



# What's new in ArcGIS Survey123?

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2021 ESRI  
DEVELOPER SUMMIT

## What's new in the February 2021 update (3.12)

- Lists
- Hiding questions
- Photos
- Multi-lingual surveys
- Custom JavaScript functions
- Other things you should be aware of
- Road Ahead

# Better lists

Lists help us capture structured data in an effective manner and are a fundamental aspect of good smart form design.

The February 2021 update to Survey123 (version 3.12) includes new options to help you:

- Work with larger lists (tens of thousands of records)
- More easily manage updates to lists
- Improve the display of your lists
- Eliminate bias from ordered lists
- Create ranking questions

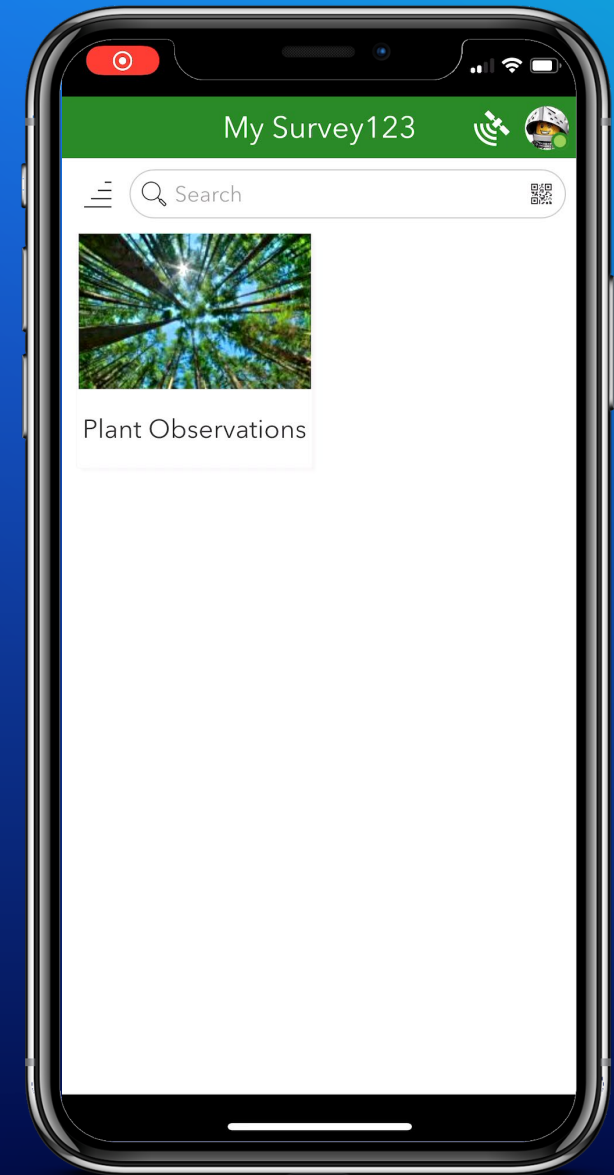


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USDA **PLANTS** database  
70,000 species  
Sub-second response



# Work with larger lists (select\_X\_from\_file)

type	name	label
select_one_from_file countries.csv	countries_one	Countries
select_multiple_from_file countries.csv	countries_mul	Countries

- *select\_x\_from\_file* populates a list from a CSV in the media folder
- Use for very long lists (hundreds, thousands, hundreds of thousands of choices). Its faster
- *The CSV file must include, at least, the name and label columns*
- *Name of the csv file: Case sensitive on iOS!*



# List load times in Survey123 Field App (iOS)

Records in list	select_one	select_one_from_file
5,00	0.8s	0.7s
1,000	0.8s	0.7s
10,000	3.2s	0.7s
50,000	> 1m	0.7s
100,000	> 2m	0.8

# Demonstration

The background features a vibrant blue-to-teal gradient. On the left side, there is a complex, abstract graphic design. It includes a stylized globe, various data patterns like hexagons and grids, and flowing, ribbon-like shapes in shades of red, yellow, and blue. The overall aesthetic is modern and technological.

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# Populate a list from a CSV item in ArcGIS

You can now populate a list from a CSV ArcGIS item. If you update your CSV item, the Survey123 field and web apps will pick up the changes automatically!

Step by step guide:

1. Add your select\_x\_from\_file question and its corresponding CSV file into the media folder
2. Author your survey normally and publish it
3. Once published, upload your CSV file from the media folder into ArcGIS as a CSV item
4. Share your CSV item accordingly
5. Link your survey to the CSV item



