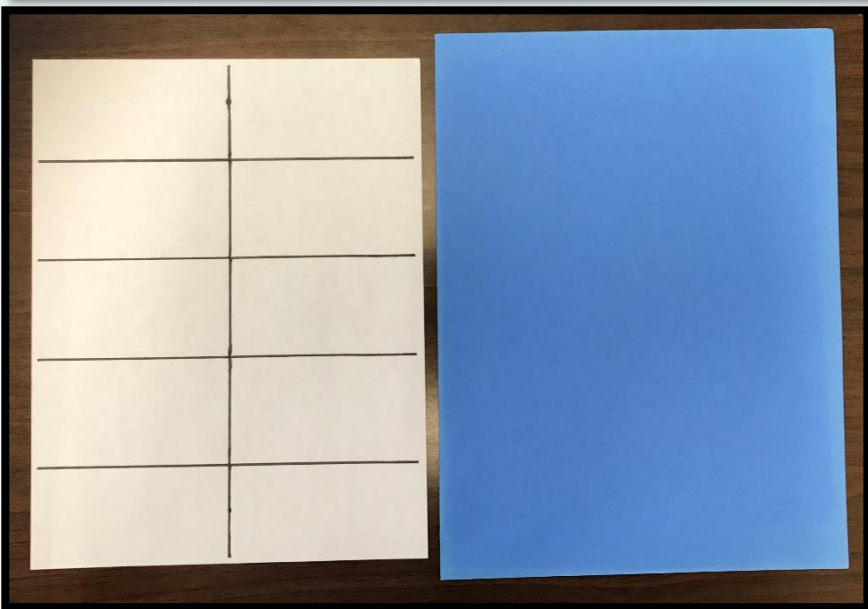
Guide to taking pictures:

- Be sure to be outside!
 - Move the phone/tablet until the letter is in the circle.
- The app will automatically take the picture for you.
- North-South
 - East-West
 - Up-Down



*Image uploaded via GLOBE Observer of clouds
observed in Redmond, Washington.*

Estimating Cloud Cover Activity



Objective: Visual practice of cloud cover percentages.

Audience:

- Families
- School-aged children
- Tweens

Materials: blue paper, white paper, scissors*, glue

*** Optional; students can also rip paper.**

Estimating Cloud Cover Activity

Visual Practice to Identify Cloud Cover:

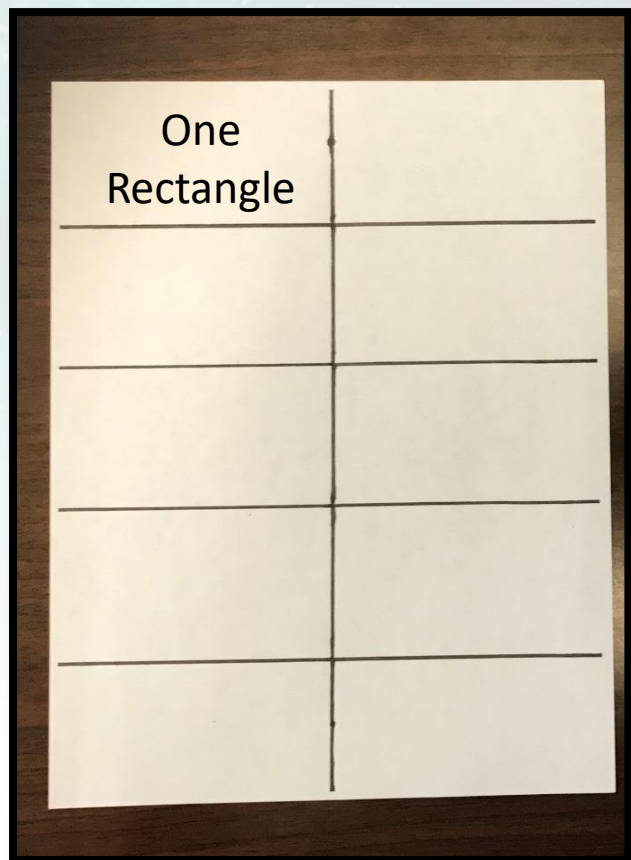
Patrons cut out white paper to make clouds. They can make their own cloud scene that represents a given percentage of cloud cover and have others guess the percentage for their cloud scene.



Cloud Estimation Activity

Tip measure percentages:

Divide a piece of paper into 10 equal rectangles. If you use just one rectangle for your cloud scene, you would have 10% cloud cover.



Patrons can cut or rip paper.

