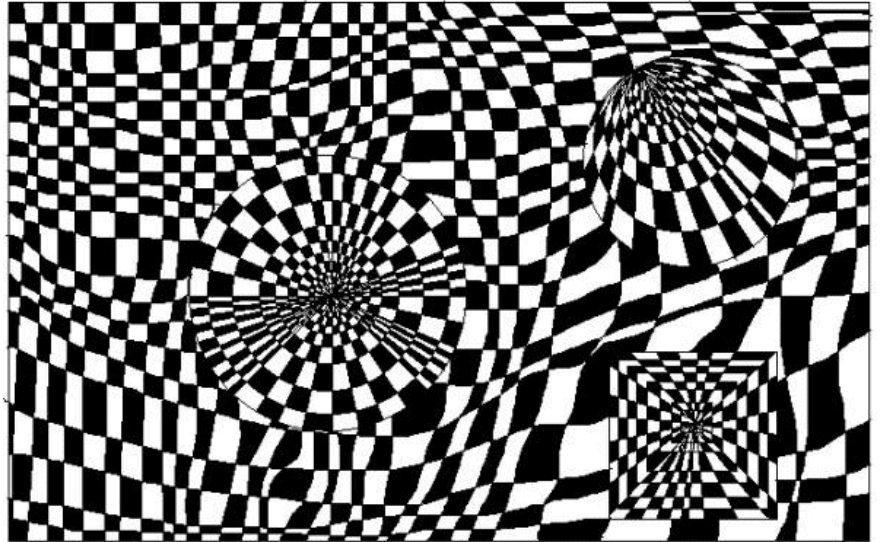


Optical Design for Children's Book Project, in Windows Paint

Use the child's favorite color with a combination of straight and curved lines and shapes to create an optical design. Read the directions carefully. This assignment requires reading and patience.

This example uses black lines and fills on a white background. If the child's favorite color is a dark value, use their color on a white background for neutral contrast. If the child's favorite color is a light value, use their color on a black background for neutral contrast.

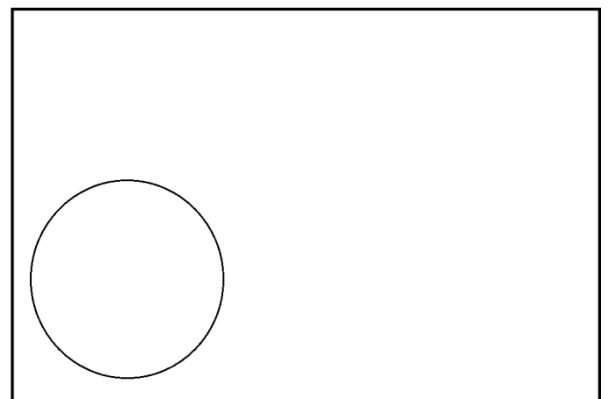


Start the document and the first circle set

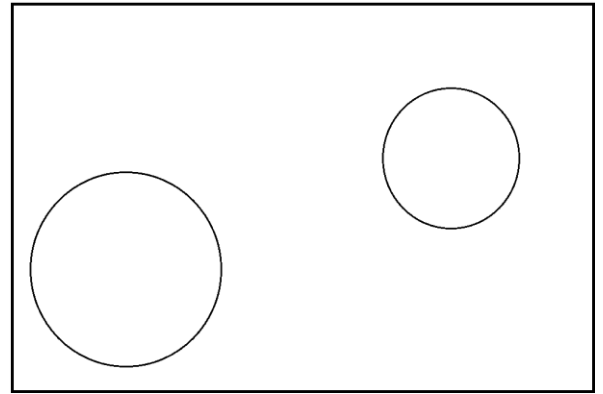
- 1) Open Windows Paint.
- 2) Show rulers so you can get the circles and squares the correct size.
- 3) Format your document to make it 9 inches wide and 7 inches high.
- 4) If the child's color is a light value, make the "Color 2" box black. Then use the Fill bucket tool and fill the document with black. (If the child's color is a dark value, leave the color box and document white.)
- 5) You may want to Zoom out for the first several steps so you can see the whole document.

6) Choose the Oval tool. Make its outline color the child's favorite color. Size the outline to 3 px.

