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How to Use the Air Beam 10 -27

How to Fill Out the Dwelling IEQ Tool

Step 1: Open Dwelling Sheet

Step 2: Click on the tab at the bottom of the sheet with your name on it

Step 3: Fill out Dwelling Attributes section

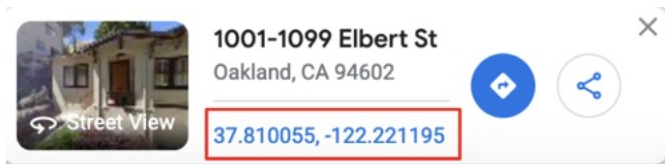
Dwelling Attributes	
Home Type	<input type="text"/>
Is your home Section 8 Subsidized?	<input type="text"/>
Is your home managed by the Oakland Housing Authority?	<input type="text"/>
Number of People in Living Unit	<input type="text"/>
Square Footage Estimate	<input type="text"/>
Date: (mm/dd/yyyy)	
GPS Location (Lat,Long) or Address	
Age of building (if you don't know, leave blank)	

3a. To calculate square footage, locate the longest stretch of your house from front to back. Use your feet to measure the distance by placing one foot directly in front of the other without any space in between. Each step is about 12 inches.

Do the same thing with the widest stretch of your house from side to side.

Calculate the distance and choose the closest estimate of square footage.

3b. To find GPS location, open the Google Maps app and type in your address. Zoom in on the map as close as you can and drop a pin at the nearest cross street (**not directly at your house!**). The pin will pull up the GPS coordinates. Click on them to copy the coordinates and go back to the Dwelling Sheet. Paste the coordinates in the correct cell.



How to Fill Out the Dwelling IEQ Tool

Step 4: Fill out the IEQ: Heating Ventilation Air Conditioning (HVAC) section

IEQ: Heating Ventilation Air Conditioning (HVAC)	
Is there Air Conditioning?	<input type="text"/>
Does the Air Conditioning Work? (leave blank if no	<input type="text"/>
Type of Air Conditioning (leave blank if no air cond	<input type="text"/>
What type of working Heating does your house hav	<input type="text"/>
Do you have any appliances like window air conditioners? If yes, list in the next cell. ⇒	
Do you have a portable air filter in your house?	<input type="text"/>

Air Conditioning Cheat Sheet



Mini Split air conditioning looks like this, and is on the wall near the ceiling

Any other type of air conditioning built into the house (ex. **Not** a window unit) can be labeled as “Central”

Do **not** record removable air conditioning or cooling units. See the section below on other cooling units.

Heating Cheat Sheet

Gravity Heater




on wall, baseboard, or in the floor. Gets hot but **does not blow air**

Might look like this in the house:





Might look like this in the basement:

How to Fill Out the Dwelling IEQ Tool

	
<p>Central Heat (sometimes called Forced Air) WITH Filter</p> <p>Warm air blows out vents</p> <p>Look for these:</p> <ul style="list-style-type: none"> • in wall • In ceiling • In floor <p>and has a filter to clean the air</p>	<p>Might look like this in the house:</p> 
<p>Central Heat (sometimes called Forced Air) WITHOUT Filter</p> <p>Warm air blows out vents in wall or ceiling and does not have a filter to clean the air</p>	<p>Will probably look very similar to the above. Ask your parents if you're not sure whether it has a filter or not.</p>
<p>Radiator Steam heat through pipes</p>	<p>Very easy to spot, and usually quite noisy! Might look like this:</p> 


4a. Do you have any appliances like window air conditioners? These are **not counted** as part of the Air Conditioning section above, so if you counted these in that section, go back and fix it! This can include but is not limited to: (does not count ceiling fans or box fans)

How to Fill Out the Dwelling IEQ Tool

<p>Window air conditioning units</p>	
<p>Evaporative coolers (also called swamp coolers)</p> <p>You put cold water or ice in the bottom section of the unit and it blows air, drawing the cooler air from the bottom of the unit out and into the room.</p>	

4b. Do you have an air filter in your house? – this is asking about standalone air filters, **not** ones built into your heating unit. Includes homemade filters using box fan and MERV13 filter.