# CSV lists: in media folder and linked

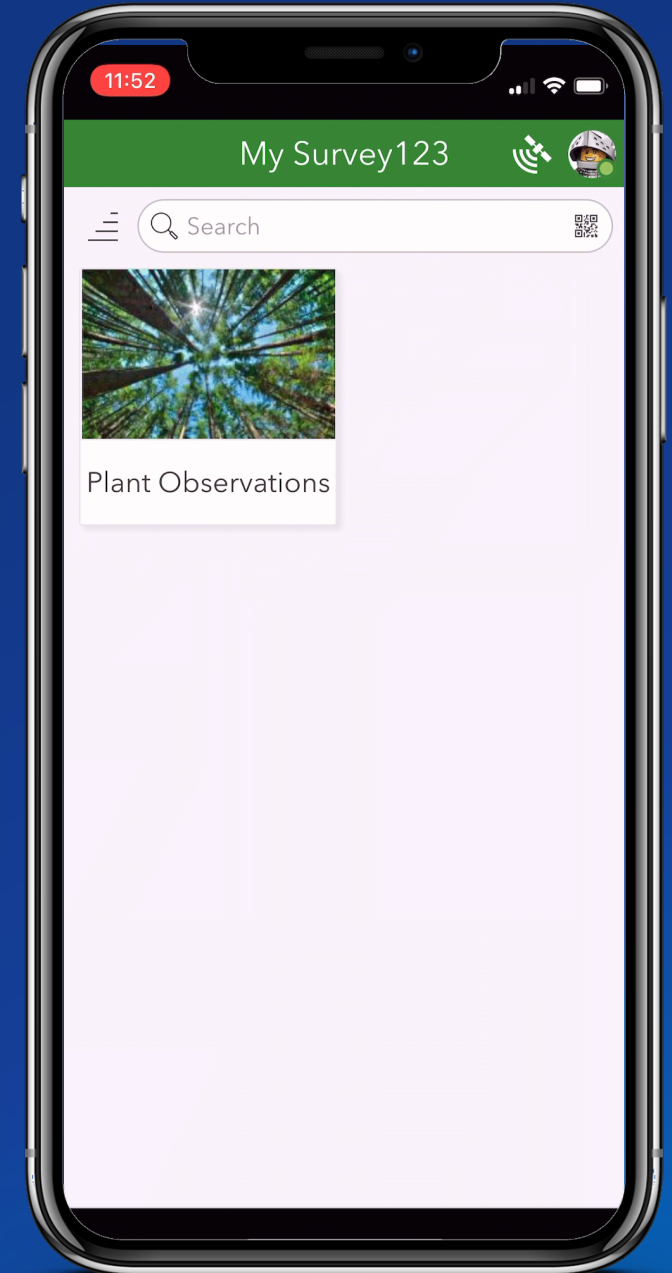
Demonstration

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# Compact-n appearance

type	name	label	appearance
select_one countries	country	Country	compact-2

- Arranges choices in columns, similarly to the horizontal appearance
- But you set the exact number of columns to use:
  - compact-4 : four columns
  - compact-3: three columns...



# Random choice order

type	name	label	parameters
select_one countries	country	Country	randomize=true
select_multiple cities	City	City	randomize=true

- Use *randomize=true* in *parameters* column to randomize the list order
- Useful to prevent the order of choices to bias responses
- You can apply it to any list question



# Rank

type	name	label	parameters
rank fruits	fav_fruits	Favorite fruits	randomize=true

- Lets user sort items in a list in order of preference
- *randomize=true* is fair game

**Favorite workshop topics**  
Move the topics that interest you the most to the top.

- 1 XLSForms for beginners
- 2 Workflow automation
- 3 Security considerations for surveys
- 4 Survey123 reports
- 5 Survey design best practices

Reset

The background features a vibrant, abstract graphic design. It consists of various overlapping shapes and patterns in shades of blue, red, and yellow. On the left side, there are stylized, colorful elements that resemble a globe or a map, with some areas showing a grid pattern. The overall aesthetic is modern and digital, with a focus on geometric forms and a rich color palette.

# Hiding questions

New *hidden* appearance and *esri::body:visible*



# Hidden and calculate question types

type	name	label	calculation	bind::esri:fieldType
geotrace	segment	Inspected segment		
hidden	cost	Cost at \$30.5 per meter	distance(\${segment}) * 30.5	esriFieldTypeDouble

- *Hidden* and *calculate* questions are not shown to the end user
- They are both mapped to *text* fields unless the *bind::esri:fieldType* is used
- Nothing new so far. We have had hidden and calculate questions for a while

# Hidden appearance

type	name	label	appearance	calculation
geotrace	segment	Inspected segment		
decimal	cost	Cost at \$30.5 per meter	hidden	distance(\${segment}) * 30.5

- This is new!
- Hides a question allowing you to preserve its type

# Hidden appearance

type	name	label	appearance
geopoint	location	Location	hidden

- This is new!
- Hides a question allowing you to preserve its type



# body::esri:visible

type	name	label	body::esri:visible
geopoint	location	Location	string-length(\${address})=0

- Dynamically hides a question, group, page or repeat
- Behaves like the relevant column, but never overrides user-input
- Supported in the field app only



# Working with attachments

File question type, multiline appearance and image capture methods



# File question type

type	name	label	appearance
file	document	PDF document	

- Use it to let users upload documents (ZIP, PDF, TXT...)
- Supported in the web app for a while
- Now also supported in the field app (mobile devices and desktop)



# One question, multiple files

type	name	label	appearance
image	photo	Photos	multiline
file	Document	Documents	multiline

- Multiple files with a single image question? use the *multiline* appearance
- Applies to image and file questions



# Should I stop doing this?

type	name	label	calculation
begin repeat	Photos	Photos	
image	photo	Photo	
end repeat			

- Yes. Do not add a *repeat* containing JUST an *image* question
- It will make access to your photos harder
- Use the *multiline* appearance instead





