

Using QR Codes in Your Public Outreach Efforts

While QR codes are not necessarily new, they began to have a resurgence in use starting around 2019. Nearly all modern phones now can read a QR code with the default camera app and do not require a special app. While the default camera app will do the trick, there are also a plethora of dedicated QR code reading applications that offer additional features and faster QR code recognition.

From payment information, medical information, airline boarding passes, restaurant menus, and more, QR codes are everywhere and are not likely to fade out any time soon.



QR codes are a great way to transition viewers from the real world to online resources.

What is a QR Code?

QR stands for Quick Response Code. A QR code is a type of matrix, or two-dimensional bar code system. These codes can be read from any angle, any direction, or nearly any orientation by a camera or standard barcode scanning system. They also offer redundancy for data loss. For example, if some of the QR code is not visible it will still work (this is dependent on the settings it was created under, explained later).



What Can I Put in A QR Code?

QR codes store data. This data can be a string of text, a website URL, contact information, or even a piece of code to take an action.

The most common use is to have the QR code direct to a website URL.

How Do I Create A QR Code?

There are many “free” services on the internet that allow you to create QR codes, but there are a few critical pieces of information you should consider before using these services.

1. Most free QR code generating services are actually redirection services. You will notice that the website URL on the QR code is their own, which then redirects to your input link. They want you to pay for their analytics or tracking services.
2. Output format and size. Many free websites limit the way you can export your QR code, limiting your application of that code.
3. Configuration of the QR code. This varies by service and is really just user preference.

Recommended QR code generators:

1. <https://www.qrcode-monkey.com/>
 - a. Does not rewrite your URL unless you turn on “Statistics and Editability”
 - b. Lots of options with an easy-to-use interface.
 - c. Allows high quality .png file download as well as multiple vector formats.
2. <https://www.nayuki.io/page/qr-code-generator-library>
 - a. This tool does not provide many style options but allows full control of the technical aspects of the QR code. It does not change your URL and gives you options on quality of code created including error correction, version, and even encoding type.
 - b. The most common output format is “Bitmap” This will only output a .jpg that you must right click and save as. You can, however, set the scale as high as 30 pixels per module or box, which is plenty big for most applications.
 - c. If you select “Output format: Vector,” you can copy the code it creates, paste that into a notepad document, then save that document with the file extension “.svg” This is a “scalable vector graphic” that can be scaled up infinitely in size without losing quality using a program like Adobe Illustrator.
3. <https://www.qr-code-generator.com/>
 - a. Does not rewrite your URL unless you turn on “scan tracking”
 - i. Use your own built-in scan tracking on the URL by adding “?source=qr”. More info below.
 - b. Requires free site registration to get anything other than a low resolution .jpg.
4. https://developers.google.com/chart/infographics/docs/qr_codes?hl=en
 - a. Google’s dynamic QR code generator. You build a URL and it returns your QR code.
 - b. For more advanced users for the creation of dynamic QR codes from web apps.

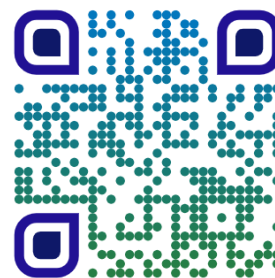
Design notes:

You can change the shape of the “eyes” (3 corner boxes), you can change colors as long as the white(background) remains one solid color. You can even change the shape of the boxes to an extent.

You can add your logo to the middle, but this requires a higher level of QR code to make up for the lost data space. See advanced notes below.

Please note that the further you stray from the black and white boxes, the more difficult it will be for cameras to read the QR code.

Try to only have one QR code per flier or page, multiple QR codes can confuse the user’s camera and you do not know which one it will pick up first.



*****It is good practice to always include text near the QR code that lets the user know what will happen when they scan it. “Scan to learn about this plant,” “Scan to check into this session,” or “Scan to learn more about Trash Free Texas.” Users are not likely to scan a code when they do not know what will happen.**

What Are Some Ideas for Ways To Use QR Codes?