Might look like this:

		
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How to Fill Out the Dwelling IEQ Tool




Step 5: Fill out the IEQ: Indoor Air Quality (IAQ) section

IEQ: Indoor Air Quality (IAQ) - PM 2.5 Readings		Score	
Measure in the Common Living Area (Living Room)			
Kitchen Stove Type	<input type="text"/>		
Kitchen Stove Fan	<input type="text"/>		
Bathroom Ventilation	<input type="text"/>		
Does anyone in the household smoke indoors?	<input type="text"/>		
Living Room PM 2.5 Reading Before Cooking - average after 4 minutes (add number only)⇒		4	
Living Room PM 2.5 Reading After Cooking - average after 4 minutes (add number only)⇒			4 IAQ Score
Living Room Relative Humidity - average after 4 minutes (add number only)⇒			
Outdoor PM 2.5 Reading - average after 4 minutes (add number only) ⇒			
Outdoor Relative Humidity - average after 4 minutes (add number only)⇒			
Is there mold present anywhere in the dwelling?	<input type="text"/>		

Stand on sidewalk away from dwelling

[insert picture(s) of mold here]

Kitchen Stove Cheat Sheet

Electric Burners are usually coils that are raised from the surface of the stove	Might look like this: 
Gas Has a pilot light and real flames. Usually has grates that are removable for cleaning.	Might look like this: 
Induction Completely flat. Coils are underneath the glass top and heat up red.	Might look like this: 

- Kitchen Stove Fan** - look for a pipe that runs from above the stove (usually from a range or exhaust hood) out of the room (usually into the ceiling or outer wall). That likely means you have a fan that blows to the outside of the house. **Keep in mind the pipe may be hidden behind cabinets - ask your parents if you're not sure!**

How to Fill Out the Dwelling IEQ Tool

You can also turn on the stove fan and see if you feel air blowing back into the room - if you don't feel it blowing back, select that the fan goes outside.

For air quality:

- For indoor air quality, go to the common area where most people spend time (like the living or family room). Collect air quality data for 4 minutes and record the average PM 2.5 reading from that time. Also record the average of the relative humidity readings during those 4 minutes.
- For outdoor air quality, be sure to move away from the house and stand on the sidewalk. Move away from anything (like parked cars) that might block air flow.

For mold:

(1) Select “yes” if there is mold anywhere in the living unit. Mold thrives anywhere it is wet, humid, and warm:

- bathrooms (especially showers)
- Basements
- Around heating/cooling units
- Windows
- Anywhere you have had a leak or water stains
- Sometimes on ceilings or walls - make sure to look upwards!

(2) Take a picture of the mold using the tablet. Add it into the spreadsheet by clicking the + sign at the top of the screen, adding the image **over the cell** (if you put it in the cell it is so tiny you can't see it!)

What does mold look like?



How to Fill Out the Dwelling IEQ Tool

Step 6: Fill out the IEQ: Thermal Comfort section

IEQ: Thermal Comfort	
Indoor Temperature (degrees Fahrenheit - enter number only) ⇒ <i>Measure in the Common Living Area (Living Room)</i>	
Outdoor Temperature (degrees Fahrenheit - enter number only) ⇒	

- Use the thermometer to measure the temperature in **degrees Fahrenheit**. For outdoor temperature, stand outside, away from the house for 4 minutes to allow the thermometer to adjust and get an accurate reading.

Step 7: Fill out the IEQ: Acoustic Comfort section

IEQ: Acoustic Comfort	
Indoor Decible Reading (add number only) ⇒	
List the sources of noise you hear indoors ⇒	
Outdoor Decible Reading (add number only) ⇒	
List the sources of noise you hear outdoors ⇒	

- Use the decibel reader to record the noise level in the main living room. The reading may fluctuate a **lot** depending on the amount of noise in the space. Stand with the meter for 1 minute and record the number you see the most (or estimate the most common reading).
- Do the same outside, but move away from the house and to the sidewalk.
- List as many sources of noise as you can recognize. Try to be specific (ex: refrigerator humming, multiple dogs barking, trucks driving by, music blasting from passing cars, etc)

Optional Step 8: Fill out the Demographic Section

This helps us know if there is a social and environmental injustice happening - if certain racial groups are facing more climate change challenges than others. This section is optional.