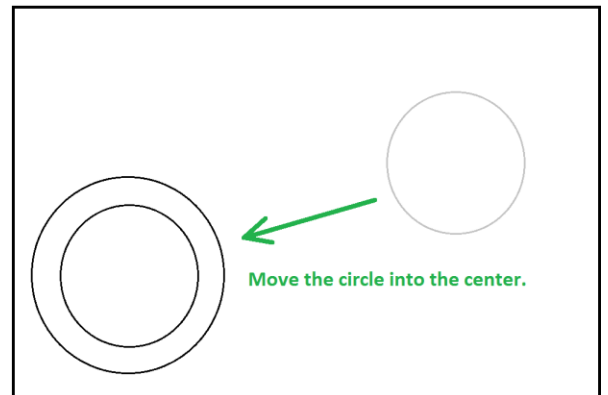
7) Toward the left side of the document, use the Oval tool to make a perfect circle that is 3.5 inches in diameter. Hold the Shift key while you make the circle to keep it "perfectly" round.



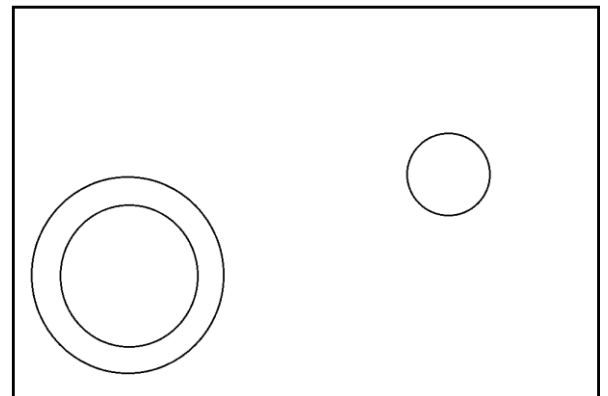
7) Use the empty document space to make another perfect circle that is 2.5 inches in diameter.



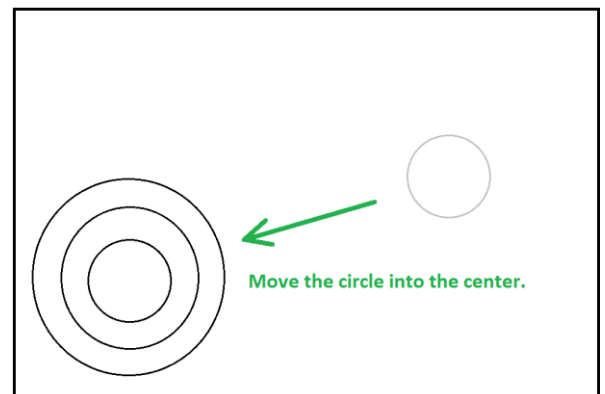
8) Use Transparent Selection to move the smaller circle into the middle of the larger one. Make sure it is centered.



9) Use the empty document space to make another perfect circle that is 1.5 inches in diameter.

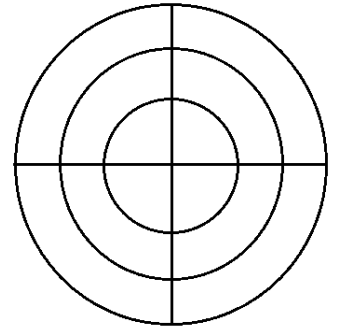


10) Use Transparent Selection to move the smaller circle into the middle of the first two. Make sure it is centered.

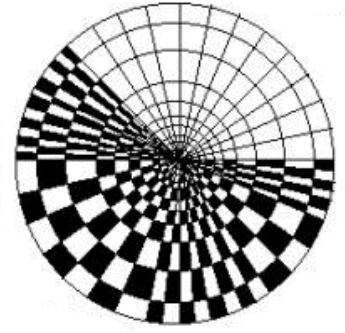


11) **Save your work in your folder. Use a descriptive name like Optical Design**

12) Use 3 px lines to draw “cross hairs” through the set of circles. Divide the circles as evenly as possible horizontally and vertically.



13) Use *at least two more* bisecting lines to keep dividing the set of circles. Divide it into even “slices” like slicing up a cake or pie.



14) Use the Fill bucket to fill the sections with the child’s color in a checkerboard pattern. Fill carefully, avoiding skips and mis-steps. The example is only part-way finished. Fill yours completely with the checkered pattern.