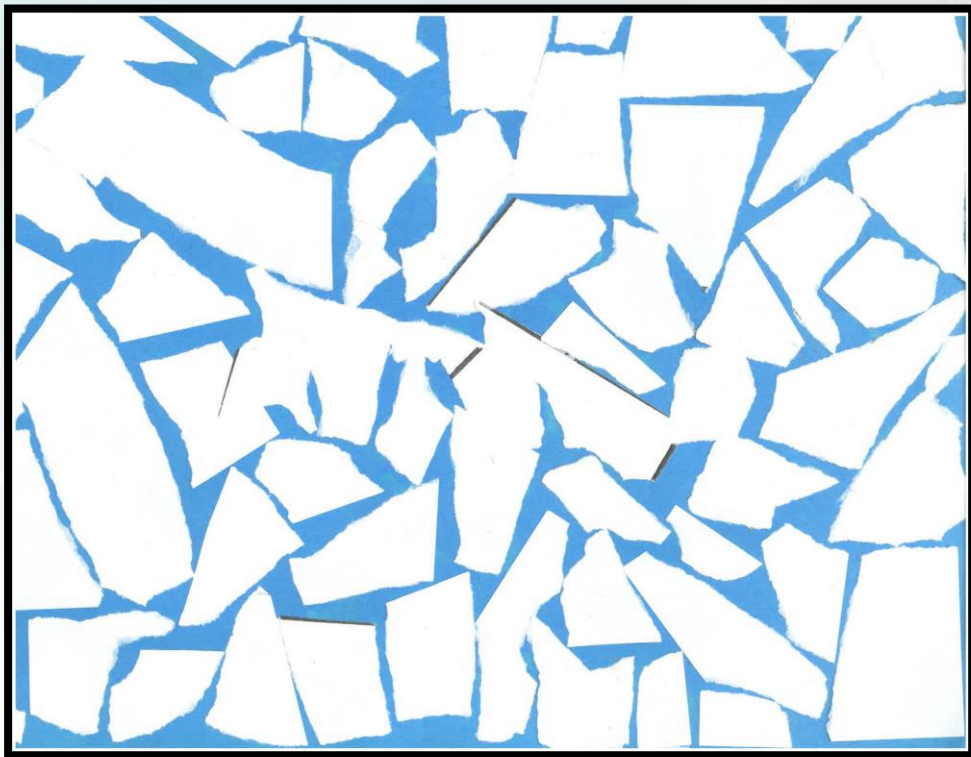
Examples:

One Rectangle → 10% Cloud Cover

Five Rectangles → 50% Cloud Cover

Eight Rectangles → 80% Cloud Cover

What is the cloud cover percentage?



**Which best represents
the cloud scene?:**

Few (less than 10%)

Isolated (10-25%)

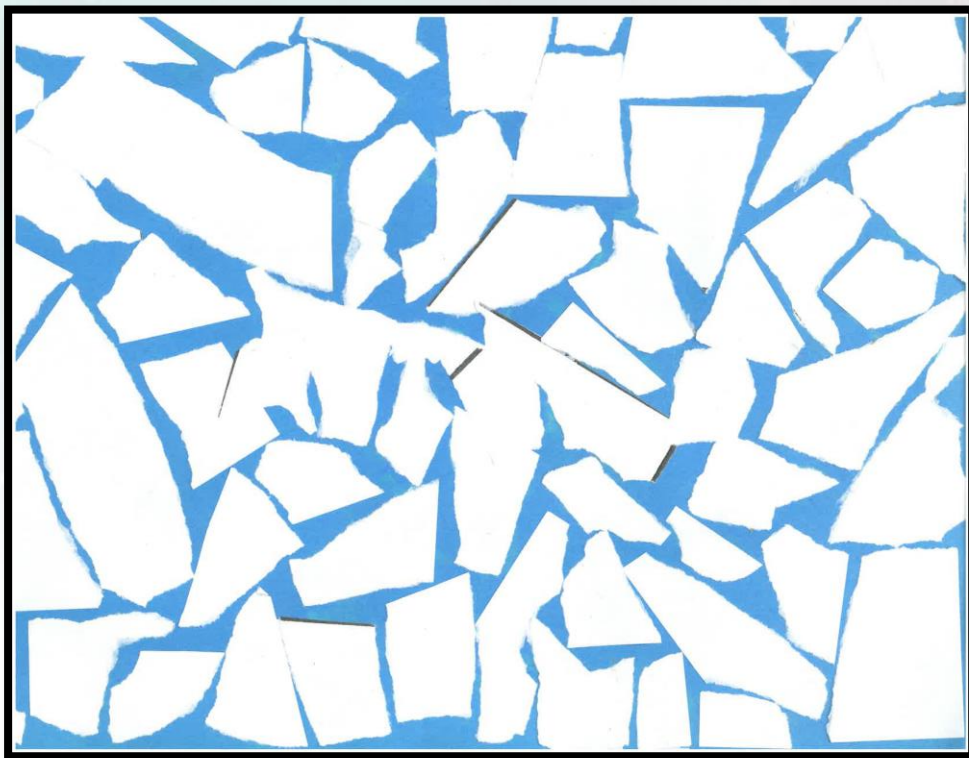
Scattered (25-50%)

Broken (50-90%)

Overcast (more than 90%)

What is the cloud cover percentage?

