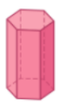
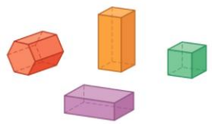
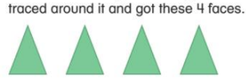
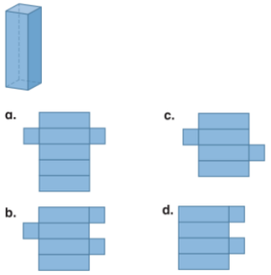
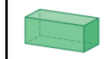
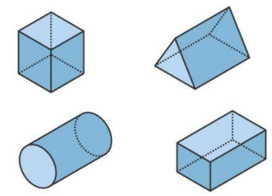
Grade 3 - TLC Thinking Plan - Geometry

Types of Questions	Selecting Tools and Strategies	Representing	Connecting	Problem Solving	Reflecting	Communicating	Reasoning and Proving
3D Geometry	**Structural Thinking** Which 3-D shapes were used to build this house?  **a.** square-based pyramid, cube, and cylinder **b.** cylinder, cone, and square **c.** cube, triangle-based prism, and cylinder **d.** square-based pyramid, cone, and cube Name how each of the 3D figures are used. **Structural Thinking** Which shape is *not* a prism? **a.**  **b.**  **c.**  **d.**  **I have, who has…** See the attached file **Matching Game = term, picture and net** See the attached file	**Representative Thinking** You made a 3-D shape using toothpicks and small balls of clay. You used a lot of small balls. What might the shape have looked like? What was easiest for you to see about the shape? **Representative Thinking / Connective Thinking** Show students a pentagon. Have students contruct a prism and a pyramid.What do you notice about the relationship between prisms and pyramids? **Constraint Thinking** Rafiq has a mystery shape. It has 6 faces and 8 vertices. Which is *not* his possible mystery shape?  **a.** square-based prism **b.** rectangle-based prism **c.** hexagon-based prism **d.** cube **Representative Thinking / Conceptual Thinking** Anisa has a hexagon-based pyramid. She traced around it and got these 4 faces.  Sketch the missing faces she will need to complete the shape. Explain how you know.	**Connective Thinking** Which is a possible net for a square-based prism?  **Connective Thinking** How are they alike? How are they different? Steven describes a figure. "The shape of the base is always **different** from the shape of all the other faces of this figure." Which figure could he be describing? o cube o triangular prism o square-based pyramid o triangular-based pyramid	**Constraint / Conceptual Thinking** A 3-D figure has exactly 12 edges. What figures might I be? / What could the figure look like? How do you know? Explain your thinking.	**Connective Thinking** What do you notice about the relationship between the number of edges and vertices of a 3-D figure? **Connective Thinking** What do you notice about the relationship between prisms and pyramids? **Connective Thinking** How has your thinking changed about 3-D figures?	**Diagnostic Assessment (Communicative Thinking / Representative Thinking / Conceptual Thinking)** - The third little pig's house - identify/name/draw the 3-D figures used - describe the properties of 3-D figures to explain your thinking - if you had to build your own house, what 3-D figures would you use and why? Explain your thinking. **Communicative Thinking** 1. Marcus built a rocket using these things in his recycle box: an extra-large chocolate box, 2 cardboard tubes, and an unusual drink box.  Describe the rocket he might have built, using math language for the 3-D shapes and the faces. (from Nelson's RPM 3)	**Communicative Thinking** Michael says it is possible for a rectangle-based prism to have all different faces. His friend Marco disagrees and says some of the faces must be congruent. Who is correct, Michael or Marco? Justify your answer. **Communicative Thinking** Genevive says this shape has 8 vertices (corners), and it is called a square-based prism.  Do you agree? Why or why not? **Conceptual Thinking** Which One Doesn't Belong?  **Conceptual Thinking** Which One Doesn't Belong?