

## IN THE NEIGHBORHOOD

### Performance Standard (9A/9C).D

Draw a scale map of a neighborhood on a sunny day, write a description of their neighborhood using geometric terms:

- *Mathematical knowledge:* Represent a neighborhood using intersecting and parallel lines, regular and irregular polygons;
- *Strategic knowledge:* Use appropriate strategy to illustrate neighborhood; and
- *Explanation:* Explain completely what was done and why it was done.

### Procedures

1. ***In order to demonstrate and apply geometric concepts involving points, lines, planes and space (9A), and construct convincing arguments and proofs to solve problems (9C),*** students should experience sufficient learning opportunities to develop the following:
  - Identify, draw, and label lines, line segments, rays, parallel lines, intersecting lines, and perpendicular lines.
  - Identify, draw and build regular, irregular, convex, and concave polygons. Differentiate between polygons and non-polygons.
  - Construct a circle with a specified radius or diameter using a compass.
  - Make and test conjectures about mathematical properties and relationships and justify the conclusions.
2. This is designed as a final project type assessment. Discussion and examples must precede it.
3. Distribute one copy of the Student Recording Sheet to each child in the class.
4. Explain to the students that they will be drawing a picture of their ideal neighborhood on a sunny day. **Begin by drawing a sun with a 1” diameter.**
5. Their drawing must include homes, trees, streets, and anything else they might want to add.
6. While drawing is the preferred medium for this activity, magazines could be made available to students in order to cut and paste homes, etc. for placement in their pictures.
7. Be **certain** that students understand they will be writing a description of their neighborhoods using geometric terms.
8. Homes and streets need to be labeled for use in the written description.
9. Evaluate Student work using all three sections of the “Student Friendly” rubric. Each written response will differ according to the student drawing. Student drawings should include a sun with a diameter of 1”. It should include accurate representations of intersecting and parallel lines, convex and concave (optional) polygons, and regular and irregular polygons. The term diameter should be included in the written explanation.

A possible written explanation is as follows:

*My ideal neighborhood has 4 streets. Oak Street and Elm Street are parallel to each other. I know this because if the lines continue on, they will never intersect. Oak Street and Maine Street intersect and are perpendicular to each other. I know this because when they intersect, they form right angles. Elm Street and Maine Street intersect, and they are also perpendicular to each other. Andover Drive and Maine Street intersect, but they are not perpendicular to each other. I know this because when they intersect, they do not form right angles. There are two homes on Maine Street between Oak and Elm. My homes are both drawn using regular convex polygons. I made the sun using my compass and my ruler. I made sure that my sun had a diameter of 1”. The clouds that I drew in the sky are examples of irregular polygons because they are closed but do not have straight edges.*

### Examples of Student Work not available

### Resources

### Time Requirements

- One class period

- One compass and one ruler per child
- Markers, crayons, or colored pencils (optional)
- ½ inch graph paper
- Copies of the “In the Neighborhood” task sheet
- Mathematics Rubric