Demographic Information (optional)				
Select the box if anyone in the home identifies as multiracial?	<input type="checkbox"/>			
Select ALL boxes if anyone in the home identifies as:				
White	<input type="checkbox"/>			
Black or African American	<input type="checkbox"/>			
American Indian and Alaska Native	<input type="checkbox"/>			
Asian	<input type="checkbox"/>			
Native Hawaiian and Other Pacific Islander	<input type="checkbox"/>			
Other not listed above (please write the racial identity in the next cell):	<input type="checkbox"/>			

How to Fill Out the Dwelling IEQ Tool

That's it! Use the chart below to interpret your IEQ score:

Table 6

Scores corresponding to the letter ranking and colour codes on the **IEQCompass** labels.

Letter rank on the IEQCompass labels	Scores (fraction of the maximum achievable score)
	$85\% \leq \text{score} \leq 100\%$
	$75\% \leq \text{score} < 85\%$
	$65\% \leq \text{score} < 75\%$
	$55\% \leq \text{score} < 65\%$
	$45\% \leq \text{score} < 55\%$
	$35\% \leq \text{score} < 45\%$
	$0\% \leq \text{score} < 35\%$



AIR BEAM INSTRUCTIONS

Climate Resiliency Curriculum, Version 1: December 2023



LOGIN INFO FOR AIRCASTING APP

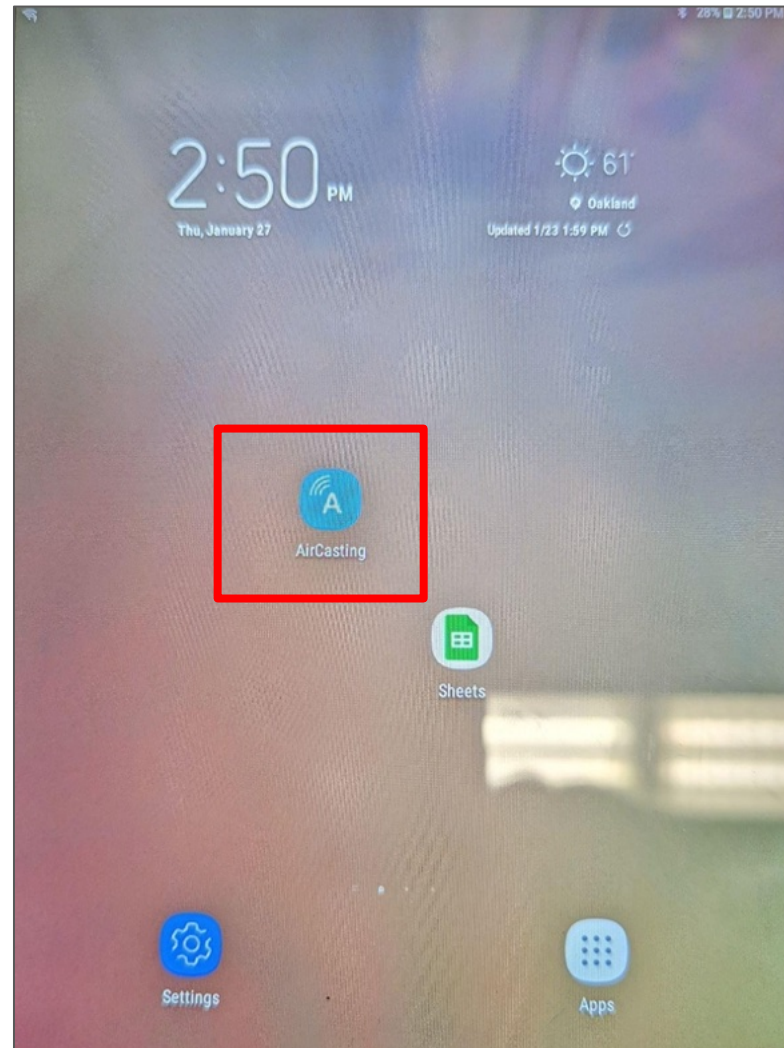


ebays.student@gmail.com

EBAYS123



OPEN "AIR CASTING" APP ON TABLET



IN THE APP, CLICK THE
" + " BUTTON
AT THE BOTTOM
OF THE SCREEN

Dashboard



Following

Mobile active

Mobile dormant

Ready to get started?

Explore & follow existing AirCasting sessions or use your own device to record a new session and monitor your health & environment.

Record new session

Explore existing sessions



CLICK
“MOBILE SESSION”



Let's begin

How would you like to add your session?

