



Form Design Supplemental Materials PDF

In the interest of providing the best training information to our users, we have included additional material for those who want to review concepts in detail, read additional material on specific aspects of the software, obtain tips and see additional examples.

Contents:

1. Free Form Design Resources
2. Form Design Checklist
3. Form Design – From Our Classroom Training Workbook
4. Form Design Tips

1. What Form Design Resources are Available for Free?

- a. Website downloads are free. To download the following items go to www.gravic.com, and then to the Remark Office OMR Downloads page: www.gravic.com/remark/officeomr/downloads.html
 - The OMR Bubbles Font – This font is automatically installed on your computer when our software is installed. It contains encircled letters and numbers that make it easier to create scannable forms. Your associates who do not have Remark Office OMR installed on their computers may download the font from our website. Once the zipped file is downloaded, it can be unzipped and installed in the Windows Fonts directory and used in most text editors.
 - The Code 3 of 9 Barcode Font – This font is automatically installed on your computer when our software is installed. This space saving barcode can encode both textual and numeric information and the software can process barcoded information without the need for data entry. Your associates who do not have Remark Office OMR installed on their computers may download the font from our website. Once the zipped file is downloaded, it can be unzipped and installed in the Windows Fonts directory and used in most text editors.
 - Directions on how to fill in the bubbles for your respondents – Put an example of "how to" and "how not to" fill in the bubbles on your scannable forms so that your respondents will understand how to properly fill in your OMR bubbles. Just right click the image of these graphic directions and then select Save Picture As.
 - Sample Forms – With Remark Office OMR, you can design your own forms using any word processor, desktop publisher or form design software package. The examples you can download provide some ideas for form layout. Some sample forms utilize the Code 3 of 9 barcode font and/or the OMR Bubbles font. In order to view these documents properly, you must have these fonts installed on your system before opening the document. The fonts can be downloaded from this page: <http://www.gravic.com/remark/officeomr/downloads.html>
- b. Free form reviews – Always! We offer free form reviews to all our software users with or without a paid support contract. You may submit forms attached to an email to: support@gravic.com.

2. Form Design Checklist

Good form design is crucial to good mark recognition. Check each form to be certain that it complies with the following best practices. You are also welcome to send forms to Gravic Support for a free form review: support@gravic.com. Please see the next section for more detailed information about these concepts.

- a. Proper mark selection:
 - Use bubbles over other shapes such as checkboxes whenever possible
 - Use bubbles between 10–12 points in size for most projects
 - Use plain bubbles such as Arial font capital O or the OMR Bubbles Font
 - b. Recommended spacing:
 - Allow at least 3/8 inch between your marks and any text, lines or graphics on the form
 - Separate the marks from each other by at least two character spaces
 - Avoid the use of visible grids or boxes in the areas containing marks
 - c. Question grouping:
 - Place similar questions together so that the same labels can be used for multiple questions
 - Avoid placing labels between answer choices (Avoid this: O Yes O No)
 - d. Wise use of shading:
 - Do not place shading in areas containing marks; adjacent text areas are OK to shade
 - e. Directions for filling in the marks:
 - Add graphic directions for how to fill in the marks and avoiding checks and Xs
 - f. Paper:
 - Use black ink on white paper for overall best results
 - Test any color paper other than white to be sure it does not show up when scanned
 - Use a heavier paper if necessary for 2-sided forms
 - g. Form reproduction:
 - Emphasize consistency when reproducing forms; print or copy all forms in one batch if possible
 - Print high quality forms (straight on page; no 'dirty' areas or lines; all bubbles intact)
 - Use a form from the same batch to create your form template
 - h. Free form review:
 - Take advantage of our free form reviews: support@gravic.com
 - i. Form testing:
 - Always create a form template and test your forms before printing and distributing them
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3. Form Design Principles

The following is an excerpt from our Remark Office OMR classroom training workbook.

Form Design

Using Remark Office OMR effectively starts with good form design. Because Remark Office OMR works with plain paper forms that you create, duplicate and distribute yourself, there are general form design guidelines to use in order to obtain the best possible recognition results. Once you determine the questions you want to ask your respondents, creating the form in a scannable layout is the next step. You can use software packages designed specifically for survey creation or you can use word processing or desktop publishing applications (e.g., Microsoft Word, Corel WordPerfect, etc.) to create forms. Regardless of how you decide to create a form, certain guidelines apply.

How Do I Design a Form?

How do you design good forms? Use the following procedures:

- **Mark Selection**

Although Remark Office OMR works with almost any complete shape (e.g., circle, square, triangle), experience indicates that bubbles between 10 and 14 points in height work the best. We recommend a capital "O" in an Arial font for a bubble, but squares and triangles work as well. Non-oval shapes are somewhat harder to fill completely. Respondents will typically fill bubbles more completely and neatly, which leads to better recognition rates. Generally, give young or elderly respondents more room both in the size of the marks and in the spacing between the marks. Experiment with your target group where practical.

