

Construction Project

Purpose:

- To practice the constructions we have learned.
- To gain an appreciation for the need for carefulness and precision in constructions.
- To apply the constructions we have learned in a creative manner.

Assignment:

Your group will draw at random one assigned design. All of the designs are constructible using a compass and straight edge only. You will develop a step by step plan detailing how you can construct the design. After your plan has been approved, you will follow it and construct the design. You will submit a series of Xerox copies of your work with the construction lines showing and a neat colored displayable design without the construction lines. (You may wish to include small sketches in your plan to help make your steps clear.)

Your group will also work together to create an original design. It should be submitted in displayable form also, along with a step by step description of how someone else could reproduce your design.

Your step by step descriptions should be written so that they could be used by a reader to reconstruct your design. Do not assume your reader is your teacher. You may assume that your reader knows how to do the following constructions: copying a line segment, copying a circle given the center, copying an angle, constructing an angle bisector, constructing a perpendicular bisector of a line segment, constructing a perpendicular to a line through a point on the line, and constructing a perpendicular to a line through a point off the line. Any other constructions must be explained in detail.

Schedule:

- Wednesday, February 28: Turn in names of your group members.
- Monday, March 5: Receive project assignment. Randomly select your design.
- Friday, March 9: In class, hand in detailed plan of assigned design. (This is to verify that you are on the right track. It should include a step-by-step plan for your assigned design only. Sketches are appropriate. Completed constructions are not necessary.)
- Monday, March 12: Receive your graded plan.
- Friday, March 16 : In class, hand in completed assigned design. This means: revised step by step description of assigned design, copies of assigned design with construction lines showing, and assigned design in displayable form.
- Monday, March 26: Receive your graded assigned design.
- Tuesday, April 3: By 1⁰⁰ pm, hand in original design. This means: step by step description of original design, and original design in displayable form.

Note: Assigned Designs are taken from Creative Constructions - Grades 5 and up by Dale Seymour and Reuben Schadler

Grading:

- Assigned Design - Plan 9 points (clarity 5, correctness 4)
- Assigned Design - Final product 21 points
 - step by step description (clarity 4, correctness 2, neatness 2)
 - construction lines (precision 5, neatness 2)
 - colored design (neatness 3, appearance 3)
- Original Design 20 points
 - step by step description (clarity 5, correctness 2, neatness 2)
 - colored design (difficulty 3, precision 4, neatness 2, appearance 2)

Hints:

In your future you may be asked to work on a committee to solve a problem in your school, come up with a new plan for how to do something at the school, or work with other teachers to earn a grant for some project at your school. Treat this project as you would one of those. Strive for a high level of professionalism and do your best. (On the academic side, remember that projects count in your tests average.)

Remember - precision is a must in constructions. One slip of the compass can result in a lop-sided figure.

Designs should almost cover the width of an ordinary sheet of paper.

Typewritten papers are not required, but remember you are being graded on neatness. It might be a good idea to type your work.

Treat your designs like a work of art. Feel free to sign them in the bottom right corner as an artist would.

I am more than willing to help on any instruction you do not understand or if you simply want to have your work checked along the way. However, I will not do so during class. Feel free to see me in my office. My office hours are listed in your syllabus. I am there more than that - you can call ahead to see if I am available or check the board outside my office for notes concerning my whereabouts.