Record a new session

[more info](#)

Fixed session

for measuring in one place

Mobile session

for moving around

or

Sync storage

for AirBeam3 or
AirBeam Mini

Follow session

search & follow
fixed sessions

**SELECT
"BLUETOOTH DEVICE"**



What device are you using to
record this session?

Bluetooth device

for example AirBeam

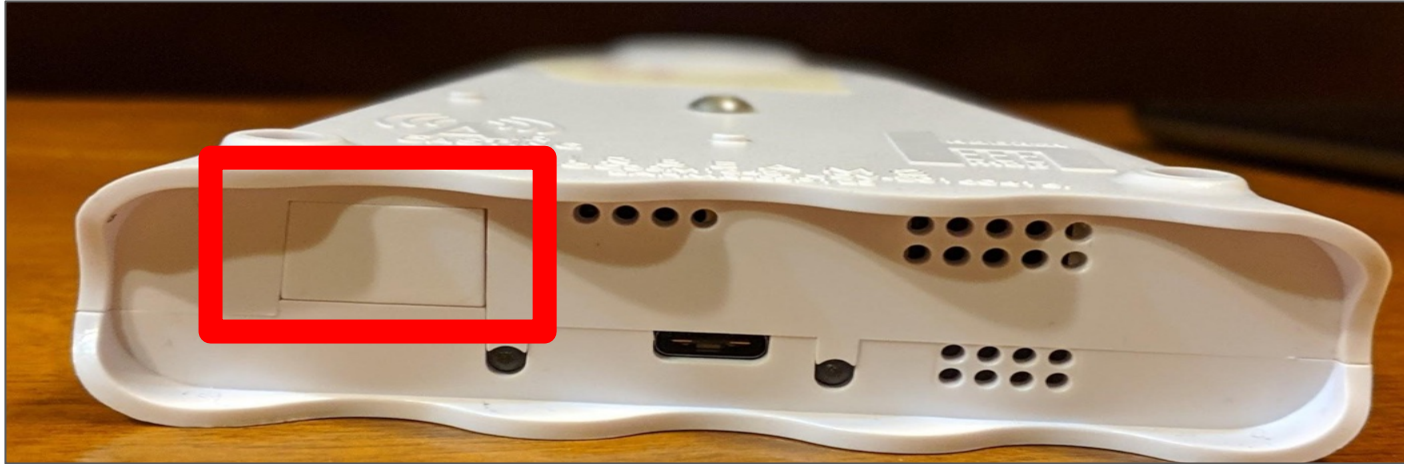


Phone microphone

to measure sound level



PRESS BUTTON ON BOTTOM OF AIR BEAM



**CLICK
“CONTINUE”**



Power on your Bluetooth device

If using AirBeam2, wait for the connection indicator to change from red to green before continuing.

Continue

On the list that pops up, find
the AirBeam that has
the same LAST 4 DIGITS
as the number listed on your AirBeam

Then click
"CONNECT"



Choose the device you'd like
to record with.

AirBeams

☐ AIRBEAM3:E868E7386324

Others

☐ COLLEEN'S PIXEL BUDS A-SERIES

☐ D30

☐ SOUNDCORE SPACE A40

☐ D30

☐ D30

[Don't see a device? Refresh scanning.](#)

Connect

This screen will pop up.