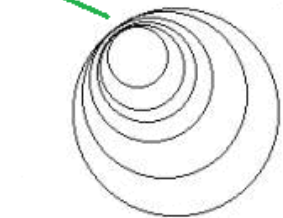
15) **Remember to protect your work by saving it periodically.**

Make the second circle set in an empty space

16) Find an empty space on the right side of the document. Make another “perfect” circle that is 2.5 inches in diameter.

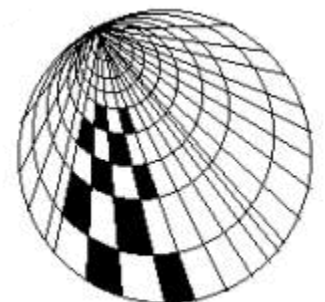
All circles touch at same point

17) Make *at least two more* circles to fit inside of it. Have all the circles touching at one point on the edge like the example shown.



18) Draw *three or more* lines coming out from the meeting point. Divide the set of circles in a way that “radiates” from that one point.

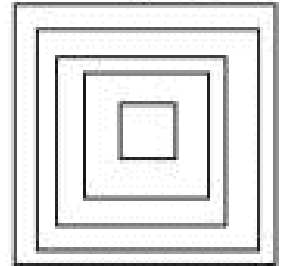
19) Use the Fill bucket to fill the sections with the child’s color in a checkerboard pattern. Fill carefully avoiding skips and mis-steps. The example is only part-way finished. Fill yours completely with the checkered pattern.



20) **Remember to protect your work by saving it periodically.**

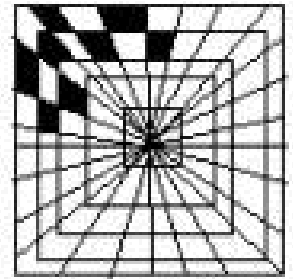
Make the square set

21) In an empty space, draw a square that is 2.5 X 2.5 inches. (If there isn't enough empty space to make the square set, make the set in another document. Then copy & paste the finished square set into the original document.)



22) Make *at least two more* squares that fit inside the first square as shown. Try to center the squares as much as possible.

23) Draw four or more bisecting lines through the middle of the set, horizontally, vertically, and diagonally. An example is shown.



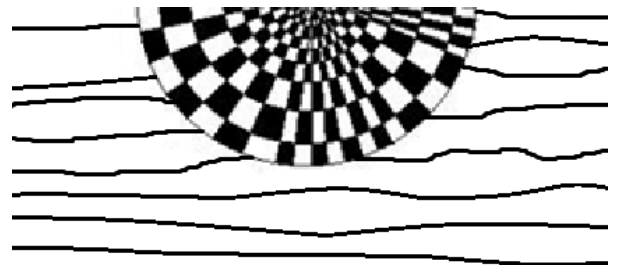
24) Use the Fill bucket to fill the sections with the child's color. Fill carefully avoiding skips and mis-steps. Fill it completely with a checkerboard pattern like you did for the circle sets.

25) **Remember to save your work.**

Arrange the shapes with a background

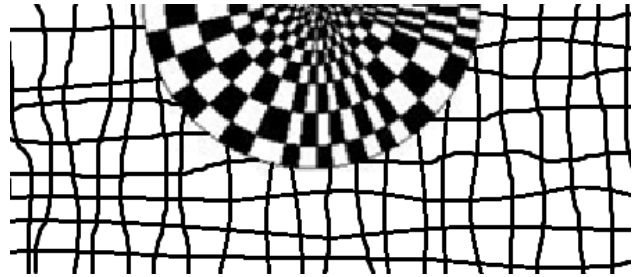
26) Arrange the 2 circle sets and 1 square set in the document. Put them where you want to, but keep space around them. Don't let them touch each other or the edges of the document.

27) Use the Brush tool at size 3 px to draw gently waving lines horizontally all the way across the document. Make sure the lines have gentle waves – wild waves and kinks will destroy the optical effect. Do not draw the horizontal lines through the shape sets. Make them go around or “behind” the shape sets as shown in the example. (You might want to experiment with the Curve tool for some of the lines.)

