

Standards for Mathematical Practice

[MP.1.](#) Make sense of problems and persevere in solving them.
[MP.2.](#) Reason abstractly and quantitatively.
[MP.3.](#) Construct viable arguments and critique the reasoning of others.
[MP.4.](#) Model with mathematics.

[MP.5.](#) Use appropriate tools strategically.
[MP.6.](#) Attend to precision.
[MP.7.](#) Look for and make use of structure.
[MP.8.](#) Look for and express regularity in repeated reasoning.

Standard

KY.6.G.4 Classify three-dimensional figures including cubes, prisms, pyramids, cones and spheres.

Alternate Assessment Target:

No limitations. All parts of the Kentucky Academic Standard are eligible to be included as an assessment item.

Clarifications

Emphasis is on classifying three-dimensional shapes and specifically the attributes of each shape that make it unique to its classification.

Alternate Assessment Clarification:

What are the attributes of each shape that makes it unique from other classifications. Think about the number of sides, vertices, the shape of the base, if the figure has a base or side or vertex.

Connections to Math Practices

MP.2 Reason abstractly and quantitatively.

(Add or remove context to solve problems*)

They begin to visualize the volume of any given shape as a bounded region, filled with smaller cubes of equal size.

MP.3 Construct viable arguments and critique the reasoning of others.

(Explain and defend your reasoning *)

Students explain their reasoning and critique the reasoning of others as they classify the 3-D figures. Why should the figure below in this class vs. another.

MP.6 Attend to precision (Communicate precisely. *)

Key Vocabulary: attributes, base, face, height, diameter, radius, sphere, hemisphere, right angle, classify, 3-dimensional, figure, edge, vertices, vertex

Click here to see more about what teachers and students do to build the math practices: [Engaging the Math Practices and Question](#)

Coherence/Foundational Understandings

Pre-requisite Skills

- Identify the base from a 3-d Figure
- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

Coherence [KY.6.G.4](#)→[KY.7.G.6](#)

[Kentucky Academic Standards for Mathematics](#)

*Clarification to the [math practices by Robert Kaplinsky](#).

Instructional Considerations**Possible Areas of Difficulties/Misconceptions**

- Naming the type of prism requires the ability to identify the base.
- When 3-D figures are not oriented upright, students may mis-identify the base. If a square based pyramid is lying on one of the triangular faces, the student may not identify the base correctly.
- The orientation of the figure can cause confusion so students must see the figure remains the same even if it is turned in any direction.

Suggested Tools/Visual Aids -

- [KY Alternate Assessment Resource Guide](#) (General terms pps 6-11 ; Math terms pps 22-26)
- Giant Geo Solid
- Foldable flat patterns(nets) of each figure
- Virtual manipulative for sorting into classes
- Highlighters for color coding attributes
- Semiconcrete (pictures of 3-D figures for sorting)

Other Considerations:

Students should have concrete experiences that let them feel and rotate each figure to compare the attributes of each 3-d figure.