Just In Time Quick Check

[Standard of Learning (SOL) 4.11](https://www.doe.virginia.gov/home/showpublisheddocument/2970/637982463796030000)

| Strand:Measurement and Geometry |
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| Standard of Learning (SOL) 4.11***The student will identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces) using concrete models and pictorial representations.***  |
| Grade Level Skills: * Identify concrete models and pictorial representations of solid figures (cube, rectangular prism, square pyramid, sphere, cone, and cylinder).
* Identify and describe solid figures (cube, rectangular prism, square pyramid, and sphere) according to their characteristics (number of angles, vertices, edges, and by the number and shape of faces).
* Compare and contrast plane and solid figures (circle/sphere, square/cube, triangle/square pyramid, and rectangle/ rectangular prism) according to their characteristics (number of sides, angles, vertices, edges, and the number and shape of faces).
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| [**Just in Time Quick Check**](#quick) |
| [**Just in Time Quick Check Teacher Notes**](#teacher) |
| Supporting Resources: * VDOE Mathematics Instructional Plans (MIPS)
	+ [4.11 - Characteristics of Solids](https://www.doe.virginia.gov/home/showpublisheddocument/17066/638037647286570000) (Word) / [PDF Version](https://www.doe.virginia.gov/home/showpublisheddocument/17068/638037647292170000)
* VDOE Word Wall Cards: Grade 4  [(Word)](https://www.doe.virginia.gov/home/showpublisheddocument/18650/638041054300800000) /  [(PDF)](https://www.doe.virginia.gov/home/showpublisheddocument/18652/638041054307830000)
	+ Plane Figures
	+ Solid Figures
	+ Polygons: Triangle, Quadrilateral, and Pentagon
	+ Polygons: Hexagon, Heptagon, and Octagon
	+ Polygons: Nonagons and Decagons
	+ Geometric Markings
	+ Rectangle: Right Angle
	+ Square: Right Angle
	+ Sphere, Cube, Cylinder, and Cone
	+ Rectangular Prism: Vertices
	+ Square Pyramid
* Desmos Activity
	+ [Polygraph: 3D Figures](https://teacher.desmos.com/polygraph/custom/5d101590c13fd8562c625cfe)
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| **Supporting and Prerequisite SOL**: [4.10a](https://www.doe.virginia.gov/home/showpublisheddocument/24760/638045371415200000), [3.12a](https://www.doe.virginia.gov/home/showpublisheddocument/24650/638045340286330000), [3.12b](https://www.doe.virginia.gov/home/showpublisheddocument/24654/638045340296930000), [2.13](https://www.doe.virginia.gov/home/showpublisheddocument/24524/638044690124670000) |

SOL 4.11 - Just in Time Quick Check

1. Use the word bank to identify the real life examples of solid figures.

 **Rectangular Prism Cube Sphere Square Pyramid Cone Cylinder**



1. Complete the table.

| **Solid Figure** | **Number of Faces** | **Shape(s) of Faces** | **Number of Vertices** | **Number of Edges** |
| --- | --- | --- | --- | --- |
| **Sphere** |  |  |  |  |
| **Square Pyramid** |  |  |  |  |
| **Cube** |  |  |  |  |
| **Rectangular Prism** |  |  |  |  |

3) Think about how the following plane figures are similar and different from the solid figures. Complete the chart below. Use pictures, numbers and words to explain your thinking.

| **Plane and Solid Figures** | **Similar** | **Different** |
| --- | --- | --- |
| **Circle and Sphere** |  |  |
| **Square and Cube** |  |  |
| **Triangle and Square Pyramid** |  |  |
| **Rectangle and Rectangular Prism** |  |  |

SOL 4.11 - Just in Time Quick Check Teacher Notes

**Common Errors/Misconceptions and their Possible Indications**

1. Use the word bank to identify the real life examples of solid figures.

 **Rectangular Prism Cube Sphere Square Pyramid Cone Cylinder**



*Some students may have difficulty with the pictorial representation of a solid figure. In this case, it may indicate that a student has difficulty when not all faces, edges, and vertices are visible. Teachers may wish to have students explore solid figures using manipulatives and real life examples, and compare them to the pictorial representation.*

1. Complete the table.

| **Solid Figure** | **Number of Faces** | **Shape(s) of Faces** | **Number of Vertices** | **Number of Edges** |
| --- | --- | --- | --- | --- |
| **Sphere** |  |  |  |  |
| **Square Pyramid** |  |  |  |  |
| **Cube** |  |  |  |  |
| **Rectangular Prism** |  |  |  |  |

*Some students may have difficulty filling in the chart because of the vocabulary terms faces, vertices, and edges. Teachers may wish to have students use real life examples to explore these characteristics. With exploration, the corners of each solid figure can be identified as vertices; the flat surfaces of solid figures can be identified as faces; and the line segments where the faces meet can be identified as edges. Additionally, students can be provided access to the Word Wall cards and anchor charts to support them in vocabulary development.*

1. Think about how the following plane figures are similar and different from the solid figures. Complete the chart below. Use pictures, numbers and words to explain your thinking.

| **Plane and Solid Figures** | **Similar** | **Different** |
| --- | --- | --- |
| **Circle and Sphere** |  |  |
| **Square and Cube** |  |  |
| **Triangle and Square Pyramid** |  |  |
| **Rectangle and Rectangular Prism** |  |  |

*Some students may have difficulty filling in this chart because they are unfamiliar with the characteristics of solid and plane figures. This may indicate that a student is unfamiliar with the how solid and plane figures relate to one another. Teachers may wish to have students use manipulatives of plane and solid figures to create Venn diagrams that help students organize their thinking when comparing and contrasting characteristics. Teachers may also wish to provide word banks (i.e. two-dimensional, three-dimensional, face, edge, vertex, congruent, etc.) or sentence frames to assist the students in comparing the characteristics.*