90%



Which best represents
the cloud scene?:

Few (less than 10%)

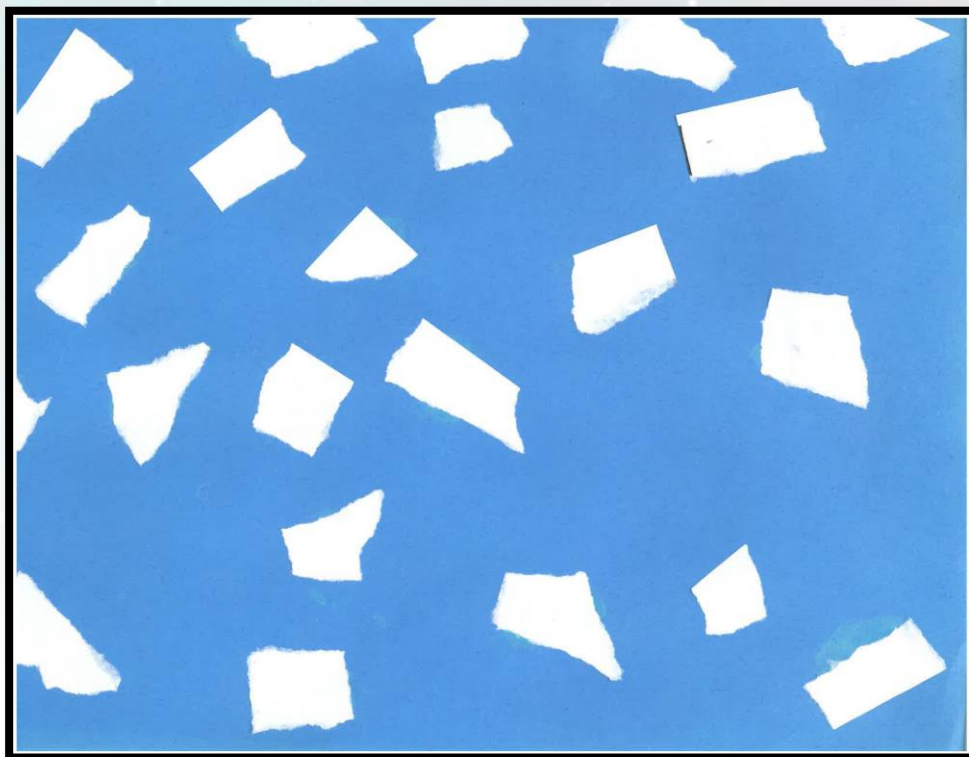
Isolated (10-25%)

Scattered (25-50%)

Broken (50-90%)

Overcast (more than 90%)

What is the cloud cover percentage?



**Which best represents
the cloud scene?:**

Few (less than 10%)

Isolated (10-25%)

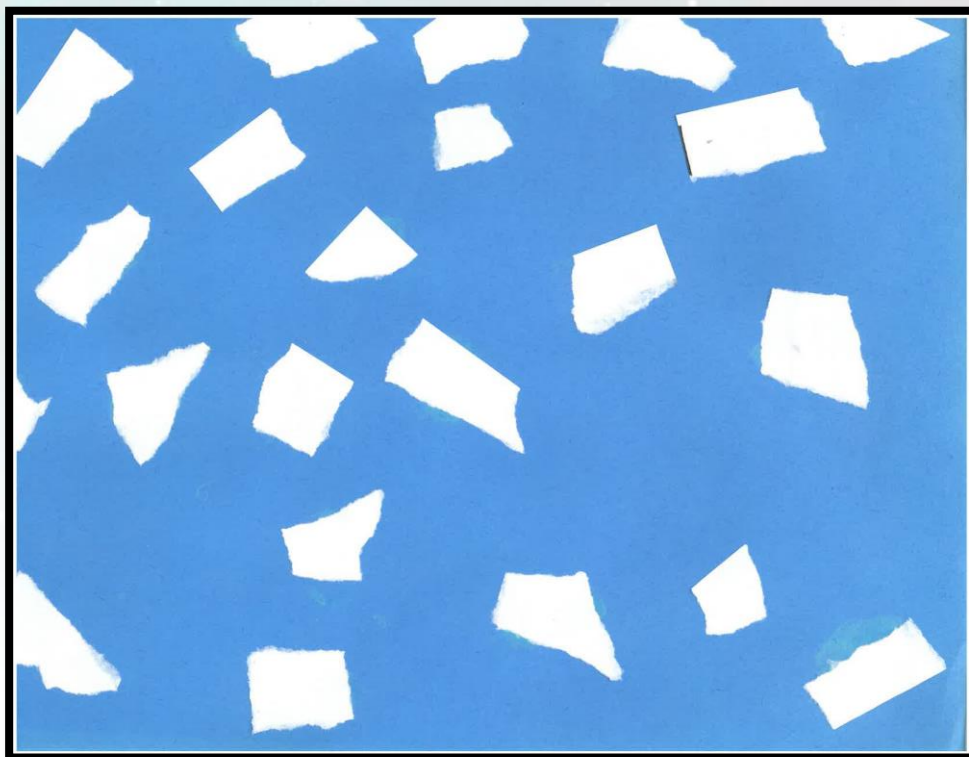
Scattered (25-50%)