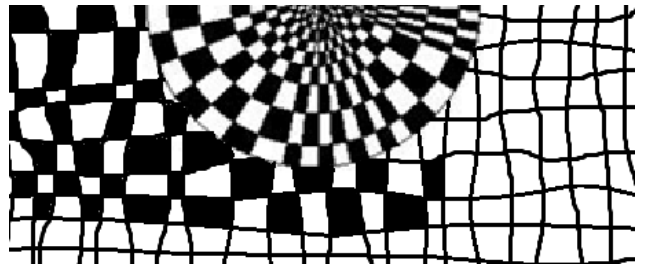


28) **Remember to protect your work by saving periodically.**

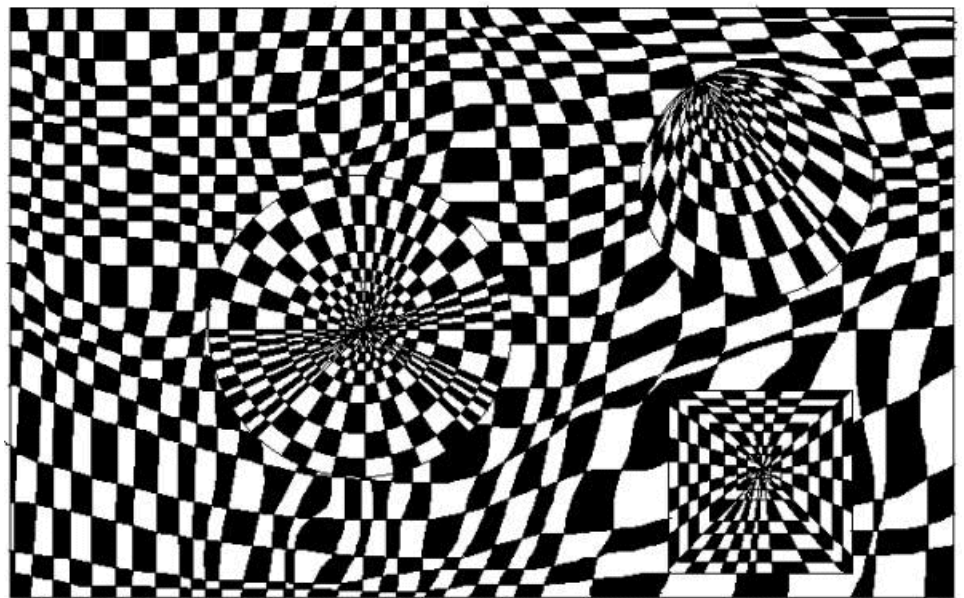
29) Use the same Brush tool to draw gently waving lines vertically all the way up and down the document. Make sure they are gentle waves. Do not draw through the shape sets.



30) Use the Fill bucket and the child's color to fill the background with a checkerboard pattern.



31) **Save your finished work in your student folder.**



Assembled with help from:
<http://www.carolynrobertsart.com/opartdesign.html>
by Ms. Melissa Birkholz for her students
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Name: _____

Computer Art – Optical Design Checklist & Question

How well you've done on the items below impacts your grade. Check off each item after you've checked it with your work. (You may use a Y or N to denote Yes or No.)

_____ Workmanship is neat and clean; Composition looks well put together; There are no awkward "sloppy" white spaces, stray lines, etc. The spaces that should be filled with color are filled.

_____ Document is 9 inches wide by 7 inches tall.

_____ The design uses the child's favorite color with a contrasting value.

_____ A 3.5" circle has at least two other circles nested and centered inside of it.

_____ The 3.5" circle set contains at least 4 bisecting lines that divides it into "slices".

_____ The 3.5" circle set is filled with a checkerboard pattern, without skips or mis-steps.

_____ A 2.5" circle has at least two other circles inside, all touching its edge at the same point.

_____ The 2.5" circle set has at least three lines radiating from the touch point, dividing it into sections.

_____ The 2.5" circle set is filled with a checkerboard pattern, without skips or mis-steps.

_____ A 2.5" square has at least two other squares nested and centered inside it.

_____ The 2.5" square set contains at least 4 bisecting lines that divides it into sections horizontally, vertically, and diagonally.

_____ The 2.5" square set is filled with a checkerboard pattern, without skips or mis-steps.

_____ The three shape sets don't touch each other or the document edges.

_____ The background is made from gently waved horizontal and vertical lines. It is filled with a checkerboard pattern without skips and mis-steps.

_____ The work fills the document in a constructive and purposeful way;
Composition space was used to its full potential

This is to help you reflect on your composition. Write a thoughtful answer between three to five sentences long. -- Chose and name an *element* of art. Describe your use of it in the work (things like how and where you used it, the effect it has, how it helps the composition, the challenges or process of using it in your work, etc.).