# A repeat is OK here...

type	name	label	calculation
begin repeat	Photos	Photos	
image	photo	Photo	
text	photo_desc	Description	
decimal	latitude	Latitude	pulldata("@exif", \${photo}, "GpsLatitude")
decimal	longitude	Longitude	pulldata("@exif", \${photo}, "GpsLongitude")
end repeat			

- In this case the repeat is used to capture photos and their corresponding description, lat and lon



# Counting attachments

type	name	label	appearance	calculation
image	photos	Photos	multiline	
integer	photocount	Photo Count	hidden	count-selected({photos})

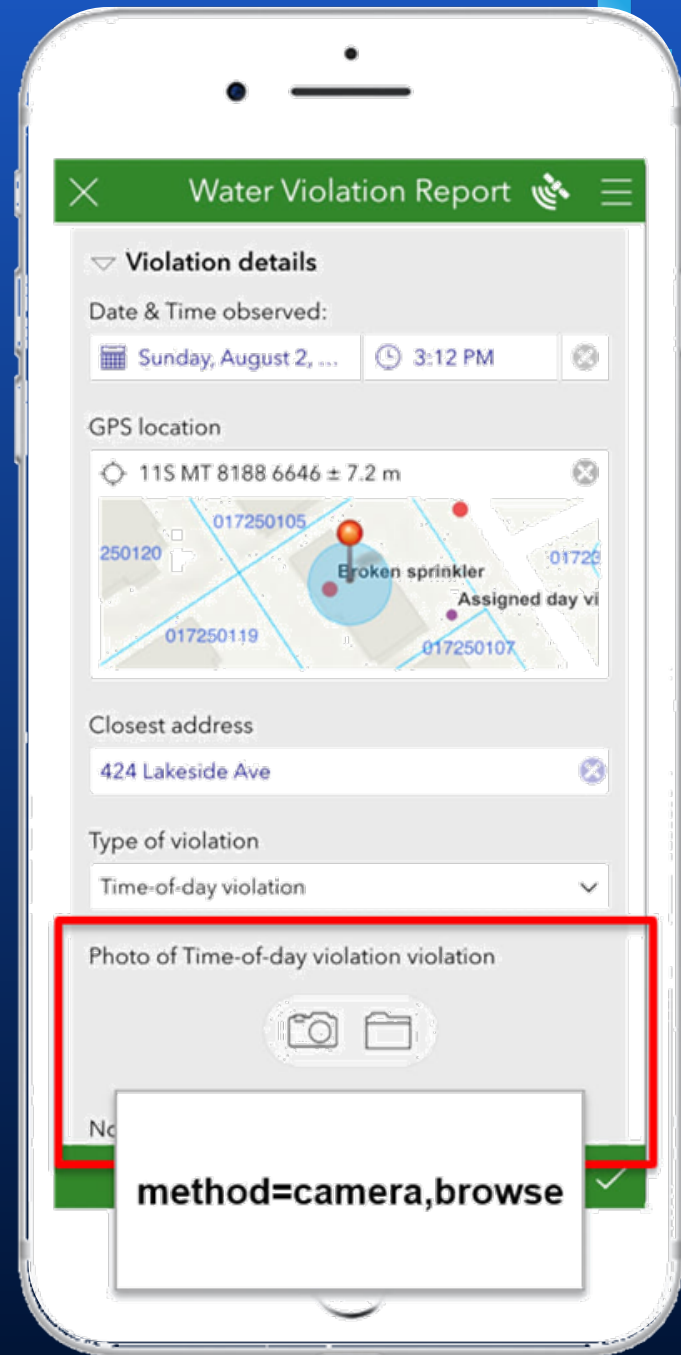
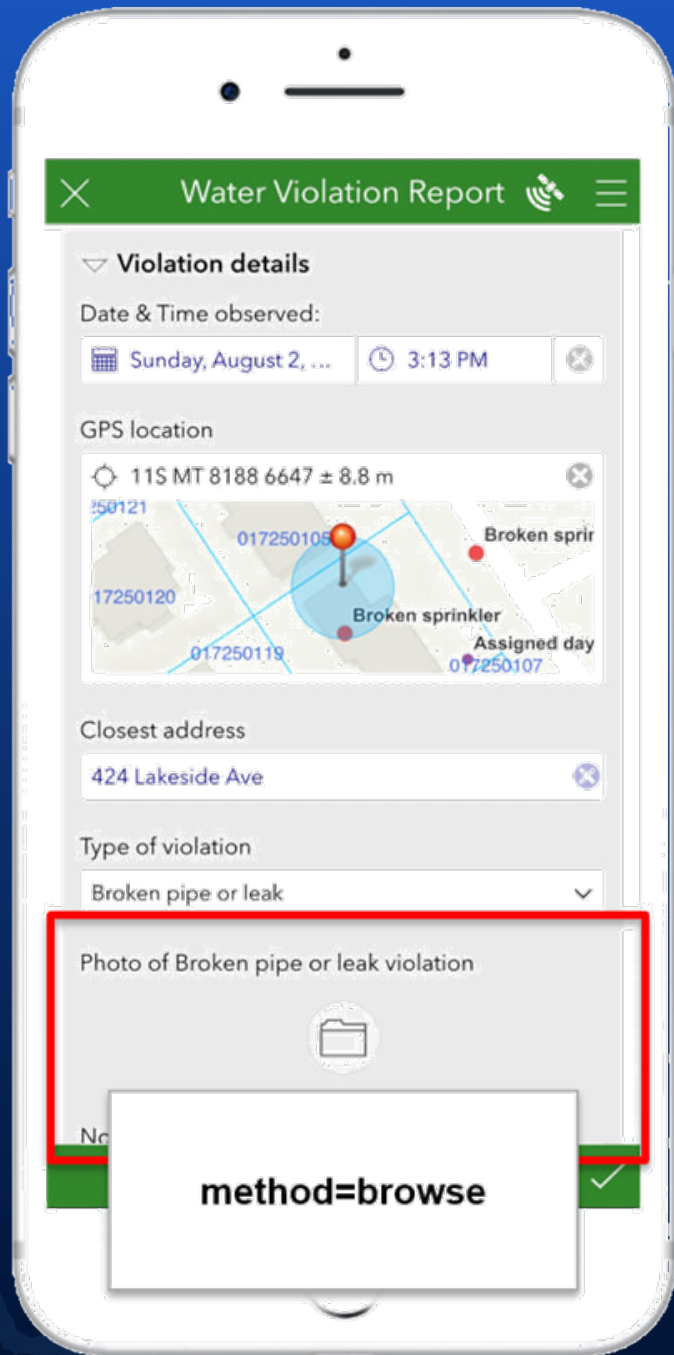
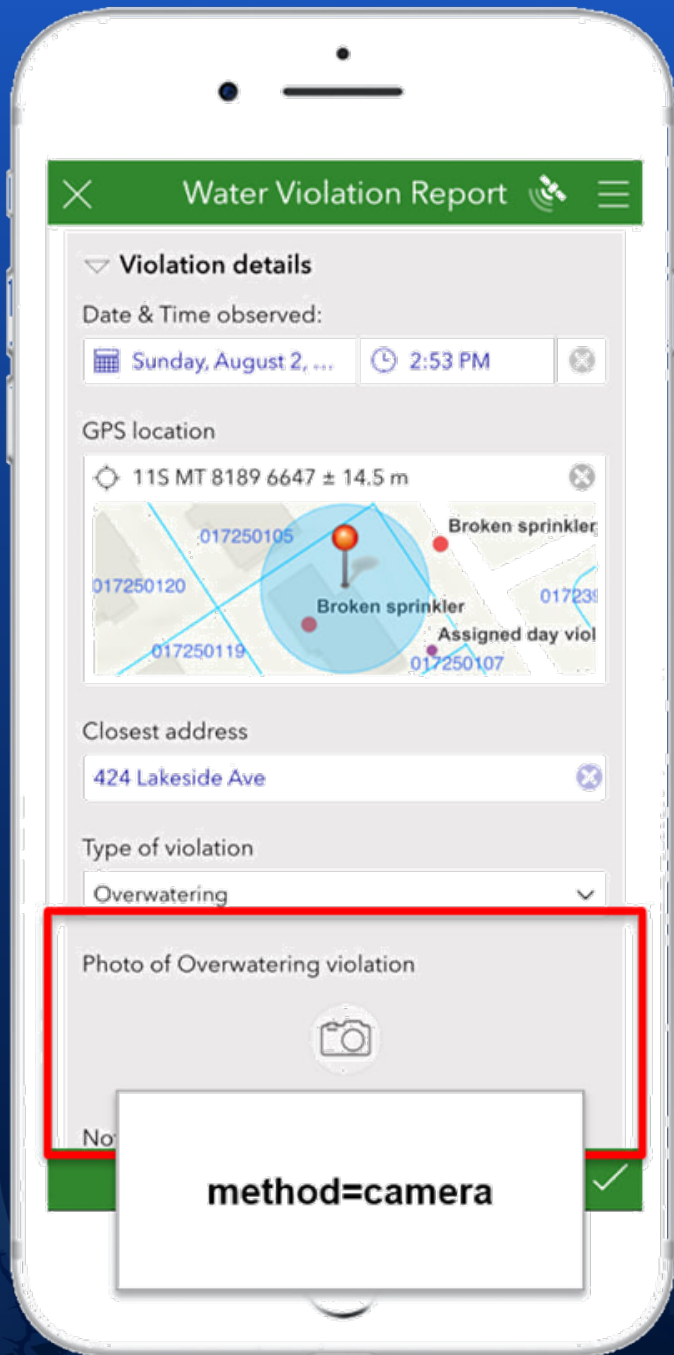
- count-selected() returns the number of attachments in a question
- You can use it in *calculations, constraints, relevant* expressions...



