

TITLE OF LESSON

Geometry Unit 1 Lesson 5 – Introduction to the Group Project
What's on the outside? What's on the inside? of Geometry

TIME ESTIMATE FOR THIS LESSON

One class period

ALIGNMENT WITH STANDARDS

California – Geometry

1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.

2.0 Students write geometric proofs, including proofs by contradiction.

3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.

MATERIALS

Magazines

Tape

Rulers

Cardboard or something to tape pictures to

Scissors

Geometric Shapes Project Description – Student Page

LESSON OBJECTIVES

- To work with others responsibly
 - To begin to apply concepts from lessons 3 and 4
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EXPLANATION OF LESSON

This is the first lesson for the group project students will do this quarter. The project integrates the ideas from geometry with the structure of Photoshop, a graphics program that works in layers. In order to get to the more advanced features of Photoshop layers, students need solid grounding in the fundamentals. For this unit project, the focus will be on shapes and some of the basics in Photoshop. All lessons are written using Photoshop CS. If you are using a different version, some things may be different. Students will work on this project in lessons 5, 10, 15, 20, 25, 30, 35, 40, 41, and 42. For this class, they will not be working in Photoshop yet.

For the project, students must be in groups of at least three people. Each group will work through the unit to develop a layered collection of shapes that they use Photoshop tools and skills to call attention to. At the end of the semester, groups will exchange their final images and classmates will have to try to locate each of the shapes in the image. The project starts slowly because students have to learn some fundamentals of Photoshop before they can begin their final piece, but each week they will add to their understanding of and comfort with Photoshop. For the geometry portion, they will be demonstrating a knowledge of and ability to recognize the variety of shapes they will be working with throughout the year. Projects for the next three units will involve deeper use of geometry, but for the students to get started, they need the tech fundamentals also.

For today, they will be creating a story in images. The story should be in the form of a proof. Students will need supporting facts that follow an assertion and arguments leading to a conclusion that support the original assertion. Each group will create their story based solely on objects, shapes, and images. Another group will then have to translate the story into words. The idea is to show students that they can make assertions and tell stories using images.

FOCUS AND MOTIVATE STUDENTS

- 1) Homework Check – Stamp/initial complete homework assignment. Pass back graded work and have students place in the appropriate sections of their binders.
 - 2) **Agenda** – Have students copy the agenda.
 - 3) Discussion – (10 minutes) Introduce the idea of doing a collage or collection of pictures that create a story. Bring some examples of collections of pictures. *Life* magazine and *National Geographic* are good places to find extensive photo-essays. Present the pictures with all of the titles and captions or descriptions removed. Discuss how you might order the pictures to tell a particular story. What might you do if you wanted the story to be a mystery? What might you do if you wanted the story to be an argument in the sense that one makes an assertion and then proves it or shows it by supporting pictures or objects? A good example might be a murder or some type of crime.
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ACTIVITIES – INDIVIDUAL AND GROUP

1. **Group Brainstorm** – (5 minutes) Divide the class into groups of 4. Have them assign group roles (see *Group Roles* below). In their groups have them brainstorm some things that they might try to prove—to their parents, boyfriend/girlfriend, friends, teammates, etc. They can use something they have given as an example in a previous class. If they choose, they can make up a story—something someone else may try to prove—innocence, guilt, worthiness for a raise at work, cheating, etc. Give them about 5 minutes to come up with the ideas and to brainstorm quickly what kinds of pictures they might use.
 2. Activity Instructions: Collecting Pictures – (20 minutes) Have on hand a large stack of magazines. In particular, try to find magazines that have a lot of pictures in them. Explain that they will have 15 minutes to find seven to ten pictures that depict their argument and to lay them out so that the pictures tell the story without any words. Tell them they should probably collect more than 10 pictures to start because they may decide later that they cannot use some of them.
 3. Present and Decipher – (15 minutes) Once they have their pictures and the argument generally spelled out, have the groups present their stories only through the pictures. The task of the rest of the class is to try to decipher the argument without the verbal description. After there have been a number of guesses, have the group who presented the story read the verbal description. Discuss each story. Is the story clear with the pictures? What are the complications of trying to prove something using pictures?
 4. Unit Project Introduction – (5 minutes) Hand out copies of the **Geometric Shapes Project Description** to students and review it with them. Please read lesson 10 and look at the project samples before this class. Students will see them at the beginning of lesson 10, but the demos will give you a clearer idea of how to present the project. The idea is that each group will be expected to depict a series of images in which they have used Photoshop to call attention to shapes that they will study and work with throughout the year. They will have to include at least 10 shapes, but can include as many as they want. Because the shapes will, in some cases, blend into the overall image, some will be difficult to find. The group designing the image will try to make an image that is complex enough to make at least some of the shapes difficult to locate. At the end of the unit, groups will exchange images and try to find all shapes in each. Before you begin working with Photoshop in lesson 10, their next project lesson, you'll show them some examples of the project to get a clearer sense of the overall goal.
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HOMEWORK

None

GROUP ROLES

Recorder – Your job is to record everything your group comes up with in the brainstorm and in the story itself.

Facilitator – Your job is to keep everyone focused on the proof, making sure the arguments make sense.

Manager – Your job is to make sure your group has all of the materials you need to complete the project.

Prove It
How do we create truth?

2:1:5:Introduction to the Group Project

Layout Designer – Your job is to form the layout, determine placement, cut photos down as necessary, and put the final project together—with the help of your group mates.

DOCUMENTATION FOR PORTFOLIO

None