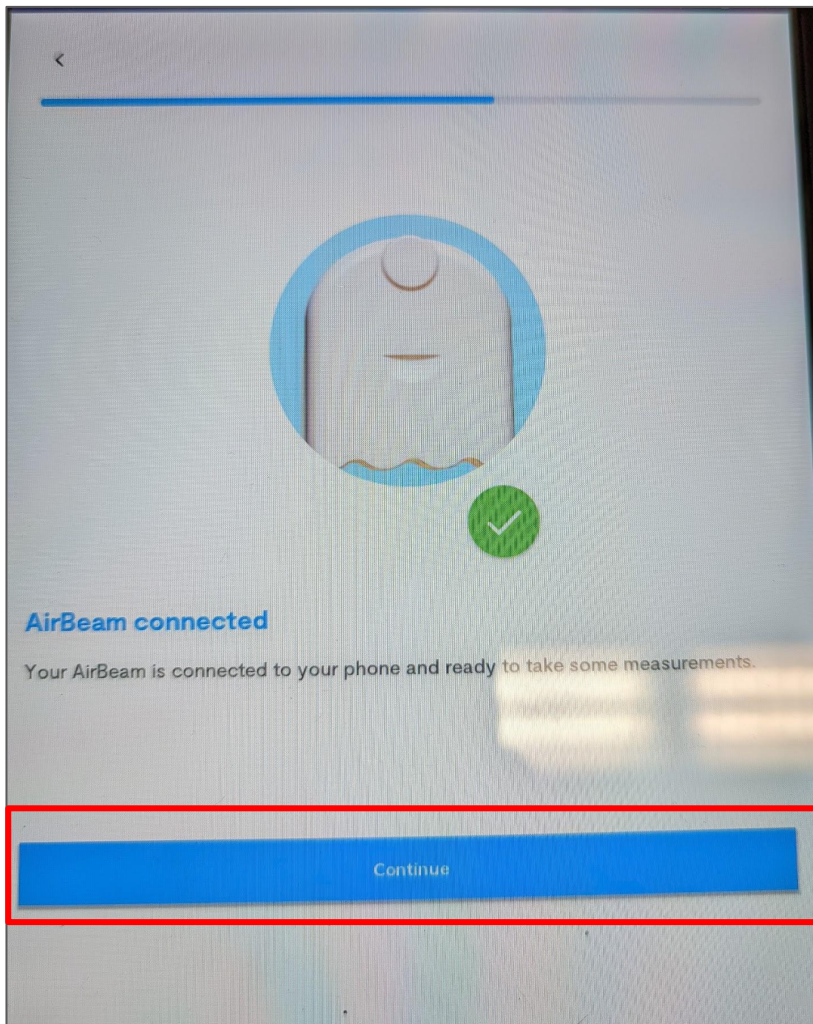
Wait a minute.

If it does not connect in about 10 seconds, turn the AirBeam off, quit out of the app, and try again.



Connecting

This should take less than 10 seconds.



**CLICK
“CONTINUE”**



The Air Beam light will turn white,
and the PM data will show up on the app.

**white light will turn off after 2 min -
that's ok! It's still collecting data*

New session details

Colleen Sutherland-03222024-park&580

Tags

Continue

Save the session as:

Name-Date-Location

Ex:

Colleen Sutherland-03232024-Fruitvale&35th

Ignore the “Tags” field

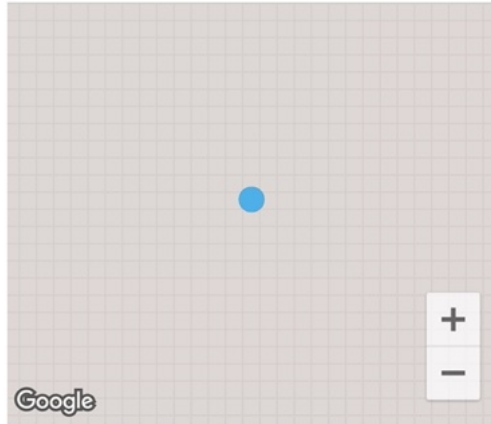
Click “Continue”



Are you ready?

Your **mobile** session **Colleen Sutherland-03222024-park&580** is ready to start gathering data.

Move to your starting location, confirm your location is accurate on the map, then press the start recording button below.



Start recording

**PICK A SPOT TO STAND AND POSITION THE AIRBEAM
OUTWARDS.**

CLICK “START RECORDING”

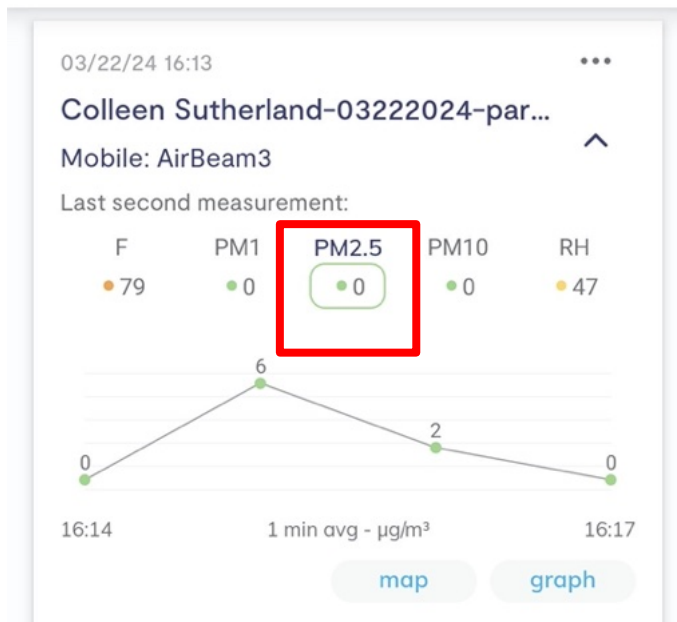
IMMEDIATELY START TIMING.

