This shows various parts of the *Worksheet Builder* sheet of the Excel file.

Top of Worksheet Builder sheet (rows 1 to 4)

12
n
Sides ▲ ▼

Create worksheets for students to fill in with pencil and ruler

☑ Click here to add the number of vertices to each image.

13
n
Sides ▲ ▼

Type or link to instructions here: See how many of the images create stars if you jump four vertices each time until you return to the initial vertex.

Note: These instructions are typed below. You can link to these instructions by typing, for example, =E36 in cell H3. Alternatively, you can type your own instructions in H3 and it appears in row 6.

Example: The top third of a worksheet (rows 5 to 31)

Ms. Smith   Creating Stars   Second Grade Math, Name_____

See how many of the images create stars if you jump four vertices each time until you return to the initial vertex.

12

13

Instructions, suggested polygons on sheet, and what students discover. (rows 33 to 48)

Suggested instructions based on six images to a page (3 rows with 2 images per row):	suggested polygons on worksheet	What students discover
See how many of the images create stars if you jump two vertices each time until you return to the initial vertex.	n, n+1, …, n+5 with n>4	Every other one has half the vertices used.
See how many of the images create stars if you jump three vertices each time until you return to the initial vertex.	n, n+1, …, n+5 with n>6	Every third one has one third the vertices used.
See how many of the images create stars if you jump four vertices each time until you return to the initial vertex.	n, n+1, …, n+5 with n>8	Every 4th one has one fourth the vertices used.
See how many of the images create stars if you jump five vertices each time until you return to the initial vertex.	n, n+1, …, n+5 with n>10	Every fifth one has one fifth the vertices used.
On upper left do 1 jump, upper right do 2, middle left do 3, middle right do 4, lower left do 5, and lower right do 6	six the same with n=12	J=1 through 4 are polygons. J=5 is a star & 6 a line
On upper left do 1 jump, upper right do 2, middle left do 3, middle right do 4, lower left do 5, and lower right do 6	six the same with n=13	All are stars
On upper left do 1 jump, upper right do 2, middle left do 3, middle right do 4, lower left do 5, and lower right do 6	six the same with n=14	even jumps have half density J=3 and J=5 are stars
On upper left do 1 jump, upper right do 2, middle left do 3, middle right do 4, lower left do 5, and lower right do 6	six the same with n=15	3 gives pentagon 5 gives triangle
On upper left do 1 jump, upper right do 2, middle left do 3, middle right do 4, lower left do 5, and lower right do 6	six the same with n=16	2 and 6 have 8 vertices, 4 has 4, 3 and 5 are stars
You can make a triangle using each image with skip jumping. How many jumps are necessary in each panel?	3, 6, 9, 12, 15, 18	1, 2, 3, 4, 5, 6
You can make a square using each image with skip jumping. How many jumps are necessary in each panel?	4, 8, 12, 16, 20, 26	1, 2, 3, 4, 5, 6
You can make a pentagon using each image with skip jumping. How many jumps are necessary in each panel?	5, 10, 15, 20, 25, 30	1, 2, 3, 4, 5, 6
You can make a hexagon using each image with skip jumping. How many jumps are necessary in each panel?	6,12, 18, 24, 30, 36	1, 2, 3, 4, 5, 6
You can make a heptagon (7-gon) using each image with skip jumping. How many jumps are necessary in each panel?	7, 14, 21, 28, 35, 42	1, 2, 3, 4, 5, 6
You can make an octagon using each image with skip jumping. How many jumps are necessary in each panel?	8, 16, 24, 32, 40, 48	1, 2, 3, 4, 5, 6

Instructions for creating a worksheet (cells R3:AD31)

To create a worksheet, you need to decide what you want to have students do with the worksheet.

1 Choose a task from the list below (starting in E34) or write your own in H3.

s   This information will be transferred to row 6.

2 Fill in, header information in row 5.

3 Open a Word document and adjust the margins to fit 3 rows by 2 columns of figures

       Click Page Layout, Margins, Custom Margins

       then set: Top: 0.5   Bottom: 0.6

                 Left: 1.1   Right: 1.1

4 Set polygon sizes for top third of worksheet (Up/Down arrows in G1 and M1).

5 Show or hide numbers using toggle in H2.

6 Highlight top third in Excel by mousing over F5:M31.

7 Click Copy in Excel

8 Click on Word document, click down arrow below Paste

9 Click Paste Special, Picture (Enhanced Metafile)

10 Click back to Excel and adjust polygon sizes as required

11 Move upper corner down from F5 to F7 then hold shift key down and scroll to M7 and down to row 31

12 Click Copy in Excel

13 Click on Word document, click down arrow below Paste, click Paste Special, Picture (Enhanced Metafile)

14 Redo 10 - 13 for the bottom third of the worksheet.