# Control the photo capture method

type	name	label	body::esri:style
image	photo	Photo	method=camera

- Methods: camera, browse and map (used for annotate)





# Using Connect to define the size of photos

ArcGIS Survey123 Connect

LISGIS v4

THE LIBERIA 2021 POPULATION AND HOUSING CENSUS NATIONAL GEOGRAPHIC PLANNING

▼ Enumeration Area Unique ID: 07732c47-328b-4453-b18d-fdc9a83284cf

Enumeration Area Type \*

Urban

Rural

▼ Section 1

Mapping Assistant

Supervisor

Regional Coordinator

Date of Interview

Time of Interview

▼ Section 2

County Name <input type="text"/>	County Code <input type="text"/>	District Name <input type="text"/>	District Code <input type="text"/>
Clan/Community/Ward Name <input type="text"/>	Clan/Community/Ward Code <input type="text"/>	Locality Name <input type="text"/>	TEMP Locality Code <input type="text"/>

▼ Mapping Feature Details

Form Details Options Map Linked Content Scripts Schema



# Reducing size of photos with max-pixels

type	name	label	parameters
image	photoback	Photo Back	max-pixels=1200
Image	photofront	Photo Front	max-pixels=2800

- Defines the maximum size of the longest edge of an image for a question
- Overrides the image reduction policy set in Connect
- Gives you more granular control



# Multi-lingual smart forms

Enhancements

# Multi-lingual surveys

*One survey, multiple languages*

Design survey with translations for all questions, constraint messages and much more.

You can now translate:

- Title
- Footer (Powered by message)
- Submit button label
- Thank you screen

Support added to both the field and web apps

The image shows a survey interface for "COVID-19 After Action Survey". The survey is displayed in English and Spanish. A table of translations is overlaid on the survey, showing the mapping between the English and Spanish labels for various elements. The survey questions are: "26. Have you or a family member travelled to/from March?" and "27. Did you quarantine for 14 days at any period?". The "Submit" button is highlighted in green. The thank you screen displays a green checkmark and the message "Great! Your data was sent successfully. Thanks.".

type	name	Label::English (en)	Label::Español (es)
note	generated_note_form_title	COVID-19 After Action Survey	Formulario post-COVID-19
note	generated_note_form_submit_text	Submit	Enviar
note	generated_note_form_footer	Powered by Survey123	Construido con Survey123
note	generated_note_prompt_submitted	Great! Your data was sent success...	Fantastico! Tus datos han sido....



## COVID-19 After Action Survey

### Travel

Unalaska's unique location limits our travel options to/from the island. Please answer the following questions about your experience coming/going if applicable.

26. Have you or a family member travelled to/from Unalaska since March?

Yes  No

27. Did you quarantine for 14 days at any period?

Yes  No

Back

Submit

Page 7 of 7

Powered by Survey123 for ArcGIS

type	name	Label::English (en)	Label::Español (es)
note	generated_note_form_title	COVID-19 After Action Survey	Formulario post-COVID-19
note	generated_note_form_submit_text	Submit	Enviar
note	generated_note_form_footer	Powered by Survey123	Construido con Survey123
note	generated_note_prompt_submitted	Great! Your data was sent success...	Fantastico! Tus datos han sido....

## COVID-19 After Action Survey



Great! Your data was sent successfully. Thanks.



# Dynamic content in the Thank You screen

type	name	label
text	respondent	Respondent name
note	generated_note_prompt_submitted	Bye \${respondent}, it was great to meet you!

- Use a note to set the content of the Thank You screen
- Only applicable to the Survey123 web app
- Dynamic content set through a [dynamic label](#)



# Custom JavaScript functions

Complement XLSForm syntax with JavaScript



# Custom JavaScript functions

type	name	label	calculation
integer	assetid	Asset ID	
decimal	size	Size	<code>pulldata("@javascript", "myJSFunction.js", "getSize", \${assetid})</code>

- Invoke custom JavaScript functions from your XLSForm expressions.
- Use cases:
  - Evaluate complex expressions (parsing, mathematical models...)
  - Connect to external services
  - Query feature services...
- New JavaScript function editor experience in Survey123 Connect



