

Photograph Hunt

1. Your task is to find the following objects and use a camera (or video) to take a picture of the objects.
2. Find and take a picture representing **one of the objects** in each category. You will be awarded 1, 2, or 3 points for each category depending on which object you choose to photograph. Be sure to include a caption with each picture, specifying which category and which point value your picture represents.
3. You must completely answer each of category's question(s).
4. Neatly present your pictures and answers to the questions in a creative format. You may create a booklet, poster, PowerPoint, or video.

CATEGORIES:

- A) 1 pt Perpendicular line segments
2 pt Parallel planes
3 pt Plane intersected by a non-perpendicular line segment

Question: Compare and contrast each of the following pairs of geometric objects: line and line segment, line and ray, point and line segment, and line and plane.

- B) 1 pt Two congruent triangles
2 pt Two congruent regular polygons
3 pt Two congruent irregular shapes

Question: What does the word *congruent* mean? Explain what is required for any two shapes to be considered congruent. How can this requirement be shortened for triangles?

- C) 1 pt Isosceles trapezoid
2 pt Irregular trapezoid
3 pt Geometric kite

Question: What makes a quadrilateral a trapezoid? Explain how you can tell if a trapezoid is an isosceles trapezoid (include all the properties of an isosceles trapezoid). Explain how you can tell if a quadrilateral is a kite. Include all the properties of a kite.

- D) 1 pt Rectangle
2 pt Parallelogram
3 pt Rhombus (not a square)

Question: Use the properties of parallelograms, rhombi, and squares to answer and support the following questions.

Does a parallelogram *always* have to be a rhombus? Explain why or why not.
Does a square *always* have to be a rhombus? Explain why or why not.

- E) 1 pt Equilateral equiangular triangle
2 pt Obtuse isosceles triangle
3 pt Acute scalene triangle

Question: Can there be acute angles in an obtuse triangle? Explain why or why not. Can a scalene triangle be equiangular? Explain why or why not.

- F) 1 pt Isometric translation
2 pt Isometric reflection
3 pt Isometric rotation

Question: Describe the differences between the 3 basic transformations and how you can use those differences to identify each type of transformation. Describe in your own words what makes a transformation an isometry.