Geometry in the Real World

Geometry can open our eyes to patterns in the world around us. Look closely and you will see evidence of geometric shapes, patterns, and principles everywhere.

Spark curiosity and deepen your students' understanding of geometry by turning abstract geometric concepts into tangible examples from everyday life.

Geometry in the Real World: Instructor Examples

Instructor notes:

- Your students will find many creative examples of geometry in the world around them. These provided examples are ideas and suggestions, rather than an answer key.

- Read these lists of examples before giving this worksheet to your students. Consider where they will be searching and what you could add to that space to foster success! (See: *Is your student stumped?* below for more ideas.)

- If a student lists an incorrect item, view it as an opportunity to discuss what would be a better example of that shape or property.

2-Dimensional shapes

1) rhombus: kite, playing card- diamond suit, window, yellow caution road sign, tile, logo, jewelry, baseball diamond, netting, mesh

2) trapezoid: table, bridge, xylophone, planter, lantern, cow bell, lamp shade, shopping basket, (Mayan flat topped pyramid)

3) hexagon: bolt head, soccer ball- white sections, cluster of bubbles on liquid, bee honeycomb, snow flakes (crystalline ice)

4) ellipse: race track, mirror, sink, egg, soap, window, table, baking dish, hairbrush, bread roll, watermelon slice, avocado seed, (planetary orbit)

3-Dimensional Solid Shapes

5) cylinder: battery, water bottle, can, paper roll, pencil, pool noodle, mug, drum, table leg, drinking straw, pencil eraser, log, drinking glass, barn silo, hockey puck, candle

6) rectangular prism: cereal box, book, brick, briefcase, juice box, cabinet, lunch box, smart phone, eraser, dresser

7) cone: carrot, funnel, caution/traffic cone, party hat, sea shell, megaphone, ice cream cone, sharpened pencil tip, paper cup, castle roof, (mountain, volcano)

8) sphere: ball, globe, orange, ornament, ball of yarn, bead, bubble, marble

9) triangular prism: tent, A-frame building, cheese wedge, cake slice, pie slice, door stop, roof

10) hexagonal prism: pencil, bolt and nut, bee honeycomb, hex key wrench, quartz crystal, (basalt hexagonal columns [e.g., Giant's Causeway, Ireland and Devil's Postpile, California, USA])

Principles

11) parallel lines: equals sign (=), lined paper, floor boards, railings, table/chair legs, railroad tracks, road lines, fork tines, telephone wires, U.S. flag stripes

12) perpendicular lines: plus sign (+), calendar, tile grout intersection, graph paper lines, sidewalk edges, window frame, brick mortar, road intersection, RR crossing sign

13) reflection: butterfly wings, symmetrical shapes, leaf, eye glasses, Rorschach inkblot, logo. Letters, numbers, and symbols: (vertically- A, H, I, M, O, T, U, V, W, X, Y, and 8, 0, 88, =, -, +) and (horizontally- C, D, E, H, I, O, X, and 0, 3, 8, =, >, (,), [,], +)

14) dilation: picture frame, bold letter, window frame, donut, bagel, inner tube, sink drain, outline, border, metal washer, sign

15) In which field (e.g., art, nature, architecture), did you find the most examples? Why?

Samples:

Art, because artists use a variety of shapes and geometric principles to create their artwork

Nature, because many geometric shapes and principles were originally named and defined based on observations of the natural world

I found the most examples in architecture, because architects use a full range of geometric shapes and principles as the basis for the designs of their buildings and spaces

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Is your student stumped?

First, consider having them look closely at: *windows, frames, tiles, furniture, shoe soles, woven baskets, fabric patterns, colanders, glassware, food packaging, jewelry, beads, grates, grills, vents, manhole covers, and bike tire treads*.

If there are no visible examples of a shape or principle around you, take the opportunity to search through nature and architecture magazines or websites, you'll be amazed at what shapes they can find!

Geometry in the Real World

Use this scavenger hunt to sharpen your skills and find one of each of these items hidden in plain sight. For each item, describe what you found, where you found it, and make a simple sketch.

2-Dimensional Shapes

What did you find? Where did you find it? Make a sketch.

1) rhombus	**2)** trapezoid
3) hexagon	**4)** ellipse

3-Dimensional Solids

What did you find? Where did you find it? Make a sketch.

5) cylinder	**6)** rectangular prism

7) cone	**8)** sphere
9) triangular prism	**10)** hexagonal prism

Principles

What did you find? Where did you find it? Make a sketch.

11) parallel lines	**12)** perpendicular lines
13) reflection	**14)** dilation

15) In which field (e.g., art, nature, architecture) did you find the most examples? Why do you think that was the case?