# Custom JavaScript functions

Demonstration



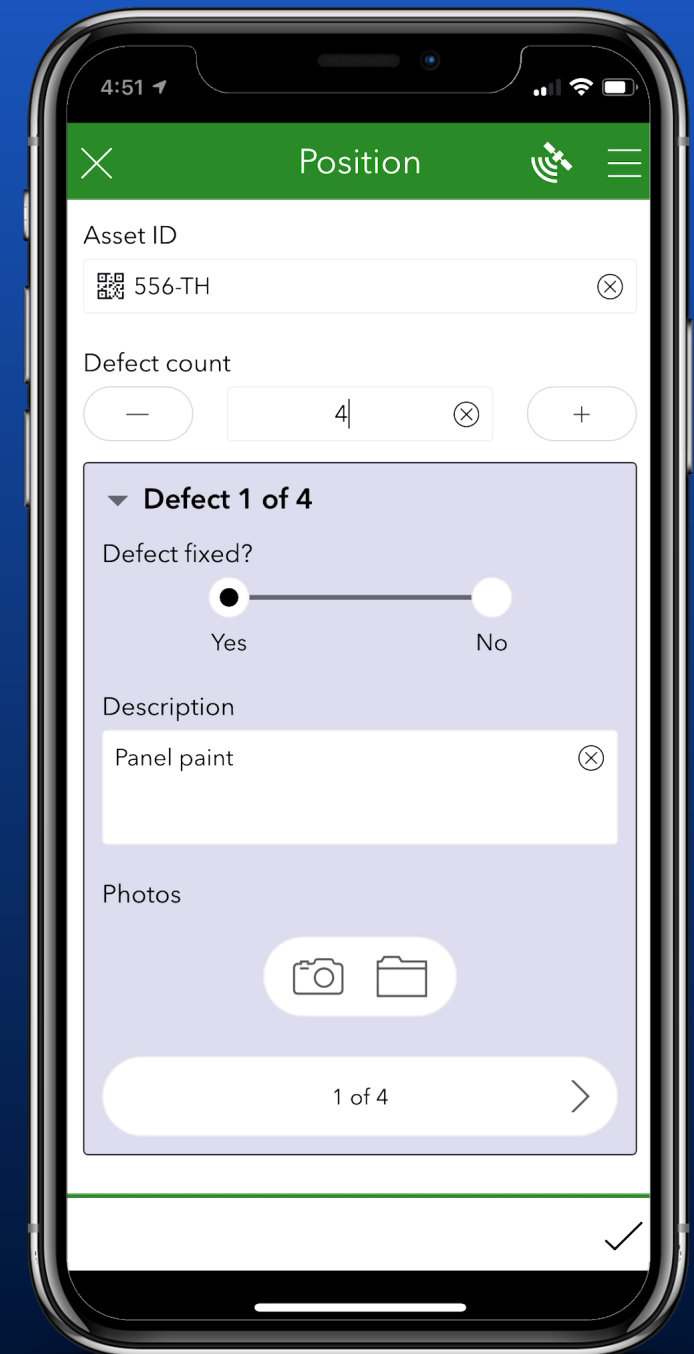
Other things you should know

# position(..) & indexed-repeat

type	name	label	calculation
integer	tot	Defect count	
begin repeat	defects	Defect \${pos} of \${tot}	
text	desc	Description	
calculate	pos		position(..)
end repeat			

position(..): Get the position of the current repeat record (if used inside the repeat)

indexed-repeat: Used to return a record value from a repeat record by its index



# Survey123 Connect on Windows

- Tired of uninstalling Connect before you can install the latest version?
- Tip: Install Survey123 Connect from the store (and you will get update notifications)
- As of version 3.12 you will be able to install 'over the top' even if using the exe installer



# Fixed!

Home > All Communities > Products > ArcGIS Survey123 > ArcGIS Survey123 Ideas > Format numbers to inclu... Options ⋮


## Format numbers to include thousand separators: Survey123 Feature Report

Follow this Idea

👁 393 💬 2 10-07-2019 09:21 AM

Status: Open

---

 by [Danielle\\_Papineau](#) Occasional Contributor II Post Options ▾

It would be very helpful to be able to **format numbers to include thousand separators** as an output in the feature report. The commas are visible in Data tab on the Survey123 website, but are excluded when pushed out to the report. I was hoping something like `${question | format: "999,999"}` would work, but it does not. In the report, I'd like to return **179,256** rather than **179256**. This could be done after the report is created, but that can amount to a lot of additional work.

[GeoNet question on this topic here](#)

Share 👍 17 Kudos

### Related

- 🔍 ✓ [Feature Report - displaying photos](#) Solved! 🔗
- 🔍 ✓ [Today\(\) in Survey123 feature reports](#)
- 🔍 ✓ [Survey 123 Report Template Error: An error occurre...](#) 🔗
- 🔍 ✓ [Survey123 unable to add feature service definition](#) 🔗


# Survey123 designer templates

ArcGIS Survey123    ▾ My Surveys    Organization    Help


< Templates Search 🔍

- All Industries
- State and Local Government (10)
- Health and Human Services (3)
- Transportation (4)
- Public Safety (5)
- Retail (1)
- Architecture, Engineering, and Construction (1)
- Sustainable Development (2)
- Natural Resources (3)