It is possible to place numbers or letters inside of marks; however, the number/letter must be as small and light as possible. Dark, thick or bolded characters may cause Remark Office OMR to interpret the mark as being filled. Principia Products has created an encircled letter/number font called OMR Bubbles that you can download and use free of charge from www.principiaproducts.com. The font is also automatically installed with the Remark Office OMR software.

- **Spacing**

White space is important both between the marks in a field and around the area of marks. Allow at least 3/8 inch (1/2 inch recommended) between any text, lines or graphics on the form and any user-markable areas. The more white space the better.

Example:

What is your favorite color?

Red	<input type="radio"/>	Yellow	<input type="radio"/>
Green	<input type="radio"/>	Brown	<input type="radio"/>
Blue	<input type="radio"/>	Black	<input type="radio"/>

Minimize potential errors by separating marks in a group from one another by at least two character spaces.

Example:

	Excellent	Good	Fair	Poor
Question 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Try to stay away from using lines or boxes around or between the marks on the form. If you find it necessary to use lines or boxes, consider making the lines a light gray (e.g., 5%) that will drop out (completely disappear) during the scanning process. Use at least 1/2 inch of space between lines and any user-markable areas on the form.

The purpose of these spacing guidelines is to allow Remark Office OMR to accommodate skew or offset during the scanning process as well as poorly marked forms. If lines, text, etc., are very close to the optical marks, very small amounts of skew (e.g., from photocopying or feeding through an automatic document feeder on a scanner) can potentially cause recognition errors.

- **Grouping Questions**

Place similar types of questions together. For example, place all True/False questions in one area of the form and all multiple choice questions in another. Positioning all of the marks for the same question type in a single field area minimizes your efforts in the Field Definition windows when creating the template. All marks for a single field must align horizontally and vertically. However, the space between rows of bubbles in a group does not have to be equal.

Whenever possible, place the labels for a group of questions on the top of each column or at the beginning of each row; this will allow you to select the entire group of questions within one field in the template. If the labels are between marks, then you may have to select questions individually and/or join marks together to form logical questions.

When you have headings over rows and columns of marks, leave a larger amount of white space between the header row and the first row of marks than you have between the rest of the rows of marks. This will help the Remark software understand where the headings are located and where the actual marks begin.

Example:

	Excellent	Good	Fair	Poor
Question 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Question 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note the different amount of white space between the labels and the first row of bubbles.

- Shading**

Remark Office OMR works best with marks printed in black ink without shading. However, shading can be used successfully as long as the shading drops out (completely disappears) when scanned (a 5% gray typically works well). The shading must be light enough to disappear so that it does not interfere with the recognition of your optical marks.

If you plan to use shading on your forms, you should not photocopy forms for distribution. Photocopiers will not duplicate the shading as it appears on a normal printout. Chances are it will be too dark. You should print forms on a printer or have them professionally printed if you are using shading. Test your form with your scanner before printing large quantities.

- Paper**

Remark Office OMR works best with plain white paper and black ink. You can use colored paper (pastel colors tend to work well), as long as the coloring drops out (completely disappears) when scanned. The paper color must be light enough to disappear so that it does not interfere with the recognition of your optical marks. Test your paper selection with your scanner before printing large quantities of your forms. To test your paper, place a blank sheet in the scanner. Scan a copy in the template editor. If speckles or blotches appear on the image, it is too dark.

Remark Office OMR will support any paper size or thickness supported by your scanner. Consult your scanner's User's Guide for further information. In general, 20-24 pound paper is sufficient (regular copy paper). However, if you plan to print double sided forms, a heavier weight paper is recommended to avoid bleed through. 28 pound paper or higher is recommended.

- Photocopying Forms**

Photocopying forms is an acceptable method of form duplication. The accuracy of page placement into the photocopier when copying forms and into the scanner when reading forms are the limiting factors as to how large your margins must be in order to minimize errors. Forms with inadequate spacing will have a low tolerance for offset and/or skew. Whenever possible, try to create as many photocopies as you may need in one sitting. This will reduce placement problems that can occur when photocopying a photocopy at a later date. Test your form before photocopying large quantities.

Note: If making photocopies, create your template on the photocopied version rather than the original. This will aid in accommodating any offset produced by the photocopier.

- Testing** Always test any forms you plan to use with Remark Office OMR before printing and distributing them. Mark the forms as you expect to get them back (e.g., not perfectly). Testing a form will accomplish two things: 1) your form design and 2) your template creation.

Take a look at the next two pages for examples of forms that are not scannable and have several common form design mistakes and how they can be turned into great Remark Office OMR forms. (These forms were created in Microsoft Word.)