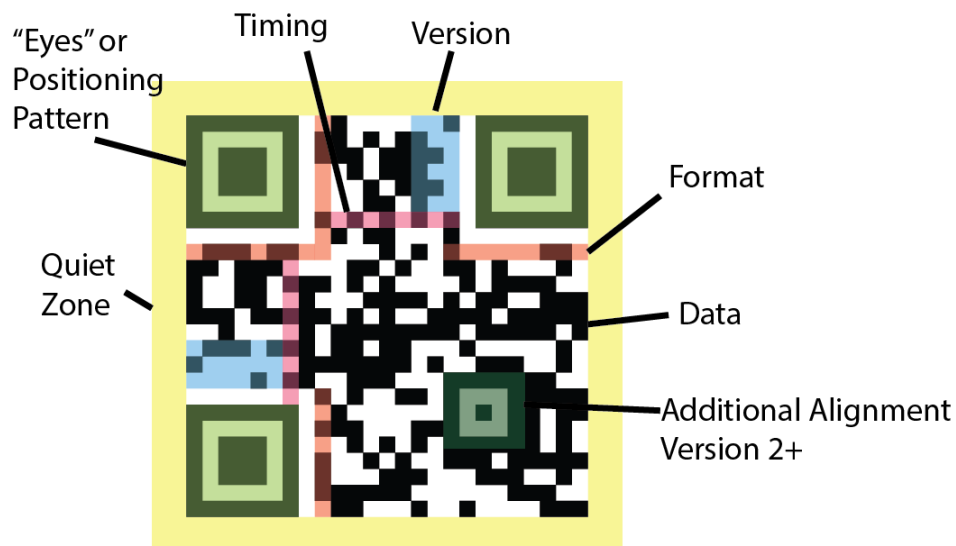
- Education signage and fliers. “Scan for more information.”
 - This would lead to your specific website or web page.
- Waste Station Signage. “Scan to learn how you can help the environment.”
 - Learn more about what to put in which bin. (Website link or video link.)
 - Learn about how your efforts are helping the environment.
- Unmanned education exhibits. “Scan to learn about X.”
- Follow us on Facebook/Twitter/Instagram/Social Media.
 - Typically, a direct link to your profile page for that platform is the best way to accomplish this. Most platforms have abuse prevention measures in place to keep you from automating likes or subscribers.
- Directing to online videos. “Scan to watch this video.”
 - Get the share link from YouTube. This will open the YouTube app on the user’s phone for them to view the video.
 - You could also link to a web page of yours that has the video embedded in it. This way the user is exposed to additional information but also gets the video as promised.
- Digital Business cards. “Scan for contact information.”
 - This can be a link to a web page that provides your contact information (Example: <https://dotcards.net/>), or you can store the contact information directly within the QR code. *Storing the data directly within the QR code will generate a larger code which may present problems scanning if it is too small.
- Scan to fill out a form or survey. “Scan to take our survey.”

- Link to take a survey.
- Link to a form to register for an event.
- Check in to an event. “Scan to check in online.”
 - This could go to a simple check-in form or be as complex as a unique QR code on a ticket that automatically checks in that specific user.

Advanced QR Code Information

While it may not be necessary to fully understand the inner workings of QR codes, understanding how they work will allow you to create more effective QR codes that read faster and work more reliably, which results in a better end user experience and over time build trust in the QR codes your organization puts out.

Anatomy of a QR Code



QR Code Levels

There are several levels, versions, or sizes of QR codes which are determined primarily by the amount of data needing to be stored. The higher the level, the more boxes wide the QR code will be, and the more data you can store. You will also notice additional alignment marks being introduced as the QR code grows.



Version 1 can store a maximum of 25 characters, while version 6 can store 195 characters. Versions continue to grow to version 40, which can store over 4,000 characters.

URLs for QR Codes

When you create a QR code, you can use the entire URL “<https://www.trashfreetexas.org/>” but it is often better to simply start with “[www](http://www.name.com)” to allow the user’s browser to determine if the website is <https://www.name.com>, <https://name.com>, <http://www.name.com>, or <http://name.com>. By starting with “[www](http://www.name.com)” the user’s phone will recognize it as a website link and defends your QR code from future changes to the target website.

Tracking QR Code Use with Your Existing Website Analytics

When you create a QR code, it is a good idea to include a source parameter on your URL so that you can track the usage of that individual QR code using your existing website analytics such as Google Analytics.

To do this, simply add a question mark followed by a name and value pair. The most common is “source” and “QR” but you can make these values anything: “s=qr”, “qr=1”, or “utm_source=bigsign” - do not use spaces.

For example: www.trashfreetexas.org/?source=QR

If your URL already has a parameter in the address, then you would use “&” instead of “?”

For example: <https://www.trashfreetexas.org/partner&source=qr>

Sizing and Image Format Considerations

Scale your QR code to the situation it is intended to be used in. This may take some testing, but if a QR code is large and the user is close to it, they will have trouble scanning it. The same goes (to a lesser extent) for being too small. If the camera’s resolution is not high enough it will not scan smaller more detailed codes. If you have only a very small area to place the QR code, then you may want to use a URL shortener such as <https://bit.ly>, this will allow you to use a lower version QR code which works better in the smaller spaces.

A QR code on a flyer the size of a standard sheet of paper should be around 1in x 1in but could be anywhere from ½ inch to 2 inches in size.

A QR code on an A frame poster at an event should be at least 6 in x 6 in, ideally around 10-12in.

Whatever size you choose to use, the sharper your image, the better it will scan. Do not scale up a small .jpg image so that it is fuzzy on a large poster. Create a higher resolution image, or even better use a vector graphic version.

