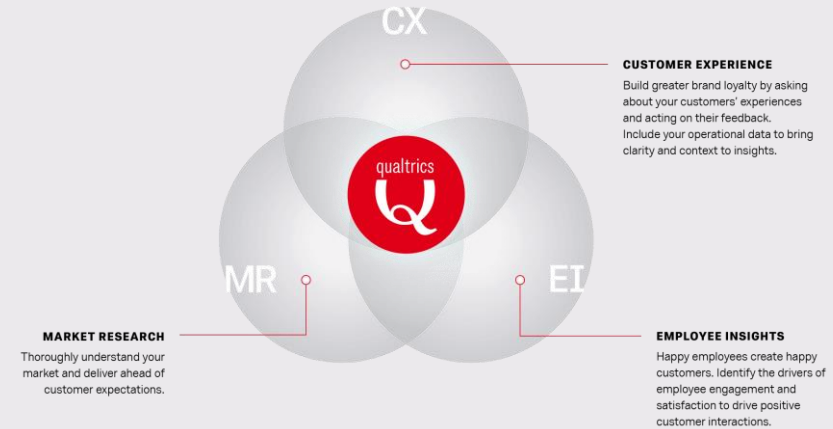


Tutorial: Creating a 2-  
Alternative Forced Choice  
Experiment using **ETK**: the  
**Evaluation Toolkit**

# Overview of steps:

- Create a Qualtrics project
- Add a Question
- Add the ETK CSS file
- Add the ETK HTML file
- Add the ETK JavaScript file
- Add output variables
- Get a URL link and put into Amazon Mechanical Turk

ETK homepage: [etklab.org](http://etklab.org)  
GitHub: [github.com/ascr-ecx/etk](https://github.com/ascr-ecx/etk)



## WELCOME TO ETK LAB

OCTOBER 6, 2016 EDIT



Welcome to the Evaluation Toolkit Lab. We have created a toolkit designed to help you conduct image-based perceptual studies on your own visualizations. Using this toolkit, you can quickly construct and conduct studies that provide feedback on your visualizations, so that you can evaluate, understand and improve them. If you have a visualization, and want to know how effective it is, our toolkit can help.

The ETK consists of a set of modules that leverage the JavaScript API within Qualtrics Survey software ([www.qualtrics.com](http://www.qualtrics.com)) to easily implement and run different types of psychophysical experiments with images. Each module consists of JavaScript, HTML and CSS scripts that are inserted into a Qualtrics question/survey. The researcher needs to make only minimal changes (e.g., update the list of images to use in a study) in order to get a study question set up.

The ETK may not be able to design a user study for you. But once you have an experimental design, the ETK makes it a snap to implement it within Qualtrics.

# Create a new project



### Create a Project

**New, Blank Project**

Create From Existing

- From a Copy
- From a Library
- From a File

Create a Project from Scratch

Project Name:

Folder:

Cancel **Create Project**

My Projects > Demo

Projects Contacts Library Help & Feedback

Survey Distributions Data & Analysis Reports

Look & Feel Survey Flow Survey Options Tools

Preview Survey Search Questions...

Change Question Type

Text / Graphic

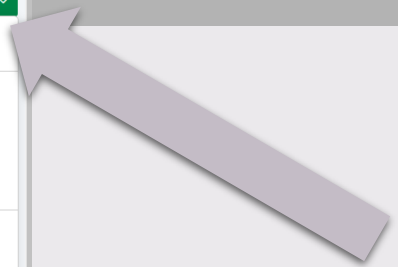
Default Question Block

Q1 Click to write the question text

Import Questions From... Create a New Question

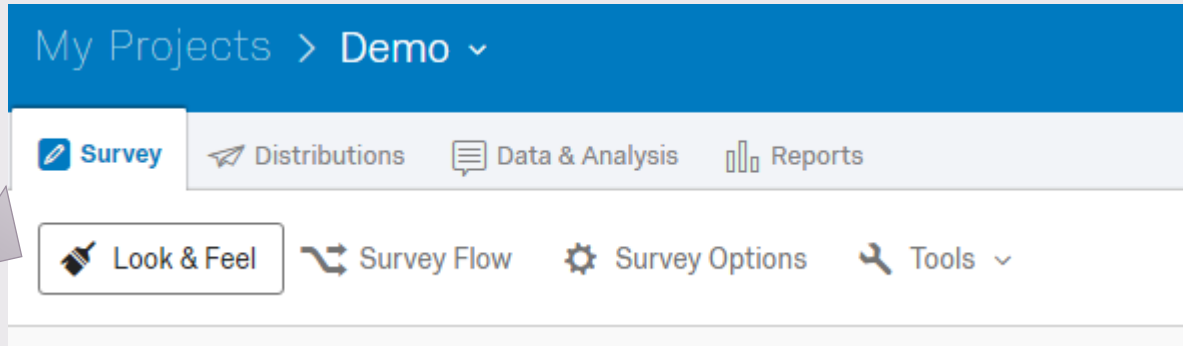
Add Block

Static Content	Descriptive Text	Graphic
Standard Questions	Multiple Choice	Matrix Table
	Text Entry	Slider
	Rank Order	Side by Side
	Constant Sum	Pick, Group, and Rank
Specialty Questions	Hot Spot	Heat Map
	Graphic Slider	Gap Analysis
	Drill Down	Net Promoter Score®
	Highlight	Signature
Advanced	Timing	Meta Info Question
	File Upload	Screen Capture
	Captcha Verification	
Replace From Library	Question Library	

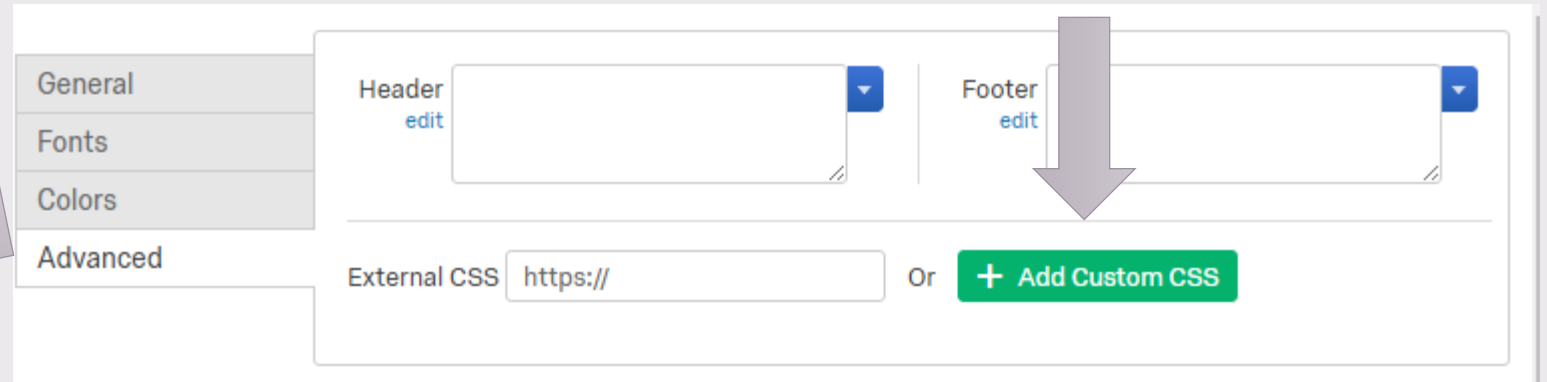


# And add a Descriptive Text Question

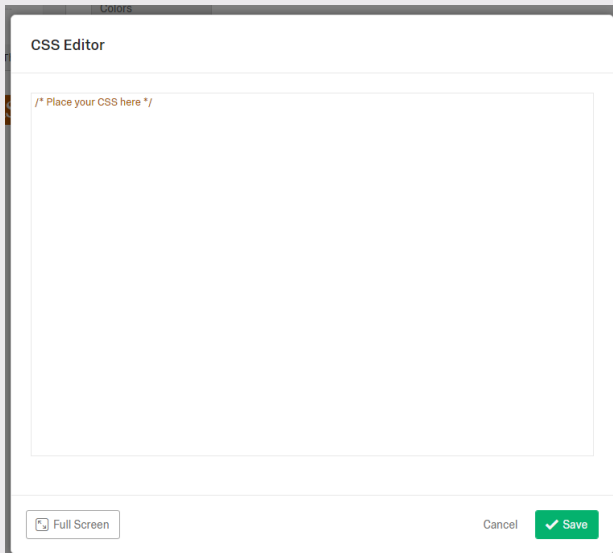
# Look & Feel tab leads to the



# Advanced tab leads to + Add Custom CSS



# +Add Custom CSS opens up CSS editor



## CSS Editor

/\* Place your CSS here \*/

```
.pairBox {  
margin-left: auto;  
margin-right: auto;  
width: 860px; /* Modify to be (2*image width + 60pixels) */  
position: relative;  
margin: 1em;  
border: 10px solid #ccc;  
overflow: hidden;  
background-color: #CCC;  
}  
  
.choiceButton {  
background-color: burlywood;  
position: center;  
text-align: center;  
font-weight: bold;  
font-size: 120%;  
width: 40%;  
}  
.leftButton {  
margin-left: 5.0%;  
}  
.nextButton {  
background-color: white;  
position: center;
```

Insert the ETK CSS file; modify image width as needed

Full Screen

Cancel

Save

Can also change Next Button to SUBMIT>>

General

Fonts

Colors

Advanced

Next Button Text:

SUBMIT>>

Back Button Text:

<<

Progress Bar:

No Progress Bar

Page Transition:

None

Questions per Page:

Highlight Questions


Question Separator

Click on the question to bring up the question editor;  
choose **HTML View** to insert the ETK HTML file

Demo

Default Question Block

Rich Content Editor... Piped Text... **HTML View** Normal View

Q1  


Click to write the question text

Import Questions From... **+ Create a New Question**

Edit as necessary for your question text.

Default Question Block

Rich Content Editor... Piped Text... Remove Formatting **HTML View** Normal View

Q1  

```
<div id="imageContainer"></div>

<p id="myQuesText">
Using the LEFT/RIGHT buttons, please choose the DARKER image.
Click on Next Image Pair when you have made your choice.

The SUBMIT button will appear after all image pairs have been viewed.
</p>
```

▼ Default Question Block

✓ Q1

Using the LEFT/RIGHT buttons, please choose the DARKER image. Click on Next Image Pair when you have made your choice. The SUBMIT button will appear after all image pairs have been viewed.



↳ Add Display Logic...

⌘ Carry Forward Choices...

↶ Add Skip Logic...

JS Add JavaScript...

📄 Add Note...

Click on option icon to left of the question; select **Add JavaScript...** to bring up the JavaScript editor

Insert the ETK JavaScript file and edit as necessary to point to your image arrays and change any relevant options.

Edit Question JavaScript

```
Qualtrics.SurveyEngine.addOnLoad(function()
{
  /*Place Your JavaScript Here*/

  /* The 2 Alternative Forced Choice module is used to run a 2AFC experiment.
  The module assumes that there is a set of baseline images and a set of stimuli images. Each stimuli image level may
  consist of multiple variants. The baseline images are in a single array. One baseline image will be randomly chosen
  to be used in each comparison. The stimuli images are an array of arrays where the first index is the stimuli level
  and the second index goes over the level variants. An array of single stimuli images, one for each level of the
  stimuli, will be built from one randomly chosen variant image from each level.
  The image arrays will need to be modified for the user specific images.

  The prefixes and code for the Embedded Data can also be changed as needed
  to fit the specific variable names defined by the user.
  */

  // List of Baseline and Stimuli images.
  // One Stimuli image for each level will be chosen from each set of variants and that will be compared to
  // one of the possible Baseline images.
  // If a Baseline image should be compared to one of the Baseline images (typical 2AFC procedure), then the set of
  // Baseline images should be included as one of the possible sets of Stimuli images.
  // The test images vary the value from V=0 (black) through varying shades of grey. There are five variants for
  // each value level (value**-00 through value**-04).

  var imgURL = "http://000.0.00.00/TestImages/ValueVarying/";
  var allBaselineNames = [
    "value00-00.png",
    "value00-01.png",
    "value00-02.png",
    "value00-03.png",
    "value00-04.png"
  ];
  var allStimuliNames = [
```

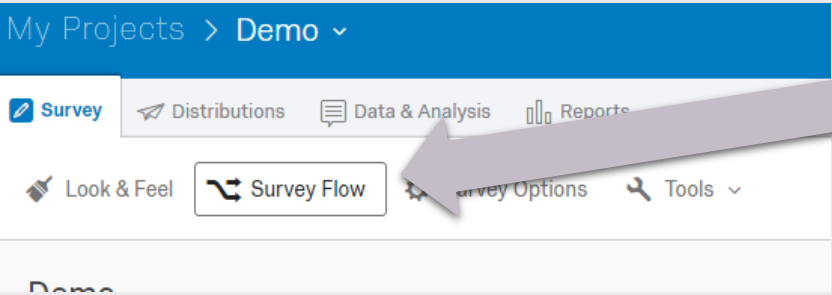
JS Question API

Full Screen

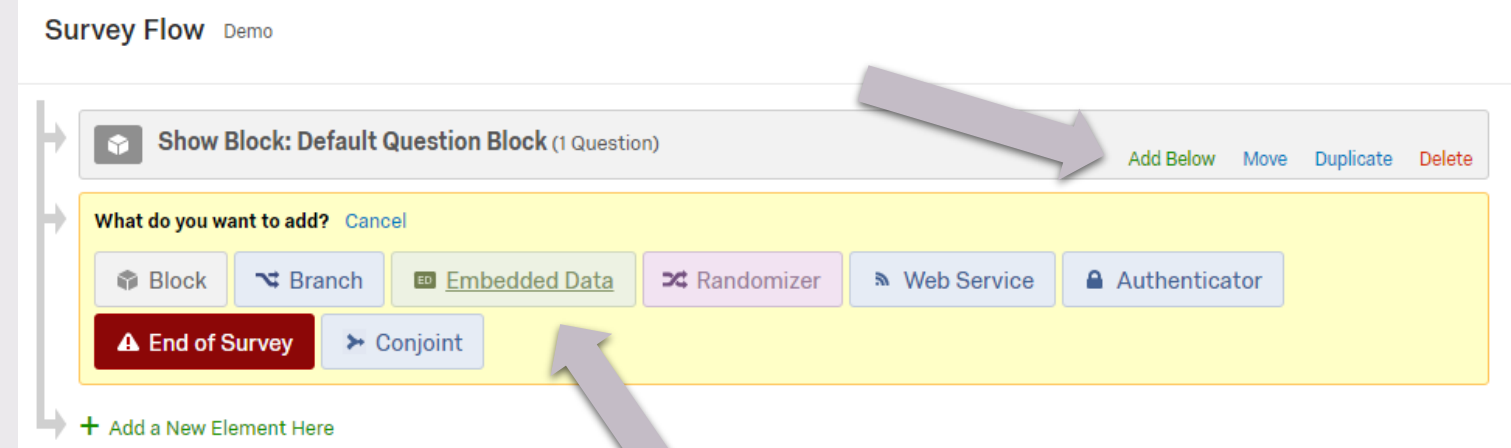
Clear

Cancel

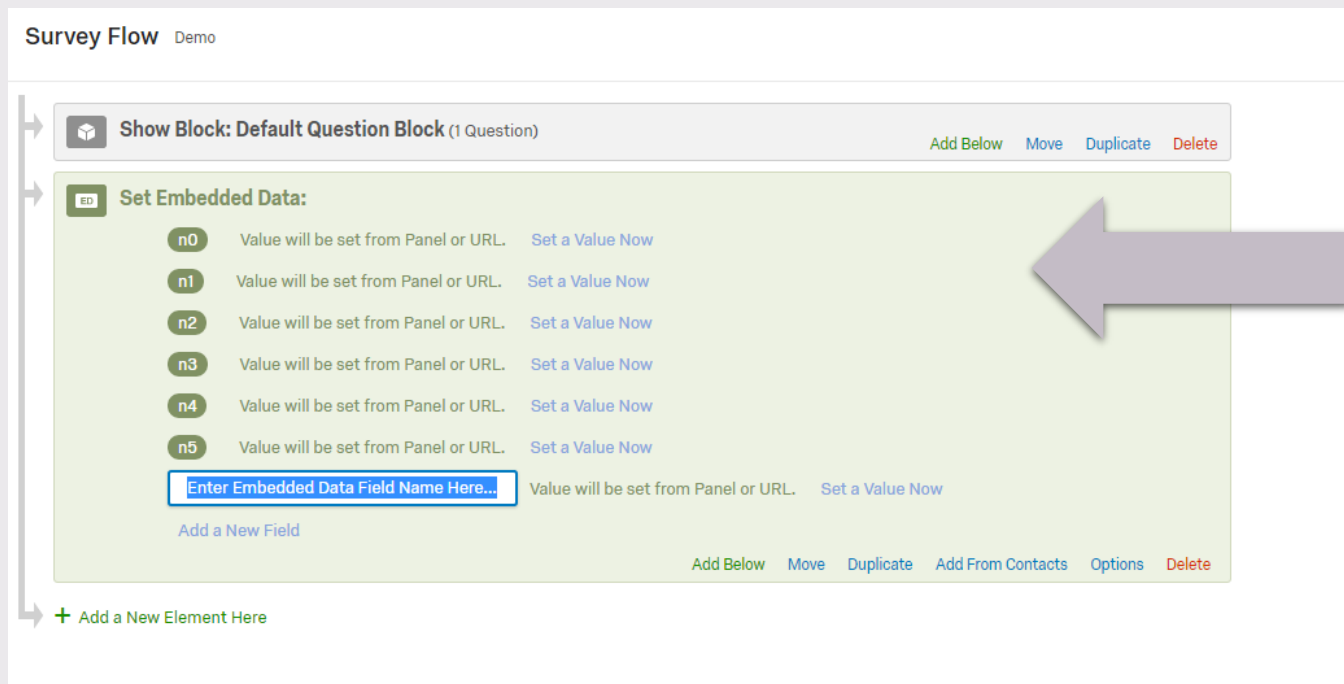
Save



Click on Survey Flow to open the Survey Flow editor in order to add Embedded Data variables and control how the survey unfolds



Add Below will allow you to create an Embedded Data block where you can add the Embedded Data variables for ETK output





**ED** Set Embedded Data:

- n0** Value will be set from Panel or URL. [Set a Value Now](#)
- n1** Value will be set from Panel or URL. [Set a Value Now](#)
- n2** Value will be set from Panel or URL. [Set a Value Now](#)
- n3** Value will be set from Panel or URL. [Set a Value Now](#)
- n4** Value will be set from Panel or URL. [Set a Value Now](#)
