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| **Lesson Plan – Introduction to 3-D Shapes**  **Developed by:** Jana Nicol **School:** Island View School  **Date:** March 2014 **Grade level:** 2  **Subject:** Mathematics **Unit:** Shape and Space  **Duration:** 60-70 minutes |

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| **Outcomes**  **SS6:** Sort 2-D shapes and 3-D objects using two attributes, and explain the sorting rule.  **SS7:** Describe, compare and construct 3-D objects, including cubes, spheres, cones, cylinders, and pyramids.  **SS9:** Identify 2-D shapes as parts of 3-D objects in the environment  **I Can Statements**  I can sort a set of 3-D objects according to two attributes and explain the sorting rule.  I can tell about common attributes of cubes, spheres, cones, cylinders and pyramids.  I can identify examples of cubes, spheres, cones, cylinders and pyramids found in the environment.  I can create and tell about a 3-D object using materials such as modeling clay.  I can name the 2-D faces of a given 3-D object. | **Materials**   * *3-D Shapes.nbk* * *I Can Statements – SS6 SS7 SS9.doc* * *MI Matrix – 3D Shapes.doc* * *Student Progress Record – Whole Class – 3D Shapes.doc*   **Centre Materials**   * *3D Shapes Booklet.pdf –* found on <http://mrsisclass.blogspot.com> * *3D Shape Scavenger Hunt.doc* * *Polygons and Solids Matching Game.pdf* – found on <http://superteacherworksheets.com> * Playdoh * Student Netbooks * Pencils * Erasers * Scissors * Glue * Markers or crayons | |
| **Technology**  *Check all that apply*  X Teacher laptop  X SMART Board  X LCD projector   * SMART Senteos (class set)   X Computers   * iPad or tablet * iPod or mp3 player(s)   X Speakers | * Webcam * Digital camera * Document camera * Digital microscope * Video camera * Scanner * Colour printer * Calculators   X FM system |

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| **Prior Learning Connections**  In grade one, students were expected to name and sort 2-D and 3-D shapes according to one attribute. Pre-assessment determines that most students could already recall the names of cubes, cones, cylinders, spheres, and pyramids, but that they have limited vocabulary to describe the attributes of these shapes (e.g. face, curved surface, edge, vertex). |

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| **Differentiation/Accommodations**  Reduced number of assigned questions, read questions aloud, FM system. |
| **Special Concerns**  (Classroom management items, medication information, etc). |

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| **Assessment**  **Formative Assessments** – observe students as they work at centres, and track their progress using *Student Progress Record – 3-D Shapes.doc,* record anecdotal notes as needed. |

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| **Procedure** | | |
| **Before the lesson** | Post *I Can Statements – SS6 SS7 SS9.doc* on the wall.  **Prepare Centres (10-15 minutes):**  Place students into five groups, mixed ability. Record.  Centre #1 – Turn on netbooks.  Centre #2 – Print class set of *3D Shapes Booklet.pdf* and put on one table with some pencils, erasers, scissors, glue, and markers (this resource can be found on <http://mrsisclass.blogspot.com>).  Centre #3 – Print one copy of *Polygons and Solids Matching Game.pdf*, cut into pieces, and put on one table (this resource can be found on <http://superteacherworksheets.com>).  Centre #4 – Print class set of *3D Shape Scavenger Hunt.doc,* and put on one table with some pencils and erasers.  Centre #5 – Put Playdoh on one table. | |
| **During the lesson** | **Warm-up (10-15 minutes)**   * Have class sit by the SMART Board. