

Creating the Electronic Job Skills Voting Form October 2025

This document will provide step-by-step directions on converting the job skills voting Excel spreadsheet into an online form that allows everyone in the room and online to participate in virtual voting. This eliminates the need for time-consuming hand counts of the votes. This new online format still retains the familiar job skills voting format of 4, 3, 2, 1 (4 – Most Important, 1 – Least Important).

Companion video tutorial on YouTube (21 minutes): <https://youtu.be/HfMmiauMGrE>

Things you will need:

- A Google account
- A list of job skills (knowledge and skills) you gathered for your meeting
- A “clear” web browser with no open tabs, as this process will open several new browser tabs. Do not close any of the tabs created by Google as you will need to access them during this process.
- Familiarity with basic Excel functions, formulas, and formatting
- Time

Categories covered:

- I. Creating the Google Form that will collect the votes from your BILT members
- II. Linking the Google Form to the Google Sheet
- III. Formatting the Voting and Tabulation Functions
- IV. Testing the Form

I. Creating the Google Form

Go back to Google Drive; to do so, go up to the tabs in your web browser. Reminder: do not close any of the tabs that Google has opened during this process.

In your web browser click on the “My Drive – Google Drive” tab:

Once there, you will click on the “+New” button on the Google Drive page. Select “Google Forms” if you do not see it listed select “More” and then select “Google Forms.”

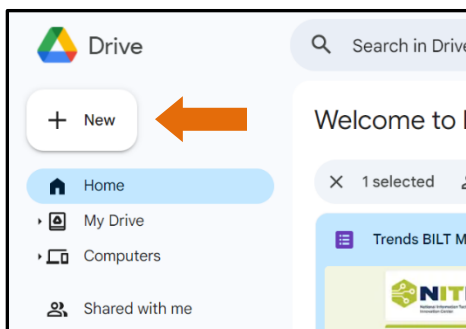


Figure 1: Selecting “New”

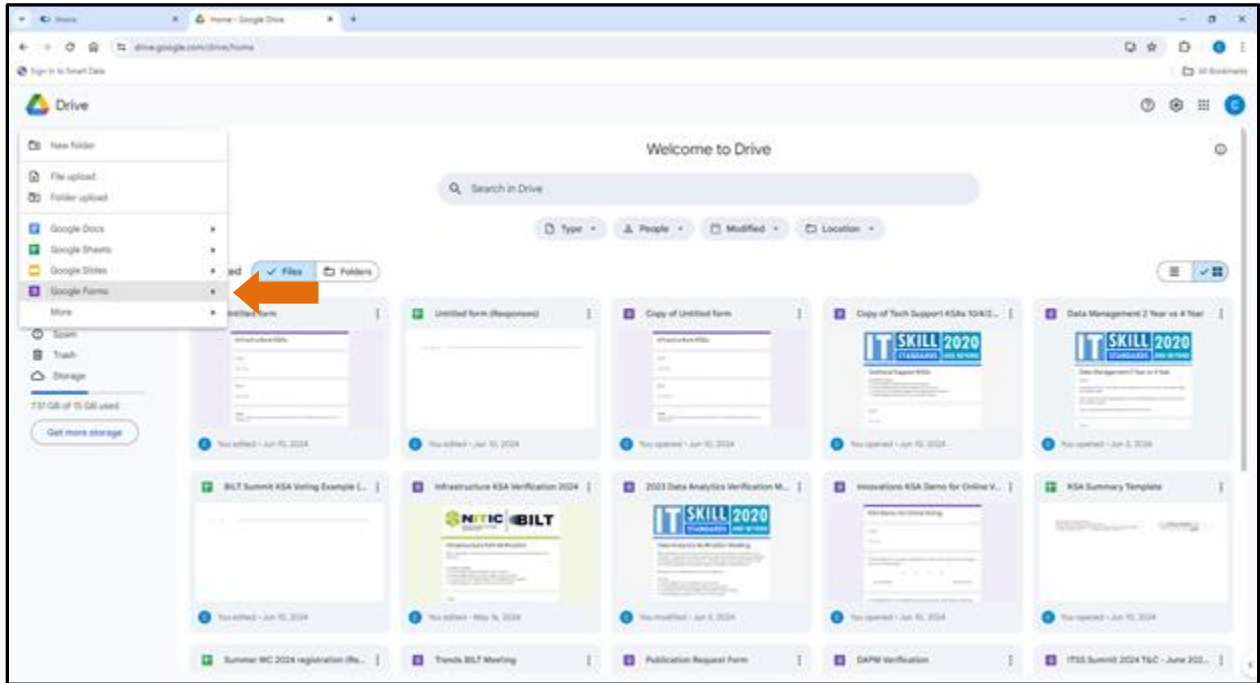


Figure 2: Selecting “Google Forms”

This is the “Untitled form” screen that will pop up:

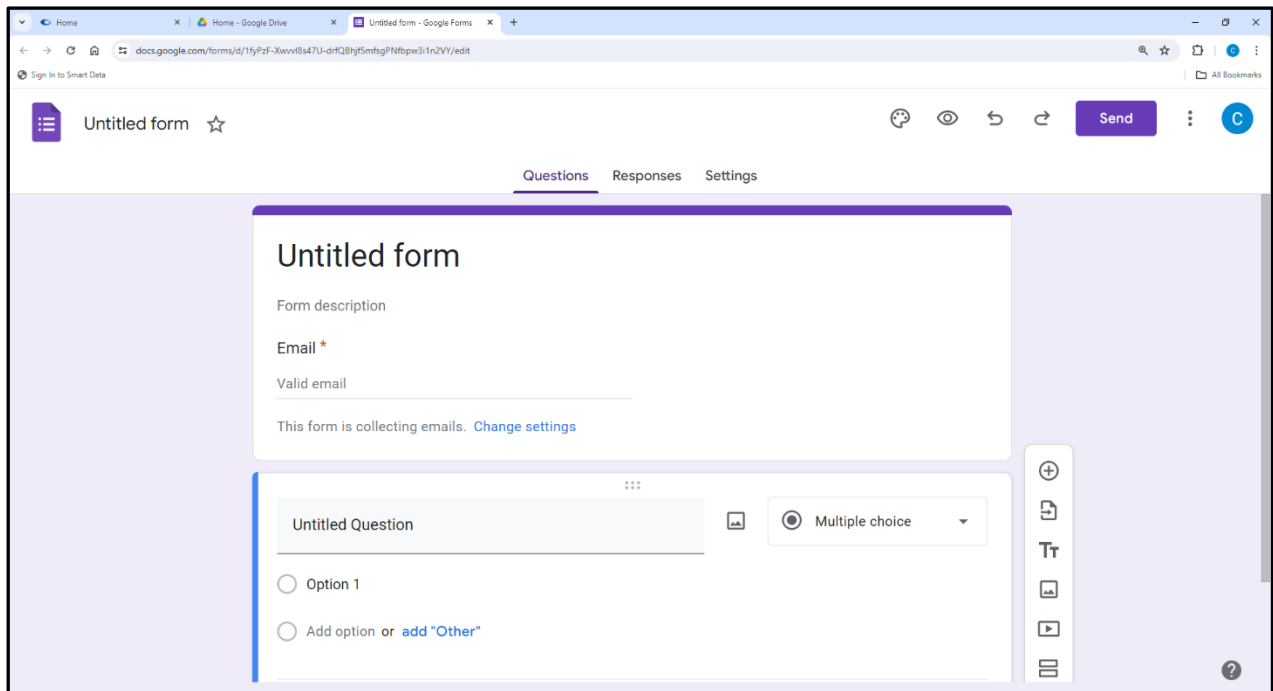


Figure 3: Google’s untitled form

Now you are ready to start building the form, question by question. Each job skill line item from your gathered list will become its own question on this Google Form.

There are three essential pieces that must be included in the Google form for the voting to work properly.

- Collect email address
- Name (should be first question)
- Job skill item numbering

To direct Google to automatically send respondents a copy of their voting responses, follow these simple steps.

1. Go to the Google Form you will be using for voting.
2. Click on the “Settings” tab at the top of the screen.
3. The “Settings” menu will appear. Scroll down to the “Responses” section.
4. In that menu, under “Collect email addresses,” select “Responder input” and under “Send responders a copy of their response,” select “Always.”

This setting change will **automatically e-mail your voters a copy of their voting responses**. Without this, BILT members may not remember their vote during the discussion.

Your changes to the “Settings” menu are saved automatically.

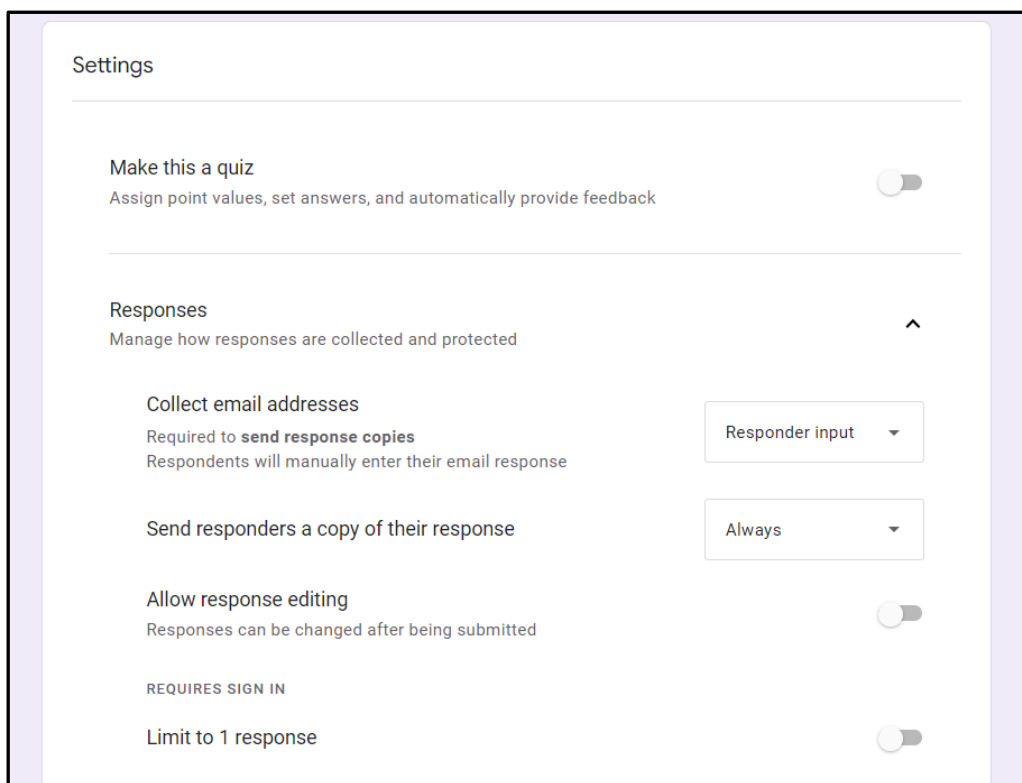

The image shows the 'Settings' menu of a Google Form. The 'Responses' section is expanded, showing options for collecting email addresses and sending response copies. The 'Collect email addresses' dropdown is set to 'Responder input', and the 'Send responders a copy of their response' dropdown is set to 'Always'. Other settings like 'Make this a quiz', 'Allow response editing', and 'Limit to 1 response' are also visible with their respective toggle switches.

Figure 4: Google form settings

Now that you have directed Google to collect email addresses, go back to the “Questions” tab and click on the words “Untitled Form” at the top of the form and rename the form by typing in the name of your survey (for example, “Infrastructure Job Skills”). Be sure you also change the overall document name to match – the document title is in the upper left corner next to the purple “Form” icon.

Now you are ready to start adding the second essential piece to your Google Form. There is a vertical toolbar with 6 icons on it. To add a question, you will click on the top icon in that list . This will add a question below your survey title. In the question box that pops up, you will see a drop-down menu open up on the top right of the question box. To collect the respondents name you will want to click the down arrow and select “short answer” as the question type. Now on the right side of the question box in the line that says question type “Name”.

In this form, the only required information is an email address (which you set up in the previous step using the “Setting” menu). You do not want to require answers as the BILT member may not want to provide a response for every item in the Google Form. Keep the “Required” toggle turned off.

Next, you will insert a section title. This is the third icon (double Ts) on the vertical toolbar next to your question (the blue arrow below shows which icon to click) in between your knowledge and skills sections. This will break up the form and help the respondent stay focused.

Along with the title you will also create a description to help define the two sections.

- **Knowledge** - Focuses on the understanding of concepts. It is theoretical and not practical. An individual may have an understanding of a topic or tool or some textbook knowledge of it but have no experience applying it.
- **Skills** - The capabilities or proficiencies developed through training or hands-on experience. Skills are the practical application of theoretical knowledge. Someone can take a course on investing in financial futures, and therefore has knowledge of it. But getting experience in trading these instruments adds skills.

NITIC considers **Abilities** (defined as innate traits or talents a person brings to a task or situation) to be non-technical “soft skills” or “employability skills.” As such, NITIC’s BILT prioritizes Abilities separate from technical Knowledge and Skills.

This is what your form should look like to this point. You have the survey title, the required email field, then an optional question for the respondent’s name, and the first section heading with title and description.

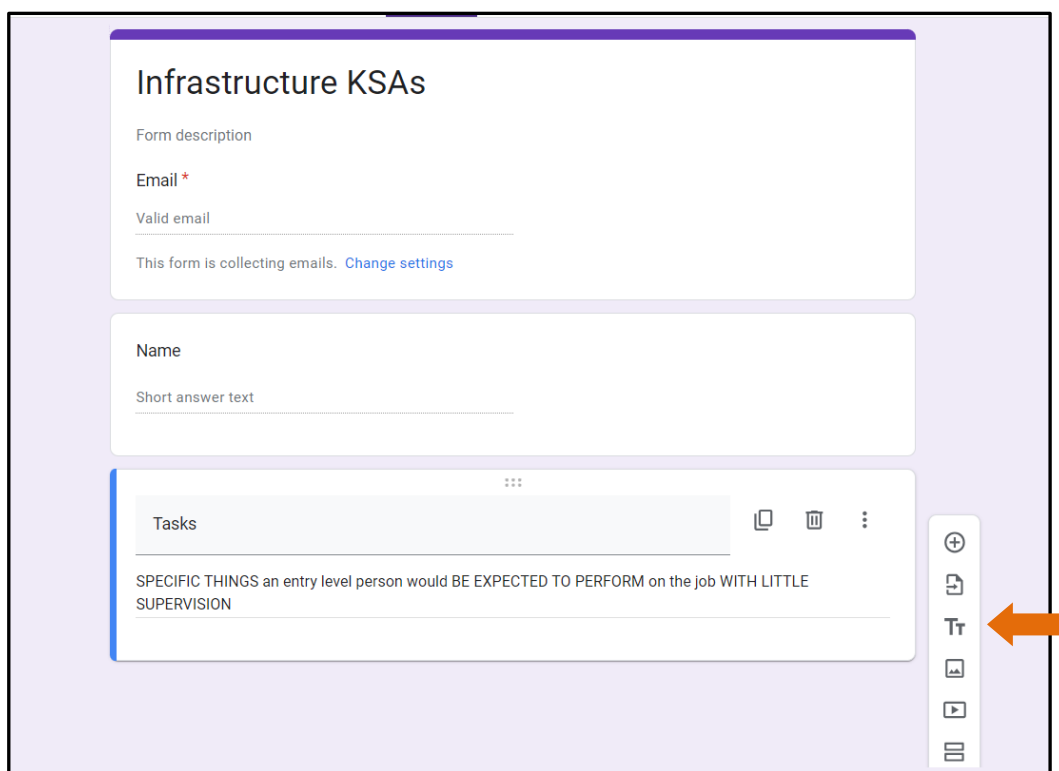

The image shows a Google Form titled "Infrastructure KSAs". Below the title is a "Form description" field. Then there is an "Email *" field with a red asterisk indicating it is required, and a "Valid email" label. Below that is a "Name" field with a "Short answer text" label. At the bottom, there is a section titled "Tasks" with a description: "SPECIFIC THINGS an entry level person would BE EXPECTED TO PERFORM on the job WITH LITTLE SUPERVISION". On the right side of the form, there is a vertical toolbar with icons for adding questions, sections, and other elements. An orange arrow points to the "Tr" (Section) icon in the toolbar.

Figure 5: How your Google Form looks before adding questions

Now we can move to the questions.

Each question for your job skill items will look like the question in the image below. Click the  icon again to add a question. Choose “Linear scale” for your question type. As mentioned, your scale will use the standard job skill voting format: 1 – 4 (1 – Least Important, 4 – Most Important). You may need to adjust the scale with the pull-down menus so the question offers only four choices. It is also important that you annotate your items with letter and numbers, K-knowledge (example K-1); S-Skill (example S-1). If you do not have this piece the voting formula will not work. Keep the “Required” toggle turned off.

There is no way to import the contents from your job skill list, unless you are pulling from a previously created survey. You will have to input each item on the list individually; you can either type them in or you can copy and paste them from your collected list.

To add the next question, simply click the plus-sign icon shown below by the red arrow to continue to build out your Google Form:

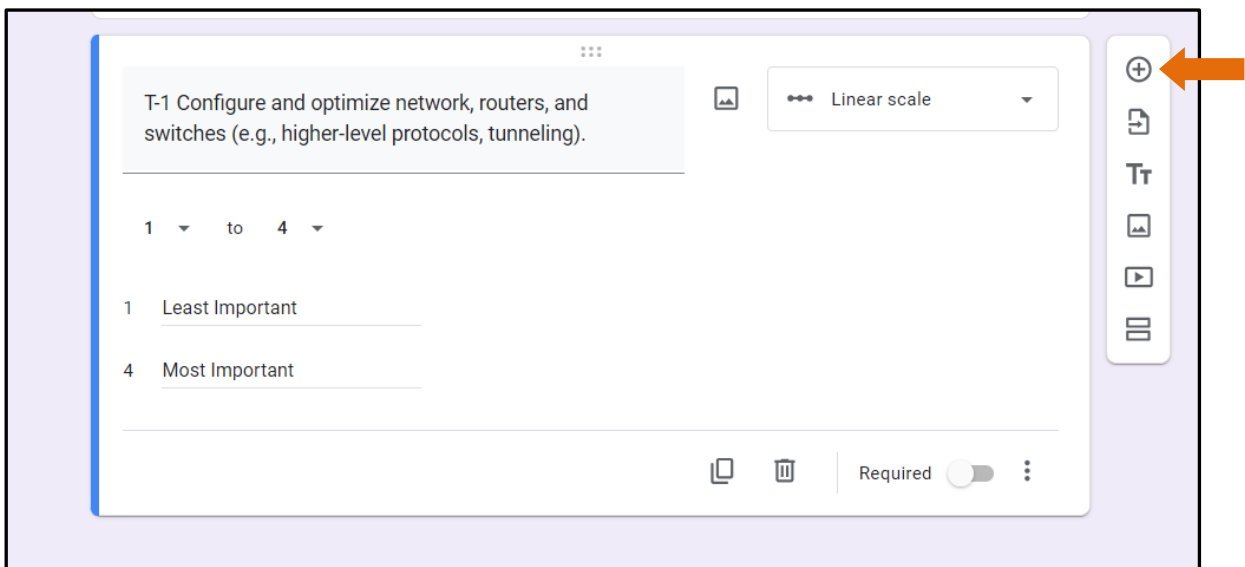

The image shows a Google Form editor interface. A question is being edited: "T-1 Configure and optimize network, routers, and switches (e.g., higher-level protocols, tunneling)". The question type is set to "Linear scale". Below the question text, there are two dropdown menus: the first is set to "1" and the second is set to "4", with the text "to" between them. Below these, there are two input fields: the first contains "Least Important" and the second contains "Most Important". At the bottom right of the question window, there is a "Required" toggle switch which is currently turned off. On the right side of the question window, there is a vertical toolbar with several icons. A red arrow points to the top icon in this toolbar, which is a plus sign inside a circle, used to add a new question.

Figure 6: Creating the question answers via linear scale

Note also that you can click on the  icon to duplicate at the bottom of the question window to duplicate the question, which can make this process go faster. All you'd have to do for the duplicate question is change the job skill description.

You can rename your form for easy finding in your Google Drive by clicking on “Untitled form” in top left corner of the tab. If you previously titled your survey, when you click on the “Untitled form” it will automatically update to the title you typed at the top of the form.

There are also ways to customize the form's style, including changing the colors and adding a logo. To make those adjustments, click on the painter's palette at the top right.

II. Linking the Google Form to the Google Sheet

Now it's time to connect the voting results of the Google Form to the Google Sheet.

Inside the Google Form page, click on the "Responses" tab in the Form menu header (it's to the right of the "Questions" tab you're working in now), then click on the three vertical dots. From there, click "Select response destination."

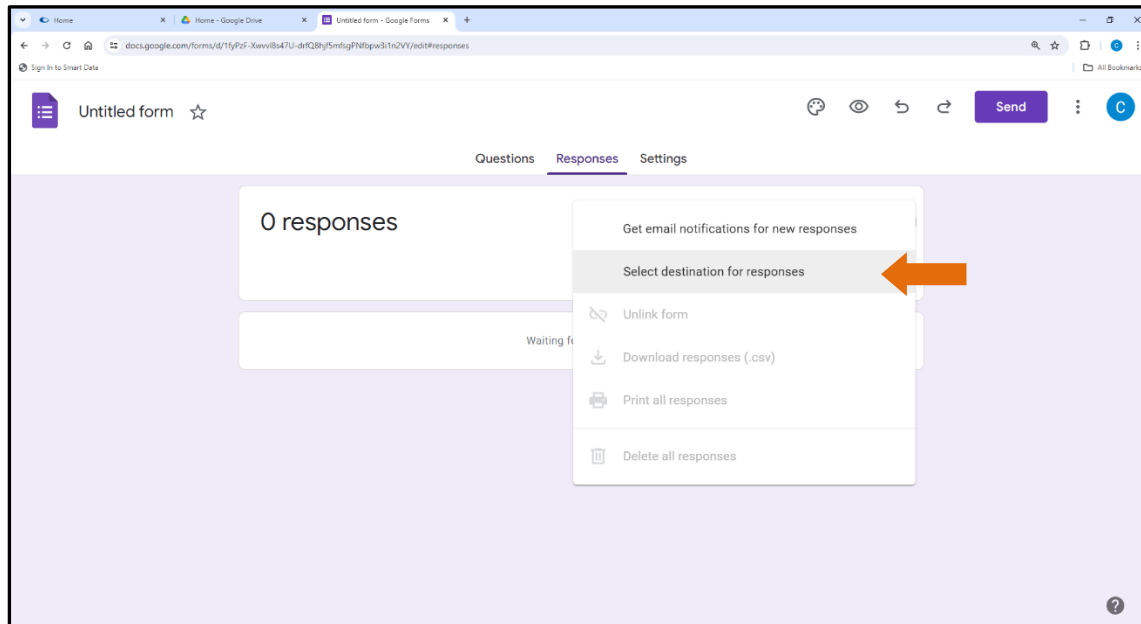


Figure 7: Select response destination

In the new "Select response destination" window click on "Create a new spreadsheet," then click "Create."

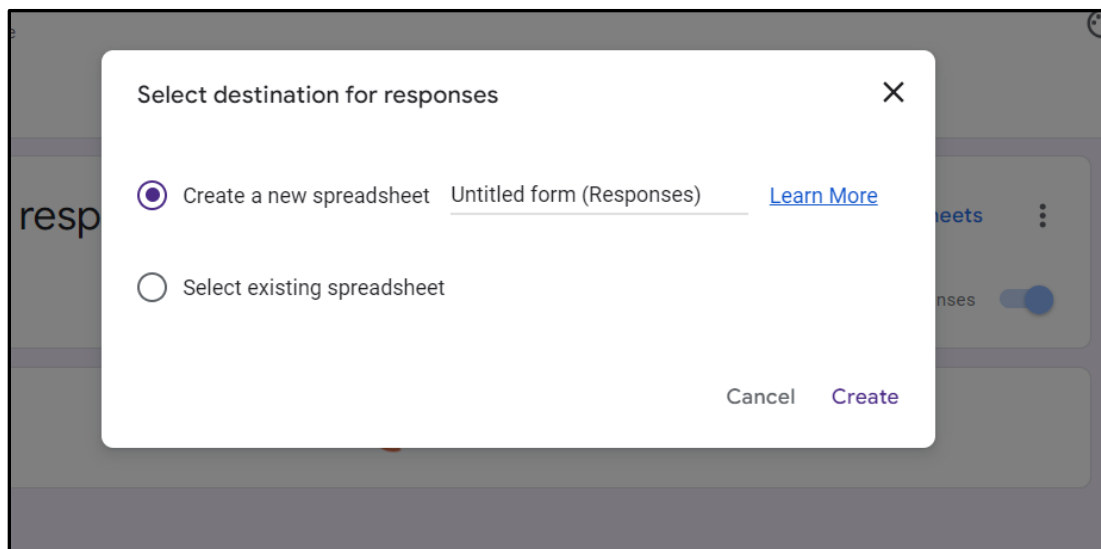


Figure 8: Create a new spreadsheet

Messages will appear in the bottom left corner, notifying you that the form and the spreadsheet are linked.

Next, go back to “My Drive,” under files, you will find a “Google Sheet” titled the same thing as your survey, with the word “(Responses)” added. Double-click on it to open it.

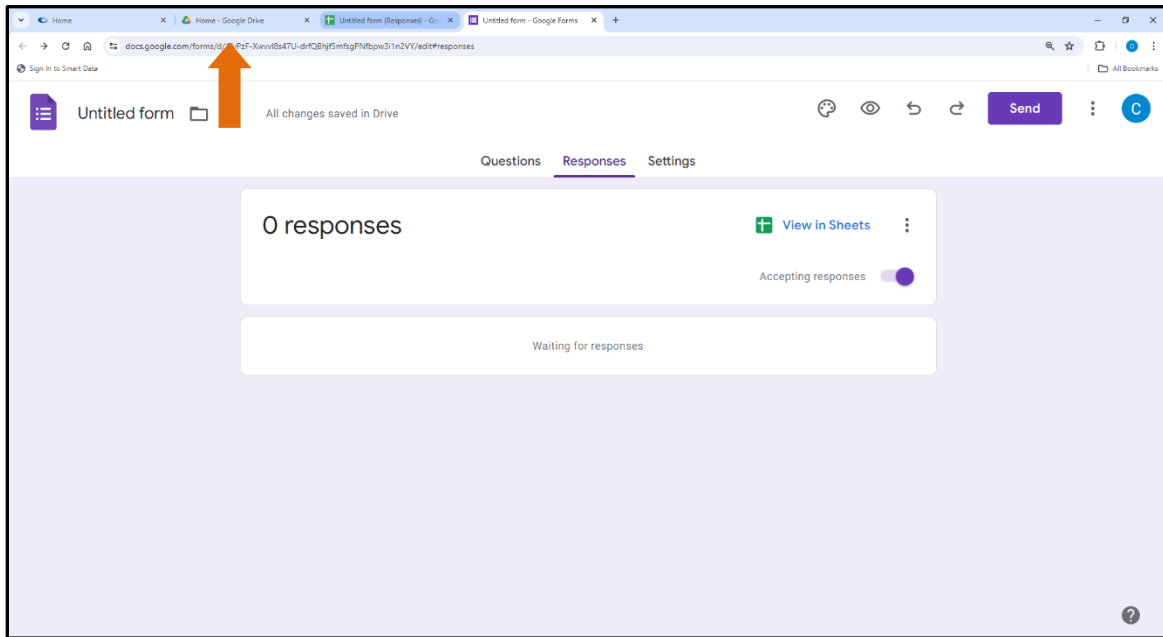


Figure 9: Opening the new Google sheet

Now you will notice there is a tab on your Google Sheet titled “Form Responses 1.”

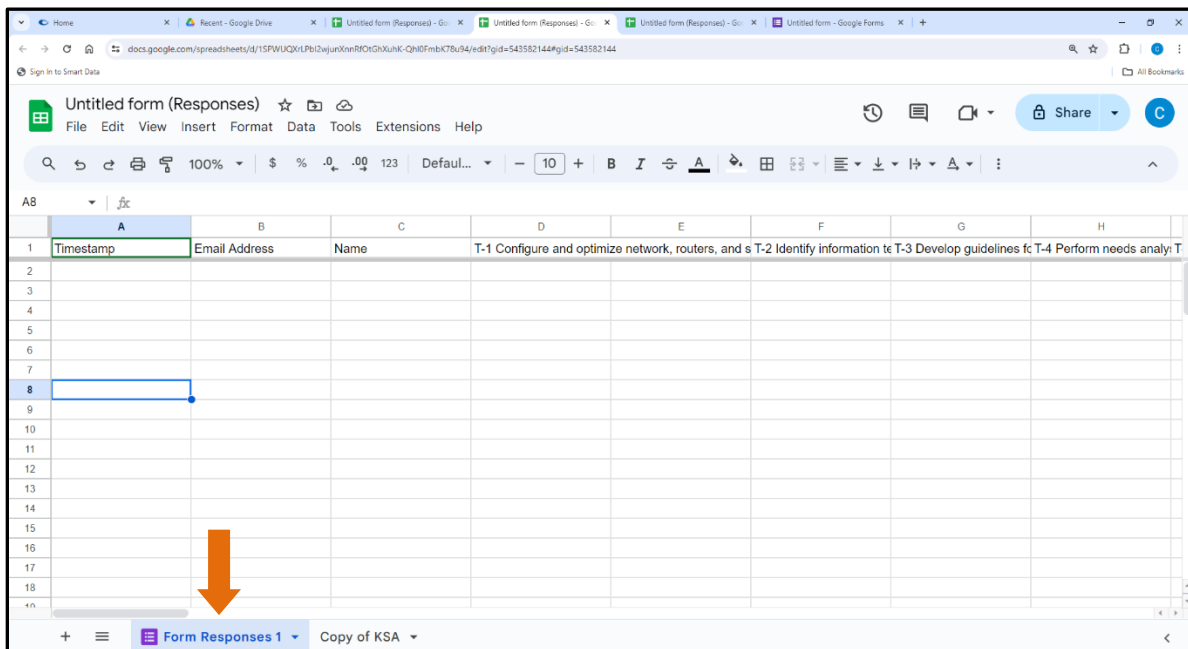


Figure 10: Form Responses tab

Click on the “Form Responses 1” tab and you should see you questions from your Google Form across row 1.

III. Configuring the Vote Tabulation

To set up job skills sheet with the vote tally go to the Google Sheet “KSA Summary Template” at the link below. There are two tabs in that Google Sheet. “KSA” is the template you will copy. The other “Instructions for use” tab provides additional directions for how to use the template.

https://docs.google.com/spreadsheets/d/1v7CoXaG7HmfnWcl_6H5RjRhHKGoMu6mhcPnIewXgzYE/edit?usp=sharing

Shorter URL: <https://tinyurl.com/bilt6steps>

Please note: when this special Google Sheet was created, the collection of prioritized job skills was called “KSAs” for knowledge, skills, and abilities. Although NITIC now prioritizes knowledge and skills separate from abilities, the name of this file has not been changed.

Here are the six steps to follow:

1. Using the link above, open this “KSA Summary Template” Google Sheet. This will open as a new tab in your browser. Make sure that you click on the tab labeled “KSA.” Right-click the “KSA” sheet tab, select “Copy to” and “Existing spreadsheet,” then select the Google Sheet file created in Section 1 and click select. Then click on the Google Sheet browser tab and note the added "Copy of KSA" tab next to your “Form Responses 1” tab.

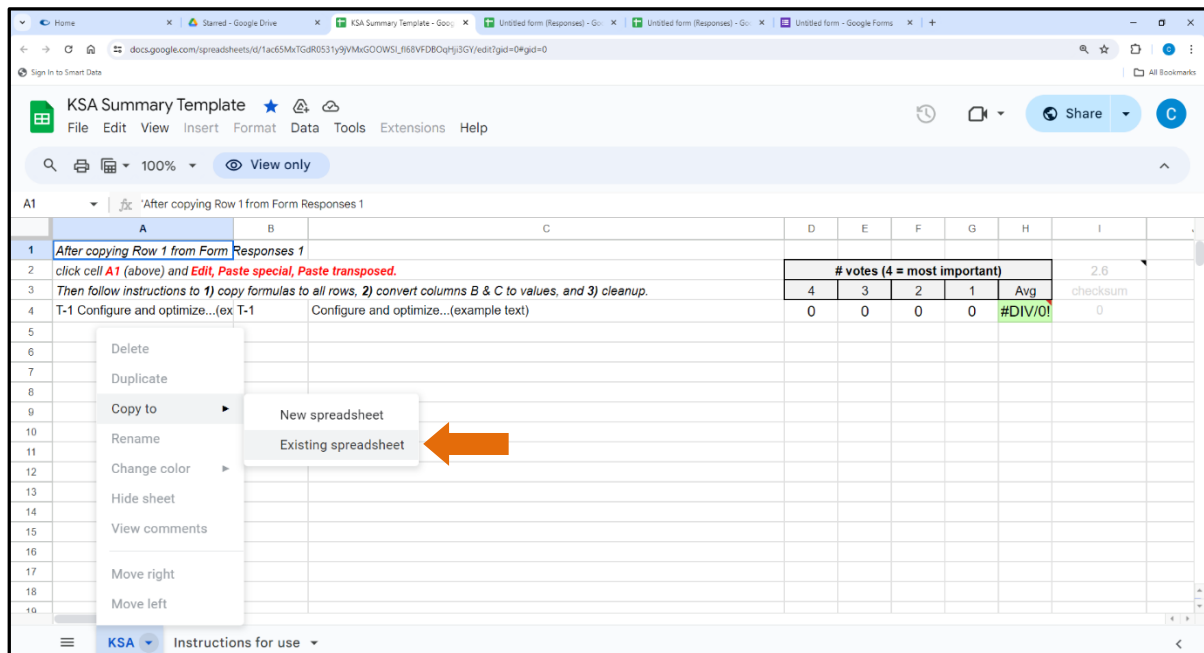


Figure 11: Using an existing spreadsheet

2. In the “Form Responses 1” tab of your Google Sheet (which in our example we’re calling “Infrastructure KSAs”), select all of row 1 by clicking on the number 1. The entire row should be highlighted. Right click on the highlighted row 1 and select Copy.

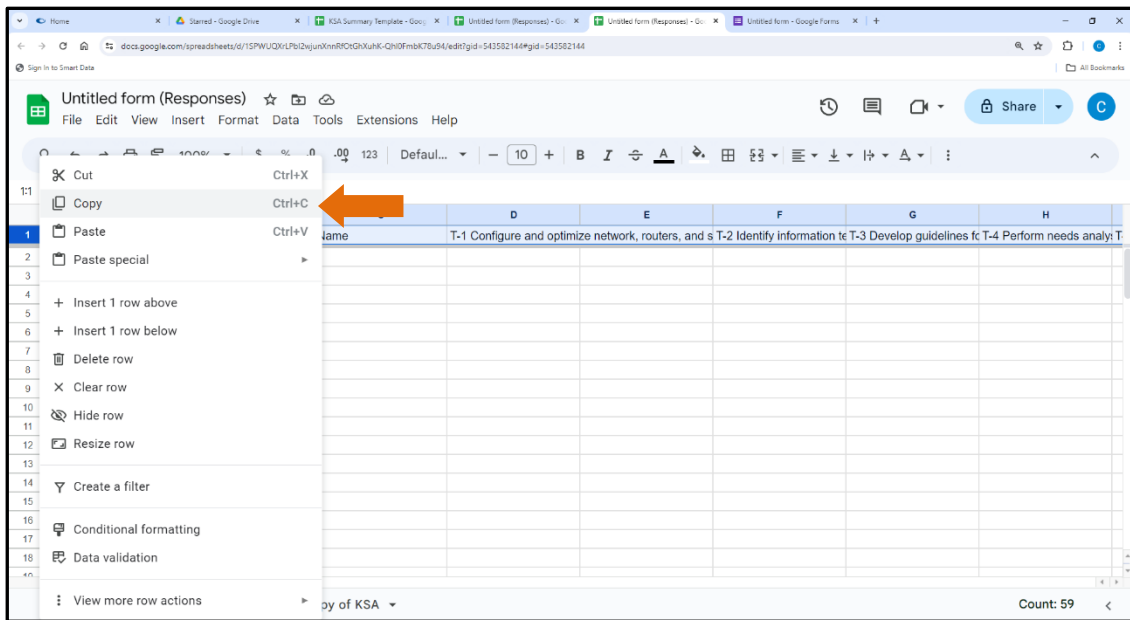


Figure 12: Copying the row

3. In the "Copy of KSA" tab, select cell A1, right-click to open up a menu. Select "Paste special" and then select "Paste transposed."

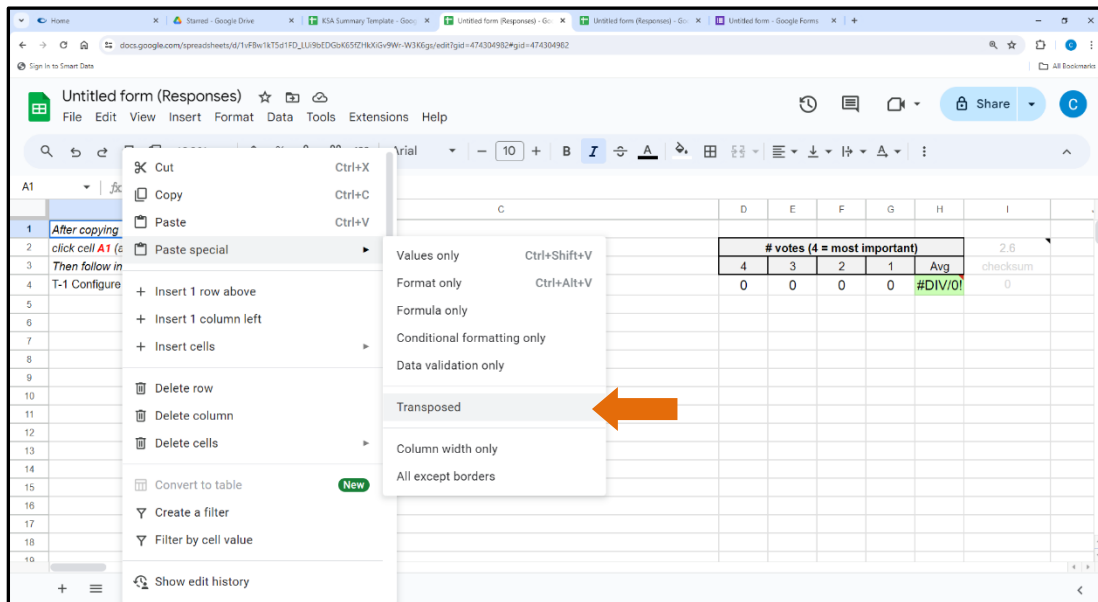


Figure 13: Pasting the row via "Paste transposed"

4. Select cells B4 thru I4, double click the tiny blue square in the lower right corner of the selected cells (this tiny square will automatically replicate the formula all the way down to the last row).

B4:I4 = if(not(iserror(find(" ",A4))),if(left(A4,5)="Cloud",left(A4,find(" ",A4,7)-1),left(A4,find(" ",A4)-1)), A4)									
1	Timestamp								
2	Email Address								
3	Name								
4	T-1 Configure and optimize netw	T-1	Configure and optimize network, routers, and switches (e.g., higher-level protocols, tunneling).						
5									
6									
7									

Figure 14: Clicking the tiny blue square

5. Select columns B & C, right-click on the selected columns, and select “Copy.” Then you will right-click again in the highlighted selected columns, select “Paste special,” and then select “Paste values only.”

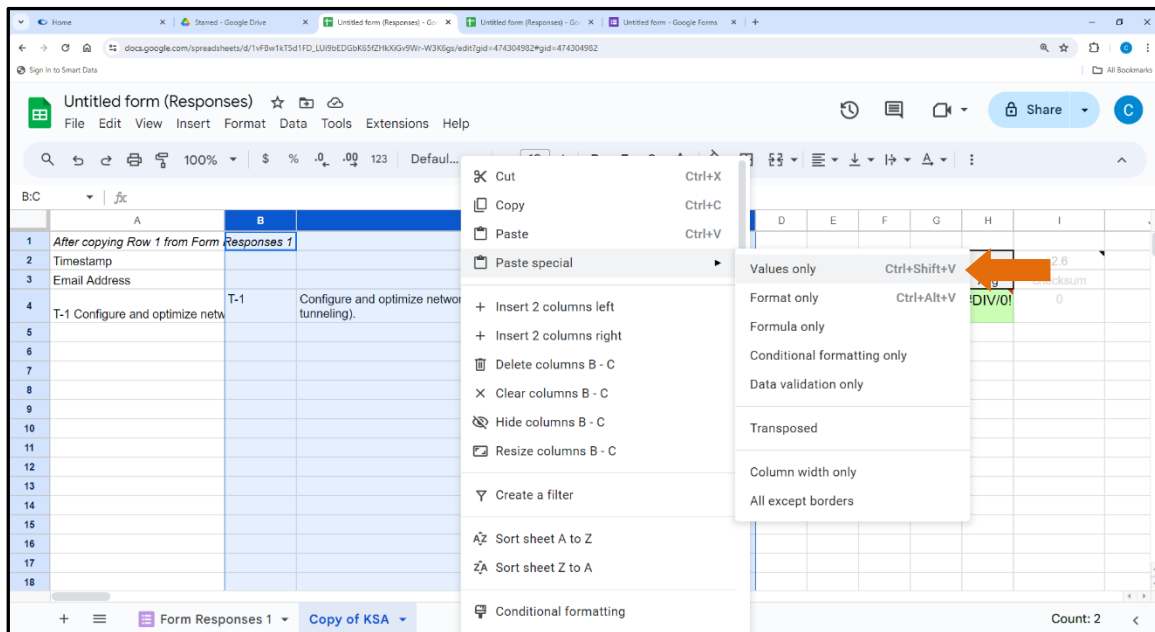


Figure 15: Paste values only

6. Remove column A by selecting all of column A right click on the highlighted column, right click and select delete column.

When you are finished it should look like the screenshot below.

The screenshot shows the final Google Sheet with columns A through J. The table contains the following data:

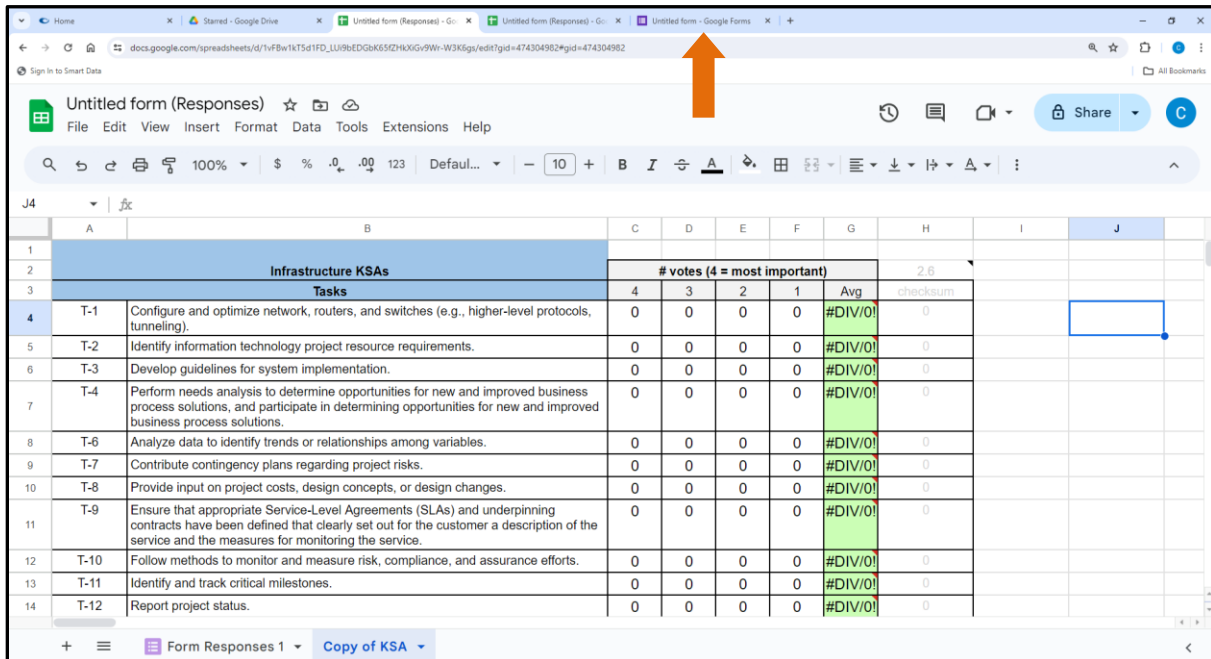
	A	B	C	D	E	F	G	H	I	J
1										
2										
3										
4	T-1	Configure and optimize network, routers, and switches (e.g., higher-level protocols, tunneling).	0	0	0	0	#DIV/0!	0		
5	T-2	Identify information technology project resource requirements.	0	0	0	0	#DIV/0!	0		
6	T-3	Develop guidelines for system implementation.	0	0	0	0	#DIV/0!	0		
7	T-4	Perform needs analysis to determine opportunities for new and improved business process solutions, and participate in determining opportunities for new and improved business process solutions.	0	0	0	0	#DIV/0!	0		
8	T-6	Analyze data to identify trends or relationships among variables.	0	0	0	0	#DIV/0!	0		
9	T-7	Contribute contingency plans regarding project risks.	0	0	0	0	#DIV/0!	0		
10	T-8	Provide input on project costs, design concepts, or design changes.	0	0	0	0	#DIV/0!	0		
11	T-9	Ensure that appropriate Service-Level Agreements (SLAs) and underpinning contracts have been defined that clearly set out for the customer a description of the service and the measures for monitoring the service.	0	0	0	0	#DIV/0!	0		
12	T-10	Follow methods to monitor and measure risk, compliance, and assurance efforts.	0	0	0	0	#DIV/0!	0		
13	T-11	Identify and track critical milestones.	0	0	0	0	#DIV/0!	0		
14	T-12	Report project status.	0	0	0	0	#DIV/0!	0		

Figure 16: How your final Google sheet should look

IV. Testing the Form

Now you are ready to have someone test the Google form. **Thorough testing is strongly encouraged before you use the Google voting system with your BILT.**

Go up to the tabs in your web browser and click on Google Form:



The screenshot shows a Google Form titled "Untitled form (Responses)" with a table of tasks and their scores. The table has columns for task ID, task description, and scores for four different categories (4, 3, 2, 1) and an average score. The tasks are listed in rows 4 through 14. The average scores are all 0, and the checksum is 2.6. An orange arrow points to the "Untitled form - Google Forms" tab in the browser.

Infrastructure KSAs		# votes (4 = most important)				Avg	checksum
Tasks		4	3	2	1		
T-1	Configure and optimize network, routers, and switches (e.g., higher-level protocols, tunneling).	0	0	0	0	#DIV/0!	0
T-2	Identify information technology project resource requirements.	0	0	0	0	#DIV/0!	0
T-3	Develop guidelines for system implementation.	0	0	0	0	#DIV/0!	0
T-4	Perform needs analysis to determine opportunities for new and improved business process solutions, and participate in determining opportunities for new and improved business process solutions.	0	0	0	0	#DIV/0!	0
T-6	Analyze data to identify trends or relationships among variables.	0	0	0	0	#DIV/0!	0
T-7	Contribute contingency plans regarding project risks.	0	0	0	0	#DIV/0!	0
T-8	Provide input on project costs, design concepts, or design changes.	0	0	0	0	#DIV/0!	0
T-9	Ensure that appropriate Service-Level Agreements (SLAs) and underpinning contracts have been defined that clearly set out for the customer a description of the service and the measures for monitoring the service.	0	0	0	0	#DIV/0!	0
T-10	Follow methods to monitor and measure risk, compliance, and assurance efforts.	0	0	0	0	#DIV/0!	0
T-11	Identify and track critical milestones.	0	0	0	0	#DIV/0!	0
T-12	Report project status.	0	0	0	0	#DIV/0!	0

Figure 17: Testing the Google form

Click on the purple "Publish" button at the top right of the screen:

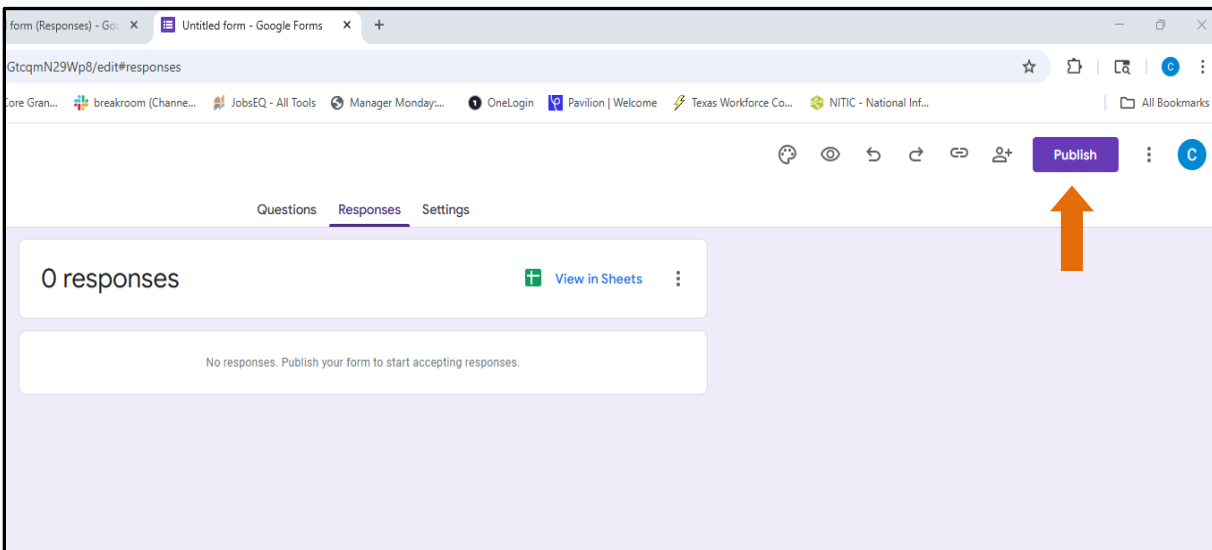


Figure 18: The publish button

The following box will pop up. It must say “Anyone with the link” – if it does not, then it will not let people respond to the survey without requesting access. Once the pop up says “Anyone with the link” then click “Publish.”

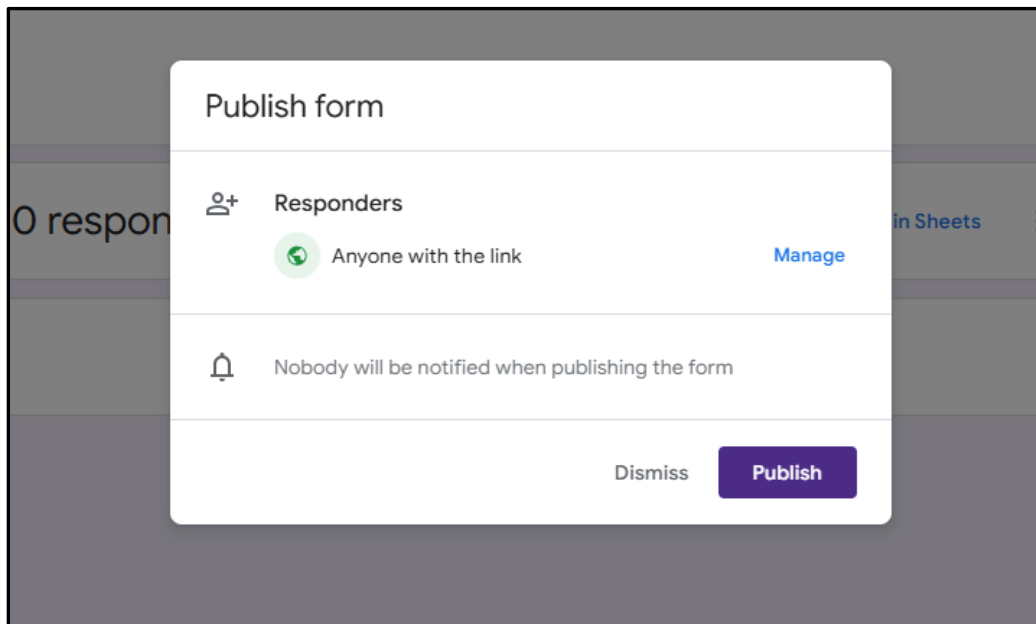


Figure 19: Publishing the form

After you click Publish, a new box will appear. Ensure you check the 'Shorten URL' box.

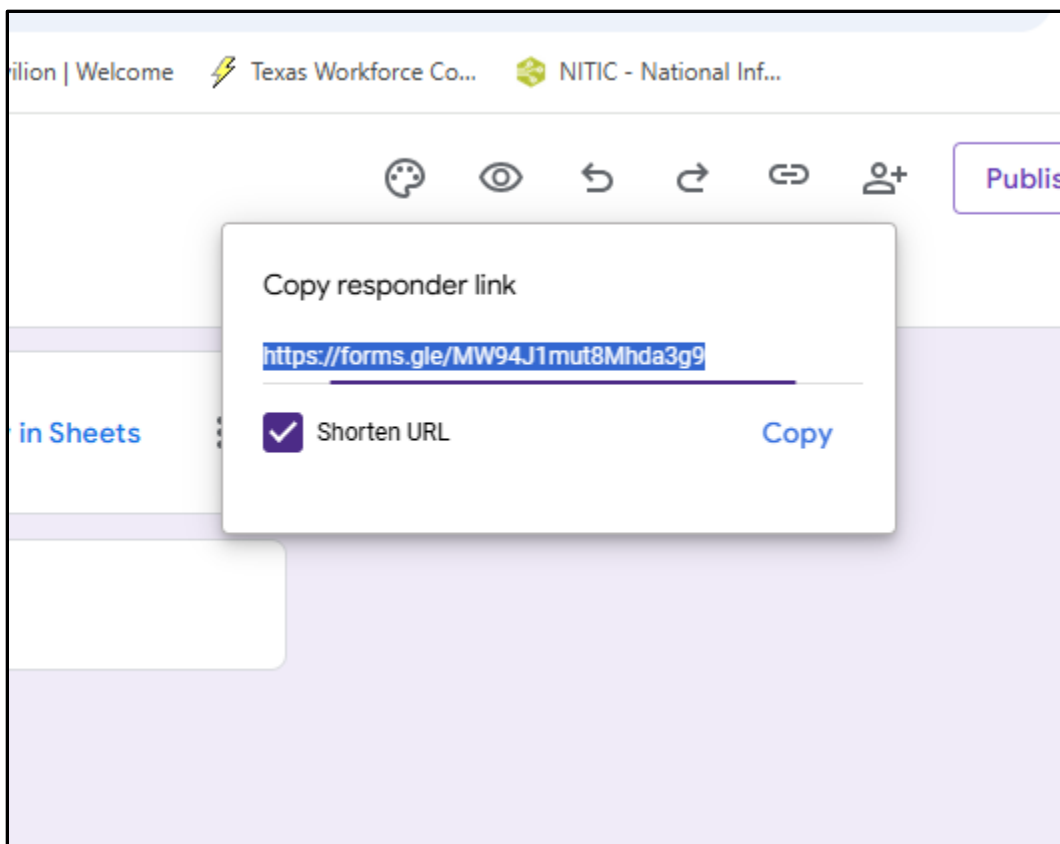


Figure 20: Copying a Google form link

Send that form link URL to someone else and ask them to use it in a new browser and complete the Google Form:

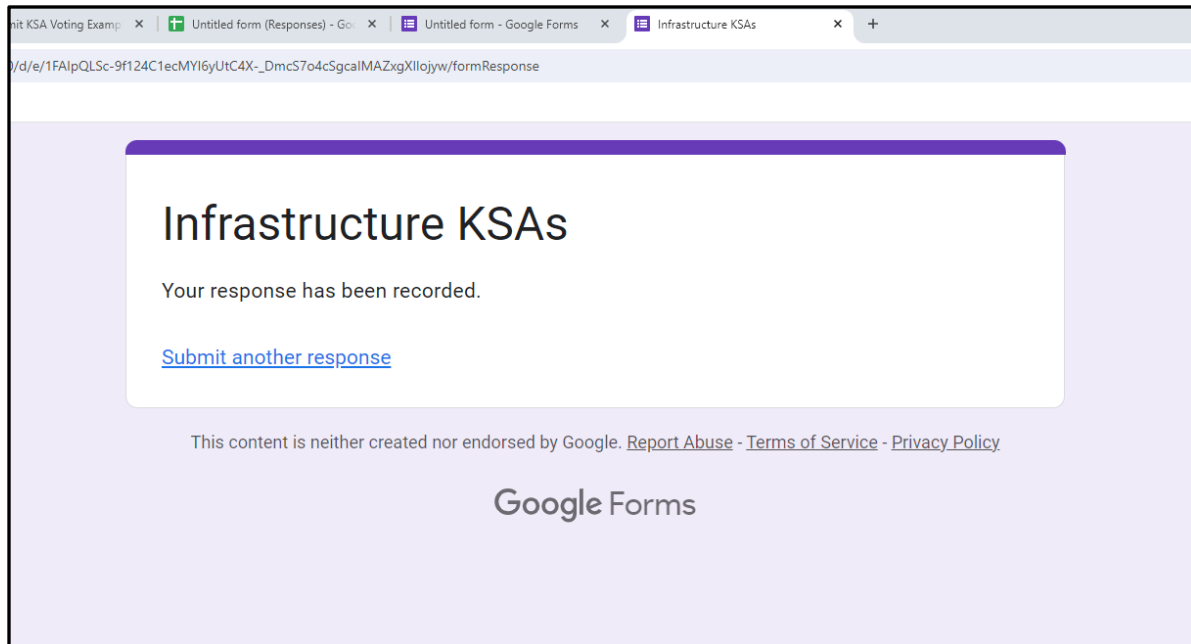


Figure 21: The final “your response has been submitted” form screen

Now go back to “Infrastructure KSAs” Google Sheet:

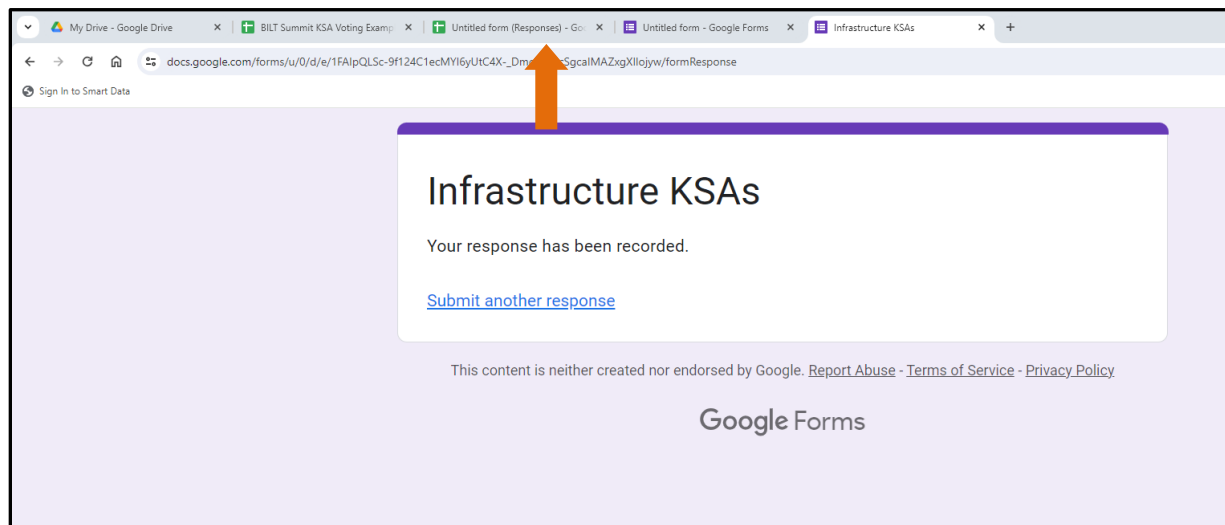


Figure 22: Look for the results in the Google sheet

If done correctly, you should see the test votes show up in your form:

	A	B	C	D	E	F	G	H	I	J	K
1											
2		Infrastructure KSAs	# votes (4 = most important)					2.6			
3		Tasks	4	3	2	1	Avg	checksum			
4	T-1	Configure and optimize network, routers, and switches (e.g., higher-level protocols, tunneling).	0	0	0	1	1.00	1			
5	T-2	Identify information technology project resource requirements.	0	0	1	0	2.00	1			
6	T-3	Develop guidelines for system implementation.	0	1	0	0	3.00	1			
7	T-4	Perform needs analysis to determine opportunities for new and improved business process solutions, and participate in determining opportunities for new and improved business process solutions.	1	0	0	0	4.00	1			
8	T-6	Analyze data to identify trends or relationships among variables.	0	1	0	0	3.00	1			
9	T-7	Contribute contingency plans regarding project risks.	0	0	1	0	2.00	1			
10	T-8	Provide input on project costs, design concepts, or design changes.	0	0	0	1	1.00	1			
11	T-9	Ensure that appropriate Service-Level Agreements (SLAs) and underpinning contracts have been defined that clearly set out for the customer a description of the service and the measures for monitoring the service.	0	0	1	0	2.00	1			
12	T-10	Follow methods to monitor and measure risk, compliance, and assurance efforts.	0	1	0	0	3.00	1			
13	T-11	Identify and track critical milestones.	1	0	0	0	4.00	1			
14	T-12	Report project status.	0	1	0	0	3.00	1			

Figure 23: Test votes appear on the Google sheet. Cell H2 contains the sheet's vote 2.6 cutoff average.