- n5** Value will be set from Panel or URL. [Set a Value Now](#)
- n6** Value will be set from Panel or URL. [Set a Value Now](#)
- c0** Value will be set from Panel or URL. [Set a Value Now](#)
- c1** Value will be set from Panel or URL. [Set a Value Now](#)
- c2** Value will be set from Panel or URL. [Set a Value Now](#)
- c3** Value will be set from Panel or URL. [Set a Value Now](#)
- c4** Value will be set from Panel or URL. [Set a Value Now](#)
- c5** Value will be set from Panel or URL. [Set a Value Now](#)
- c6** Value will be set from Panel or URL. [Set a Value Now](#)

[Add a New Field](#)

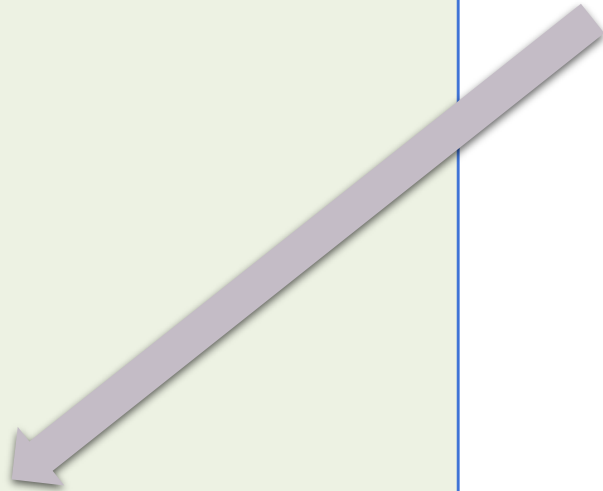
[Add Below](#) [Move](#) [Duplicate](#) [Add From Contacts](#) [Options](#) [Delete](#)