CLICK ON "PM 2.5"



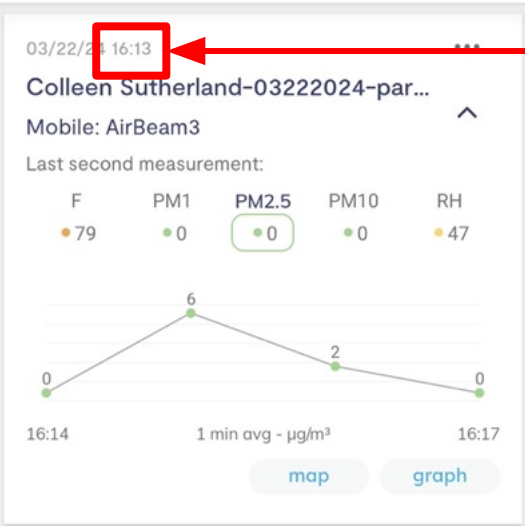
Dashboard

Following [Mobile active](#) Mobile dormant



Dashboard

Following Mobile active Mobile dormant



The time you started recording data (you can use this as a timer!)

Each dot is the average PM 2.5 reading every 60 seconds - record this on your data sheet, as well as any higher numbers!

Location:	Time of day: 4:14 PM	Time of day: 4:15 PM	Time of day: 4:16 PM	Time of day: 4:17 PM
	PM 2.5 Concentration: 0	PM 2.5 Concentration: 6	PM 2.5 Concentration: 2	PM 2.5 Concentration: 0
	Qualitative Observations (why might the PM level be high or low?): wind	Qualitative Observations (why might the PM level be high or low?): Car passed	Qualitative Observations (why might the PM level be high or low?): Traffic light red (cars stopped)	Qualitative Observations (why might the PM level be high or low?): wind
	Start Timing	1 min	2 min	3 min

High reading of 8: truck sped up past me

0-12 ug/m3 is healthy (green) 13-35 ug/m3 is moderate (yellow) 36-55 ug/m3 is unhealthy for sensitive groups (orange) 55-150 ug/m3 is unhealthy for all (red)

Dashboard

Following **Mobile active** Mobile dormant

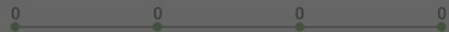
03/22/24 16:38

Colleen Sutherland-03222024-par...

Mobile: AirBeam3

Last second measurement:

F	PM1	PM2.5	PM10	RH
80	0	0	0	47



16:39 1 min avg - $\mu\text{g}/\text{m}^3$ 16:42

map

graph

Finish recording session

Add note

Enter standalone mode

Cancel

Important:

end your session after 4 minutes

To end your session:

1. Click the **3 dots** at the top right of the file.
2. Click **“Finish recording session”**

Dashboard

Following

Mobile active

Mobile dormant

03/22/24 16:38



Colleen Sutherland-03222024-par...



Mobile: AirBeam3

Finish recording **Colleen
Sutherland-03222024-park&580?**

The session will be moved to **Mobile
Dormant** tab and you won't be able to
add new measurements to it.

Finish recording

Cancel

Click “Finish Recording”

The file will automatically
move you over to the
“mobile dormant” tab.
Click on your session to see
the average of each type of
data.



TROUBLESHOOTING COMMON PROBLEMS

The problem:

1. Airbeam does not connect after waiting 60 seconds
2. After connecting, tablet comes up with a message about not being able to sync
3. While connecting, tablet says you already have an active session

The solution:

1. Turn Airbeam off, quit out of the app, and try again
2. Click “Finish recording and don’t sync”
3. Go to the “Mobile Active” tab at the top of the app, Click “finish recording and don’t sync.” Then turn the Air Beam off, quit out of the app, and reconnect.