Remark Office OMR cannot read text automatically

Tourist Bureau Survey

Name of Hotel/Motel: ABC Hotel

Date of visit:

Circle the number questions are not valid formatting.

1. What was the main purpose of your trip?

- Vacation Business
 Attend/participate in sporting event
 Other _____

6. How many total people are in your group?

- 1 2 3 4 5 6+

2. How did you hear about _____

Bold formatted bubbles

- Travel Agent Internet
 Television Magazine
 Newspaper Recommendation

Invalid format (need to use marks)

3. How many nights did you stay with us?

- 1 2 3 4 5
 6 7 8 or more

7. What was the main reason you came to our area?

- Business purposes Part of package
 Beach destination Reasonable price
 Recommendation Been here before

4. Please list all of the sources you used to gather information about our area:

Bubbles too large

- Advertised number/address
 Travel agent
 Friend/Relative
 Internet
 Chamber of commerce
 Other _____

9. What activities did you enjoy while in the area?

- Sightseeing Dining
 Golf Sporting event
 Beach/swimming Shopping
 Fishing Theater

5. How did you arrive to the area?

- Air
 Bus
 Train
 Car/truck/RV/motorcycle

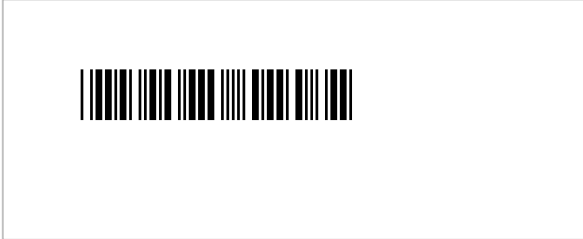
10. How would you rate the following:

Shading too dark, spacing too tight, lines too close to bubbles

	4	3	2	1
Lodging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Restaurant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Attraction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area Roads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Value for cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall Visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tourist Bureau Survey

Name of Hotel/Motel:



Date of visit: _ _ / _ _ / _ _ _ _

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

1. What was the main purpose of your trip?
- Vacation
 - Business
 - Attend/participate in sporting event
 - Other _____

2. How did you hear about our area?
- | | |
|------------------------------------|--------------------------------------|
| <input type="radio"/> Travel Agent | <input type="radio"/> Internet |
| <input type="radio"/> Television | <input type="radio"/> Magazine |
| <input type="radio"/> Newspaper | <input type="radio"/> Recommendation |
| <input type="radio"/> Radio | <input type="radio"/> Other |

3. How many nights did you stay with us?
- | | |
|--------------------------------|--|
| <input type="radio"/> 1 night | <input type="radio"/> 5 nights |
| <input type="radio"/> 2 nights | <input type="radio"/> 6 nights |
| <input type="radio"/> 3 nights | <input type="radio"/> 7 nights |
| <input type="radio"/> 4 nights | <input type="radio"/> 8 nights or more |

4. Please list all of the sources you used to gather information about our area:
- Advertised number/address
 - Travel agent
 - Friend/Relative
 - Internet
 - Chamber of commerce
 - Other

5. How did you arrive to the area?
- Air
 - Bus
 - Train
 - Car/truck/RV/motorcycle

6. How many total people were there in your group?
- | | |
|-------------------------|---------------------------------|
| <input type="radio"/> 1 | <input type="radio"/> 4 |
| <input type="radio"/> 2 | <input type="radio"/> 5 |
| <input type="radio"/> 3 | <input type="radio"/> 6 or more |

7. How many children did you have with you?
- | | |
|-------------------------|-----------------------------------|
| <input type="radio"/> 1 | <input type="radio"/> 4 |
| <input type="radio"/> 2 | <input type="radio"/> 5 or more |
| <input type="radio"/> 3 | <input type="radio"/> No children |

8. What was the main reason you came to our area?
- | | |
|---|--|
| <input type="radio"/> Business purposes | <input type="radio"/> Part of package |
| <input type="radio"/> Beach destination | <input type="radio"/> Reasonable price |
| <input type="radio"/> Recommendation | <input type="radio"/> Been here before |

9. What activities did you enjoy while in the area?
- | | |
|--------------------------------------|--------------------------------------|
| <input type="radio"/> Sightseeing | <input type="radio"/> Dining |
| <input type="radio"/> Golf | <input type="radio"/> Sporting event |
| <input type="radio"/> Beach/swimming | <input type="radio"/> Shopping |
| <input type="radio"/> Fishing | <input type="radio"/> Theater |

10. How would you rate the following:
- | | Excellent | Good | Fair | Poor |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Lodging | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Local Restaurants | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Transportation | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Local Attractions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Area Roads | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Shopping | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Value for cost | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Overall Visit | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

You will notice on the revised form the OMR bubbles are used in place of circle the number or checkmark style responses. Additional spacing has been added so that the form conforms with Gravic's spacing guidelines. This can all be accomplished quite easily in most word processing packages.