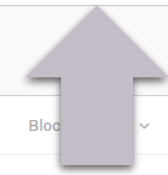
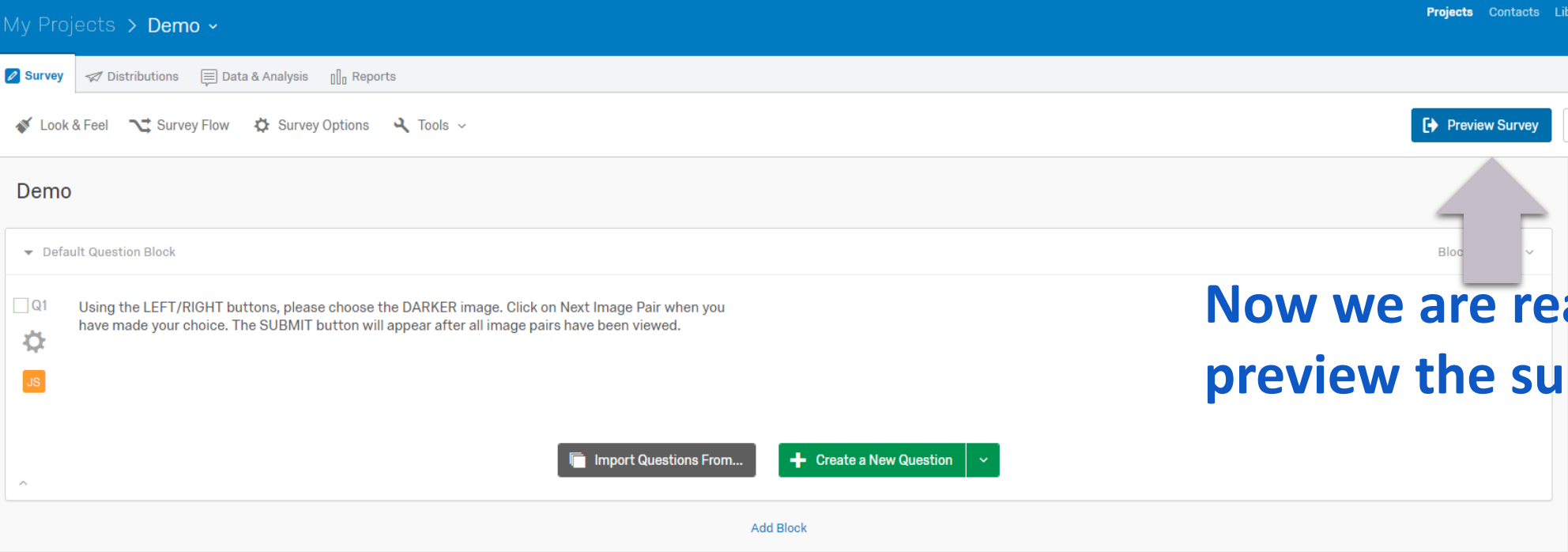
**Show Block: Default Question Block** (1 Question)

[Add Below](#) [Move](#) [Duplicate](#) [Delete](#)

[+ Add a New Element Here](#)

Be sure to move the Embedded Data block ABOVE the Question Block so that the Embedded Data variables are created before the question sets their values.