Broken (50-90%)

Overcast (more than 90%)

What is the cloud cover percentage?

20%



Which best represents
the cloud scene?:

Few (less than 10%)

Isolated (10-25%)

Scattered (25-50%)

Broken (50-90%)

Overcast (more than 90%)

Cloud Teller

Objective: Fold a teller and learn about clouds

Audience:

- School-aged children
- Tweens
- Families

Materials: teller, scissors

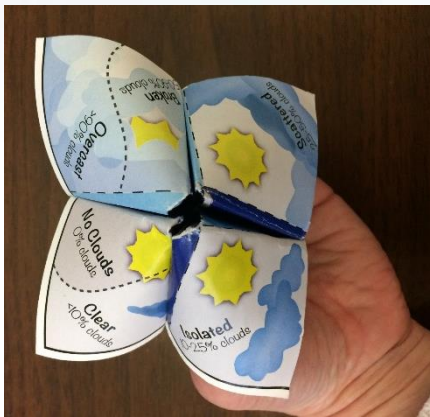
Use your Cloud Teller to practice vocabulary, learn different cloud types, and help with NASA GLOBE cloud observations.

Clouds are an important part of our atmosphere, and scientists are studying how they affect our weather and climate. Clouds affect our overall temperature or energy balance of the Earth and play a large role in controlling the planet's long-term climate. Satellite instruments as well as your ground observation provide one more piece of the puzzle.

Visit the links below for more cloud observation resources:

- Cloud Resources: <https://www.globe.gov/web/s-cool/home/resources>
- Register to be a GLOBE Participant: <https://www.globe.gov/join>
- Report your Observations Online through www.globe.gov or through the GLOBE Observer app: <https://observer.globe.gov>

To build the Cloud Teller, see instructions on the back of this page.



Make a UV Detector

[Home](#) > [Activities](#) > [Earth Science](#) > [Make a UV Detector](#)

[Back to Search results for "detect" \(2 other results\)](#)



[View larger](#)

Make a UV Detector

Use tonic water to make an ultraviolet light detector!

[Open Activity](#)

[How-to Video](#)

[Family Guide](#)



[Write a review](#)

[Tweet](#)

[Share](#)

[Google+](#)

[Pinterest](#)

[Send to a friend](#)

[Print](#)

Content Area

Earth Science
Astronomy and Space
Physics

Age Group

Early Elementary
Upper Elementary
Twins (9-12)
Teens

Time to Complete Activity

Under 10 minutes

Time needed to prep Activity

Under 5 minutes

Cost associated with Activity Materials

\$1-\$5

Difficulty Level (by content)

Medium

Mess Level

Low

[Report a broken link](#)

[Categorized Incorrectly? Let us know!](#)

Protect

1. “Normal” UV bead
2. Protective material #1
3. Protective material #2



Test!

UV flashlight

OR

Sunlight



Results



Daylight in a Bottle

Activities > Physics > Daylight in a Bottle

[Back to Search results for "light" \(16 other results\)](#)



Daylight in a Bottle

Students will experiment with radiant energy and the concept of refraction to develop a lighting system made out of recycled materials.

[Open Activity](#)

[Family Guide](#)

[Write a review](#)

[Tweet](#)

[Share](#)

[Google+](#)

[Pinterest](#)

[Send to a friend](#)

[Print](#)

Content Area

Physics

Age Group

Family

Early Elementary

Upper Elementary

Time to Complete Activity

40 minutes to 1 hour

Time needed to prep Activity

Under 5 minutes

Cost associated with Activity Materials

\$0 ("found" items)

Difficulty Level (by content)

Easy

Mess Level

Medium

[Report a broken link](#)

[Categorized Incorrectly? Let us know!](#)

And now... a SPECIAL ANNOUNCEMENT!!!

Questions?