Word Processing Applications

Word processing software applications offer a simple way to generate scannable forms. Here are some helpful hints:

- Create OMR bubbles by typing a capital "O" or by using Principia's OMR Bubbles font. A font size of 10-14 points works best.
- Use the Arial font for a well-rounded bubble that scans well. Times New Roman, the default font in many word processing applications, is not recommended for creating bubbles. The font is thin on the top and bottom, which can often cause the bubbles to break up during the scanning process. This means that the bubbles have gaps in them and are no longer complete shapes, which is a requirement for Remark Office OMR.
- Use tables to make rows of questions that have the same set of possible responses (e.g., 10 questions with the scale of Excellent, Good, Fair and Poor). Tables will allow you to line up the bubbles in rows and columns. While the table is useful for lining up rows and columns, it is important to remove the table lines for the final version of the form. Once the table is created you can remove the table borders by selecting Table|Auto Format|Table Normal.
- Create barcodes using the Code 39 barcode font (barcodes will be discussed more in depth in section 1:4).
- Use the Mail Merge function in Microsoft Word to capture information you already have stored in a database (mail merge will be discussed more in depth in section 1:5)

Once you have created your forms in a word processing application, it is easy to print, photocopy or have them professionally printed. They are also easily modifiable if you find you need to make changes at a later date (e.g., add a question, remove a question, change the wording of a question, etc.)

We have included sample forms created in Microsoft Word and Corel WordPerfect on the CD-ROM included with your training materials.

Barcodes

Barcodes provide a great way to capture data that would normally be too difficult to collect or take up too much space on a form if represented in bubble format. For example, barcodes can be used to capture names, addresses, ID numbers, etc. Remark Office OMR will recognize three of the most common barcodes: Code 39 (alphanumeric), Codabar (alpha only) and Interleaved 2 of 5 (numeric only). Barcodes should be at least 26 points in terms of size and can be oriented horizontally or vertically on the form.

The Code 39 barcode is a font that you can download and use in any word processing or desktop publishing application. The font is also automatically installed with the Remark Office OMR software. You use it just like any other font with two exceptions:

- Each barcode begins and ends with asterisks (*); the asterisks become bars in the barcode
- Spaces are represented by the exclamation point (!)

Remark Office OMR will read the information in the barcode and include it in the data file.

Example:

Mary Smith

- becomes -



(*Mary!Smith*)

Mail Merge

Microsoft Word's mail merge feature is an easy way to input information that you already have in barcode format on your scannable forms. For example, you may have a database that contains names, ID numbers, etc., that you want to include on a form. However, you don't want to take up a good deal of space and you want to keep this information anonymous. You can use the mail merge feature to import that data into your Word document in the form of a barcode. Mail merge involves the following (note that the naming of steps and details vary slightly depending on the version of Microsoft Word you are using):

- In Microsoft Word, select Tools|Letters and Mailings|Mail Merge to open the Mail Merge Helper.
- Select the type of document to create (Letters is typical). Click Next.
- Select an existing document or create a new document. Click Next.
- Select a data source. In the above example, you would select the database that contains the student ID numbers and names. Click the Browse button to open an existing file.
- You will next be prompted to edit the document. Click the More Items option to view fields from the database you previously selected.
- Select a field from the Insert Merge Field list. To create a barcode field, format that merge field as a barcode by changing it to the barcode font, adjusting the size to at least 26 points and adding the required asterisks outside of the merge field brackets: *<<Name>>*. Click Next.
- You may now preview the documents or click Next to print the forms.

Your forms will now have barcodes on them that Remark Office OMR can process along with the rest of your data.

4. Form Design Tips

Here are some additional tips for creating highly scannable forms:

- If your forms were printed on colored paper or have shading in the areas containing marks, you can raise the brightness setting on your scanner to help shading or color from paper drop out. However, the shading or color on the paper still needs to be light enough so that you do not have to raise the brightness setting too high; this could compromise the rest of the form. If the brightness setting gets to the point where the marks in the scanned image begin to deteriorate, you will need to make the setting a bit darker; it is essential that the marks retain their integrity for good mark recognition.
- Use the form design checklist and guidelines for every form you create. Starting with a well designed form can make the difference between a successful and unsuccessful project and will save time in the long run. Take advantage of the free form review service, especially if you are new to the form design process. (Menu commands may vary depending on the version of Word you are using.)
- If using Microsoft Word to create barcodes, turn off the Auto Format feature for turning anything between two asterisks to bold. Otherwise, you will lose the last asterisk, making the barcode unreadable. You can find the Auto Format feature under Format|AutoFormat|Options|AutoFormat As You Type and Format|AutoFormat|Options|AutoFormat.