If that is reflecting correctly, then congratulations - you have finished!

BUT... if the numbers don't look right, go back and ensure you followed the six steps in Section 3 for using the template.

VI. Additional elements

Re-voting

To enable re-voting, follow these simple steps.

1. Go to the Google Form you will be using for voting.
2. Click on the “Settings” tab at the top of the screen, scroll down to the “Responses” section.
3. Turn on the “Allow response editing” toggle. This will **allow your voters to change their vote**.
The automatic email they receive with their votes will include a link which they can use to re-open the form and cast a new vote. They need only recast the vote(s) they want to change. Any “blank” choices will remain unchanged – that is, their first votes will remain as is. Respondents can re-vote as many times as they’d like.

Your changes to “Settings” will be saved automatically.

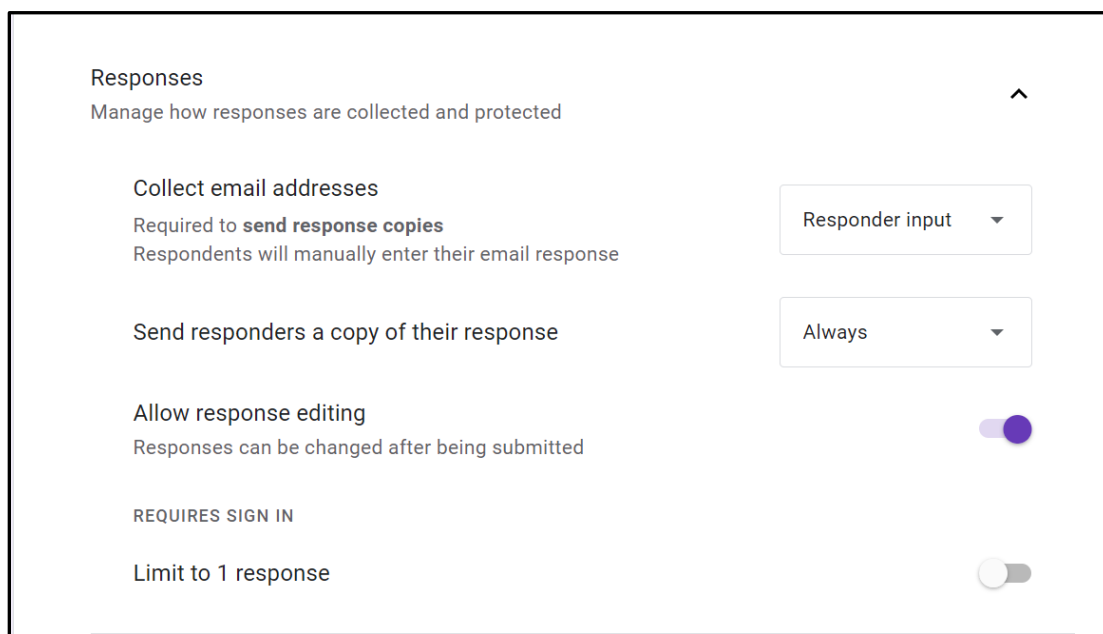
The image shows the 'Responses' settings panel in Google Forms. At the top, it says 'Responses' and 'Manage how responses are collected and protected'. Below this, there are several settings: 'Collect email addresses' with a dropdown menu set to 'Responder input'; 'Send responders a copy of their response' with a dropdown menu set to 'Always'; 'Allow response editing' with a toggle switch turned on; 'REQUIRES SIGN IN' with a toggle switch turned on; and 'Limit to 1 response' with a toggle switch turned off.

Figure 24: Allowing voters to receive an email “receipt”

Please note: Google Sheets does not keep a record of the employer’s original votes – new votes overwrite the original vote. In other words, while the Google Sheet will include a notation to let you know that a vote has been changed, you will not be able to see the original vote.

If you want to compare original votes to the changed votes, you’ll need to save a copy of the results before re-votes.

**** NOTE:** If you do not make this “Edit after submit” settings change, do not use the Google form for a re-vote. Instead, conduct the re-vote in the room with hand-counting and make a manual adjustment to the job skills spreadsheet. Until that “Edit after submit” choice is selected, the Google Sheet will record every vote – that is, if a BILT member votes twice, both votes will be recorded and affect your average.

Amending an Existing Google Sheet and Google Form

The best way to amend a Google Sheet and Google Form is to copy the existing Google Form. If you copy the Google Sheet linked to the Google Form, it will copy both and link them, but it is hard to make modifications. For this reason, it's better to copy the Google Form.

1. Right-click on the Google Form you want to copy, then select “Make a copy” from the menu.

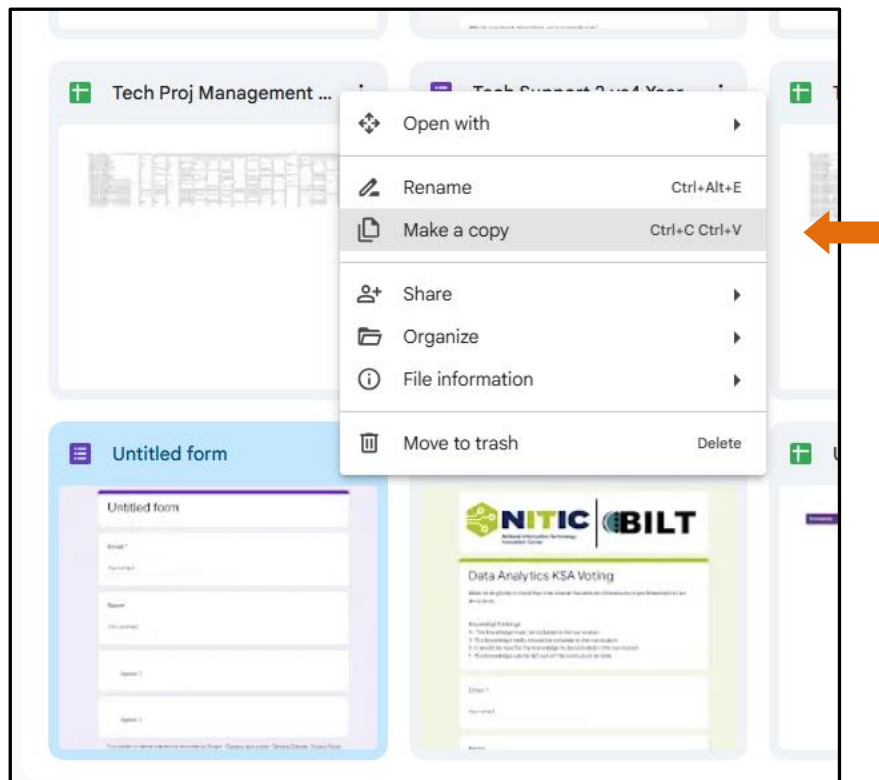


Figure 25: Making a Google form copy

2. Open the new “Copy of the Google Form” via the new tab at the top of your browser. Rename the Google Form in the upper left field to avoid accidentally changing your original (see screenshot below).

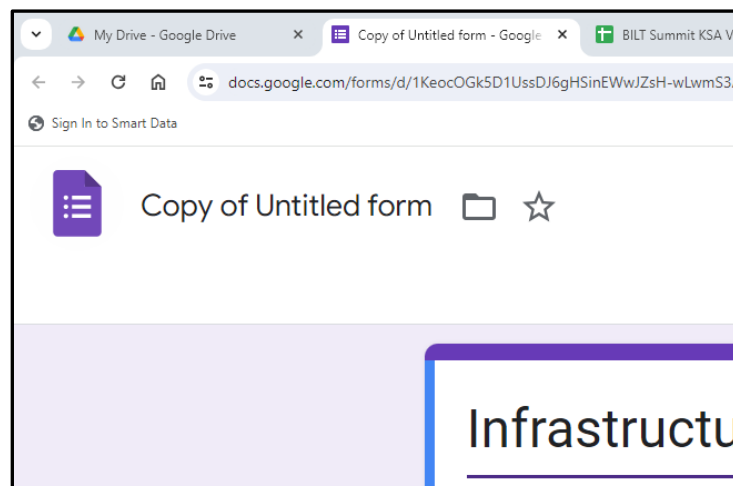


Figure 26: Updating the Google form title

3. Modify the “Google Form” based on your needs. Once all modifications are completed, link responses to a Google Sheet as described in Step 2 above.
4. Now follow the directions from Sections 3 and 4 above.

These directions originally appeared in the IT Skill Standards 2020 and Beyond grant “Resources” book, which can be found here:

<https://drive.google.com/drive/folders/1DfloR0UgYbINeQpiqZ2jPRKNYlp27Oji>



This material is based upon work supported by the National Science Foundation under Grants No. 1700530 (National Convergence Technology Center), 1838535 (IT Skill Standards 2020 and Beyond), and 2300188 (National IT Innovation Center). Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



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