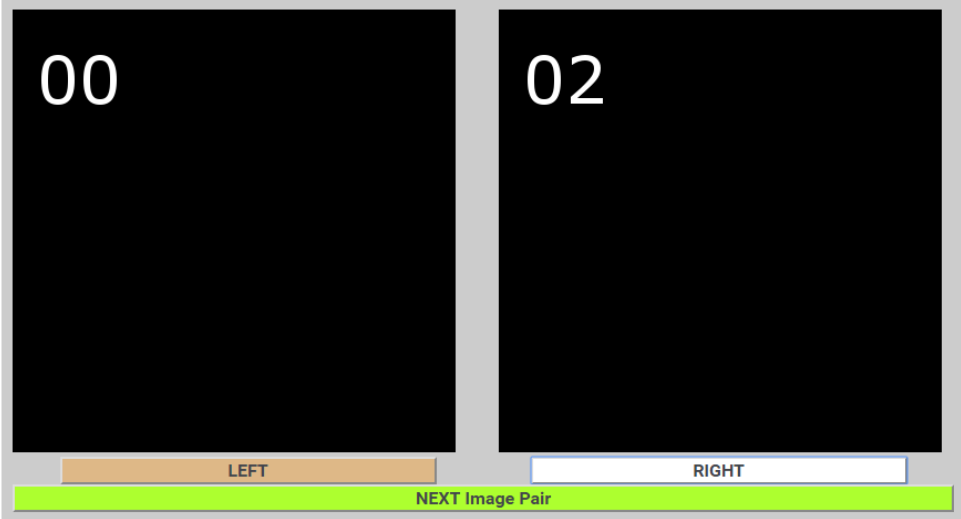




**Now we are ready to preview the survey!**

**Study screenshot: This 2AFC study runs through the trivial example of determining the Value threshold at which study subjects can discriminate between black and grey. Can you tell which is the darker image?**

Using the LEFT/RIGHT buttons, please choose the DARKER image. Click on Next Image Pair when you have made your choice. The SUBMIT button will appear after all image pairs have been viewed.



How do you want to distribute your survey?



Email



Web



Social



Mobile

Send with Qualtrics

Compose Email

Use your own email system

Get a single reusable link

Generate a trackable link for each contact

After building your complete study, select the **Distributions** tab to get the distribution options. Choose **Get a single reusable link**

### Anonymous Survey Link

A reusable link that can be pasted into emails or onto a website, and is unable to track identifying information of respondents.

[https://.qualtrics.com/SE/?SID=SV\\_bxD0w1Mr24ffc1v](https://.qualtrics.com/SE/?SID=SV_bxD0w1Mr24ffc1v)

Customize Link

<https://www.mturk.com/mturk/welcome>

The screenshot shows the Amazon Mechanical Turk website. At the top, there's a navigation bar with 'Your Account', 'HITs', and 'Qualifications'. Below that, a yellow banner states: 'Mechanical Turk is a marketplace for work. We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient. 446,749 HITs available. View them now.' The main content is split into two columns. The left column is titled 'Make Money by working on HITs' and describes HITs as 'Human Intelligence Tasks'. It lists benefits for workers: 'Can work from home', 'Choose your own work hours', and 'Get paid for doing good work'. A flow diagram shows 'Find an interesting task' (with a magnifying glass icon) leading to 'Work' (with a gear icon) leading to 'Earn money' (with a dollar sign icon). A 'Find HITs Now' button is at the bottom. The right column is titled 'Get Results from Mechanical Turk Workers' and describes the process for requesters. It lists benefits: 'Have access to a global, on-demand, 24 x 7 workforce', 'Get thousands of HITs completed in minutes', and 'Pay only when you're satisfied with the results'. A flow diagram shows 'Fund your account' (with a plus sign icon) leading to 'Load your tasks' (with a document icon) leading to 'Get results' (with a star icon). A 'Get Started' button is at the bottom. The footer contains links for 'FAQ', 'Contact Us', 'Careers at Mechanical Turk', 'Developers', 'Press', 'Policies', 'State Licensing', 'Blog', and 'Service Health Dashboard'. It also includes the copyright notice '©2005-2017 Amazon.com, Inc. or its Affiliates' and the Amazon logo.

The Qualtrics URL link can be input into Amazon Mechanical Turk, either directly through Mturk or through TurkPrime, a useful data acquisition interface for Mturk.

<https://www.turkprime.com/>

The screenshot shows the TurkPrime website. At the top, there's a navigation bar with 'SERVICES', 'PRICING', 'DESIGN STUDY', 'DASHBOARD', 'MANAGE WORKERS', and 'SUPPORT'. Below that, a dark banner features the text: 'Recruit Online Participants Simple • Affordable • Powerful Crowd Research'. There are three service cards: 'Toolkit for Amazon Mechanical Turk' (Basic Toolkit Free for Academic Users, M Turk Panels on Your Own Requester Account), 'Lab Service: Mechanical Turk Panels' (Target M Turk Workers by Ethnicity, Age and Custom Traits), and 'Lab Service: Prime Panels' (Recruit from 10 Million Participants by any Demographic). A 'Sign Up' button is centered below the cards. Below the banner, it says 'Over 1000 Labs and Researchers Worldwide Use TurkPrime' and shows logos for Columbia University, Cornell University, Princeton University, Stanford University, and Yale. At the bottom, it displays '415,268,821 Number of Questions Answered'.