<< Collapse




**AED Inventory**  
Map portable electronic devices that automatically...




**AED Post Incident Usage...**  
Use this survey to report the use of an AED (automated...




**Code Violation Form**  
Use this form to report code violations in the City. While...




**Corporate Travel Request**  
Complete this form to submit a corporate travel request. This...




**Demolition Permit Appli...**  
Submit a demolition permit application to the local...



**Favorite Redlands Resta...**  
Cast your vote for the best restaurant in Redlands, CA...



**Quick Tree Hazard Survey**  
Quickly report hazardous trees. Accurately map the location ...






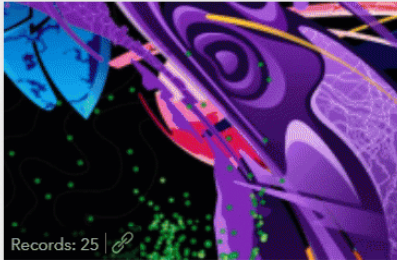

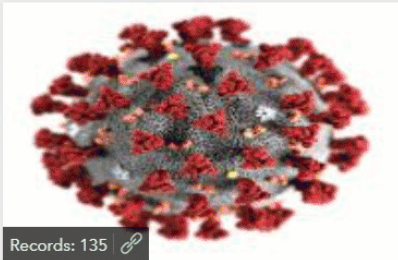


**Report road emergency**  
Alert the Department of Transportation of an...

# Change form ownership

ArcGIS Survey123 My Surveys Organization Help Ismael

My Surveys + New survey Search

Surveys I own Count: 42

 <p>Records: 0</p> <p>Plant Observations by Ismael</p> <p>✎ 🔒 📊 📄 ⋮</p>	 <p>Records: 2,774</p> <p>Evaluación de daños por tormenta by Ismael</p> <p>✎ 🌐 📊 📄 ⋮</p>	 <p>Records: 0</p> <p>AED Inventory by Ismael</p> <p>✎ 🌐 📊 📄 ⋮</p>	 <p>Records: 25</p> <p>Seminario Espanol 2021 by Ismael</p> <p>✎ 🌐 📊 📄 ⋮</p>
 <p>Records: 3,325</p> <p>Hydrant Inspections</p> <p>✎ 🔒 📊 📄 ⋮</p>	 <p>Records: 135</p> <p>Esri COVID Vaccine Checklist</p> <p>✎ 🌐 📊 📄 ⋮</p>	 <p>Records: 0</p> <p>LISGIS v6</p> <p>✎ 🌐 📊 📄 ⋮</p>	 <p>Records: 5</p> <p>Censo Poblacion y Vivienda v1.3</p> <p>✎ 🌐 📊 📄 ⋮</p>

# Road Map

The image features a vibrant blue gradient background. In the lower-left corner, there is a complex, abstract graphic design. This design includes a stylized map outline of a region, possibly a coastline or a specific area, rendered in shades of blue and red. Overlaid on and around this map are various geometric and organic shapes, including curved lines, circles, and rectangular blocks in colors like red, yellow, and light blue. The overall aesthetic is modern and dynamic, suggesting themes of technology, navigation, or global connectivity.

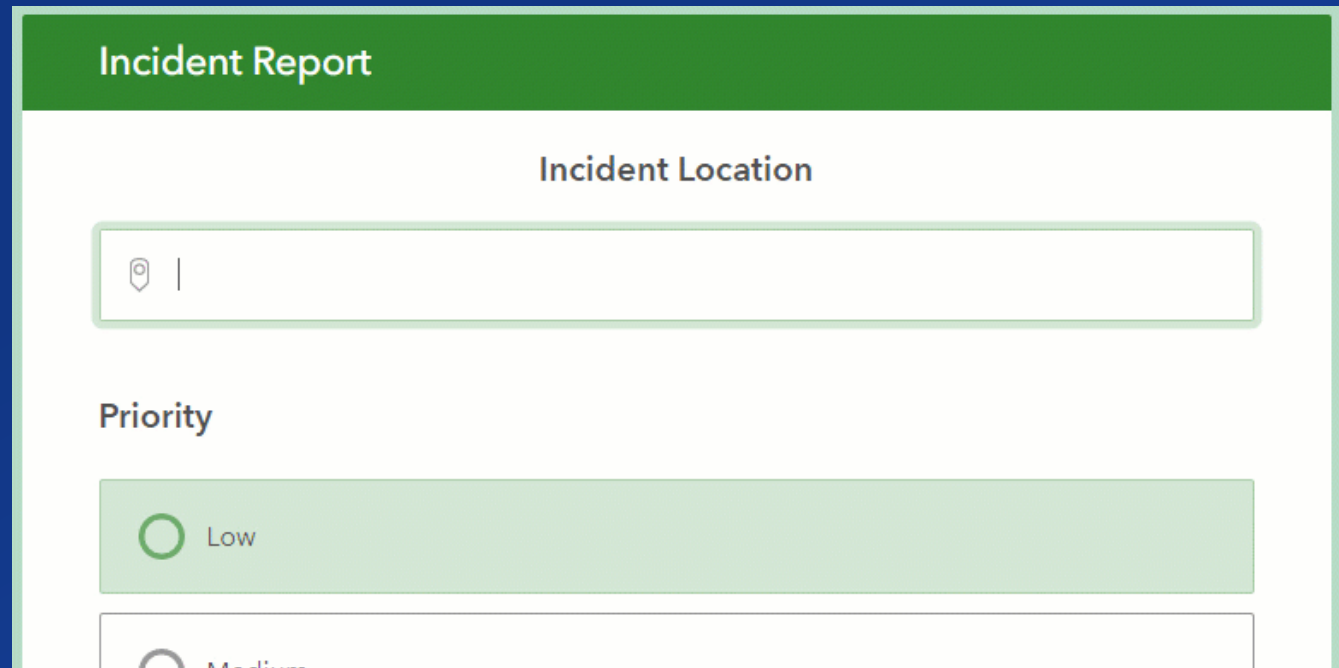
# Address question

For many people, addresses, not maps, represent the easiest and most accurate way to define a location.

The address question lets you effectively capture a location without the use of a map.

A simple text input allows users to enter an address with the help of an ArcGIS locator.

The location, user entered text and standardized address can be persisted using hidden fields.



The screenshot displays a form titled "Incident Report" with a green header. Below the header, the "Incident Location" section features a text input field with a location pin icon on the left. The "Priority" section below it contains two radio button options: "Low" (which is selected) and "Medium".

# Addresses, the easy way

type	name	label	appearance	calculation	bind::esri:parameters
geopoint	location	Incident location	geocode		geocode=e0010dd21a4245169f45c0aafaaa044f
text	address_std	Standardized address	hidden	pulldata('@geopoint', \${location}, 'geocode.attributes.Match_address')	
text	address_entered	Address entered by user	hidden	pulldata("@geopoint", \${location}, "geocode.searchText")	
integer	score	Score	hidden	pulldata('@geopoint', \${location}, 'geocode.attributes.Score')	

- To learn more:
  - [Survey123 Early Adopter Community](#)

# Dynamic lists

*Use the search appearance to populate a list from a query*

Dynamically populate a list using a query:

- To filter choices in a local choice list
- Against a feature layer

Dynamic lists use the XLSForm *search* appearance.

To learn more:

- [Survey123 Early Adopter Community](#)

# Survey123 field app add-ins

*A new extensibility framework*

Survey123 Add-ins let you extend the Survey123 field app with new question types:

- Build a custom user experience to capture data
- Connect to external sensors

You can also use add-ins to better control the user workflow in the Survey123 field app before or after a survey is used

To learn more:

- [Survey123 Early Adopter Program](#)



# Built-in location tracking

*Monitor the location of Survey123 users in real time*

To help users monitor the location of Survey123 users in real time and to better understand where Survey123 work has been performed, we will introduce built-in location tracking capabilities within the Survey123 field app.

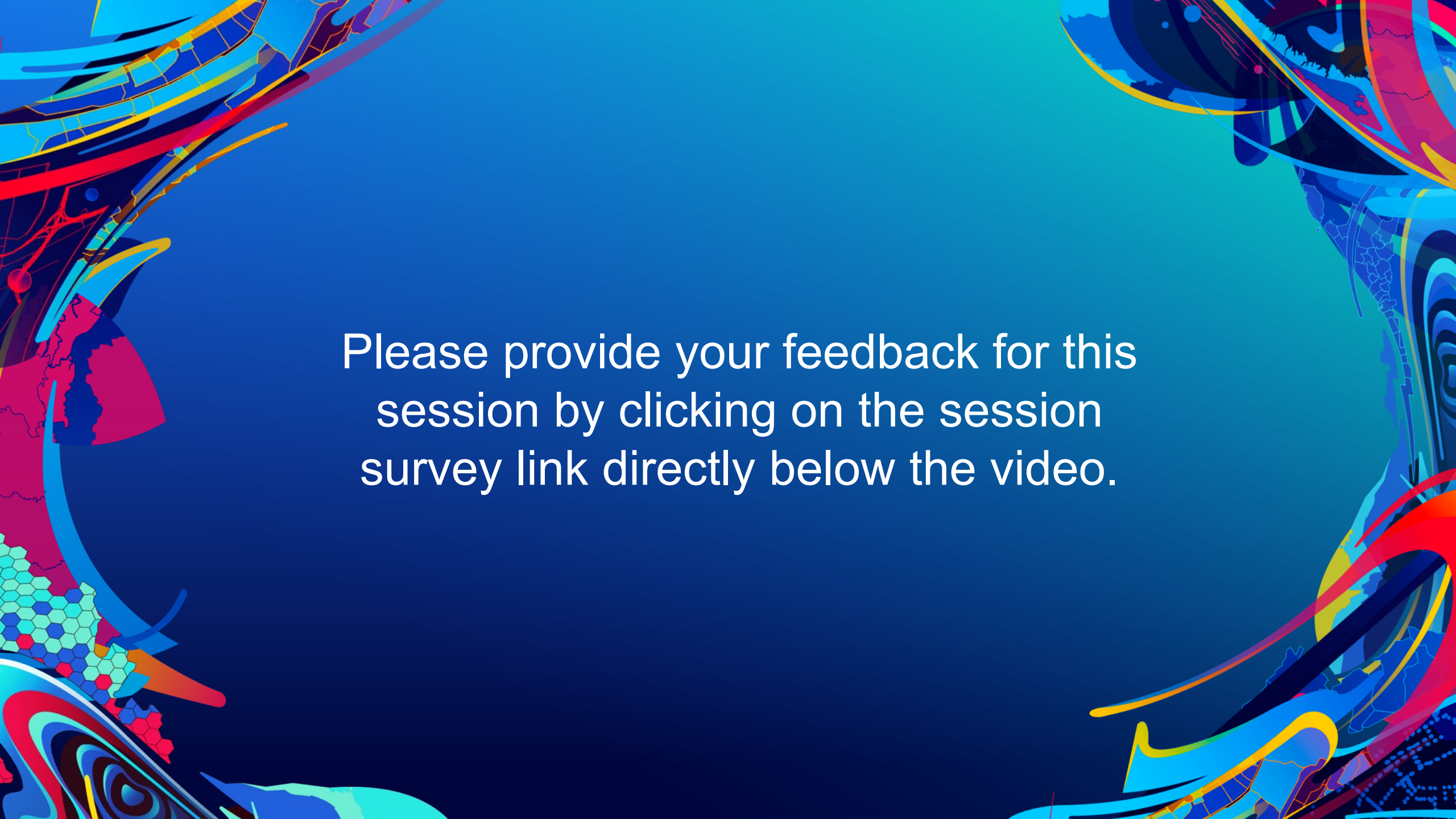
Location tracking will leverage the Location Tracking back-end infrastructure already available in ArcGIS and follow the same licensing model.

This work is planned to be made available in 2021.



# Other items for 2021

- Survey123 web designer: Add hidden questions, calculations and define more complex conditional visibility rules.
- Enable execution of custom JS functions in public surveys
- Enable attachments in the Survey123 field app Inbox
- Smart Camera



Please provide your feedback for this session by clicking on the session survey link directly below the video.



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SCIENCE  
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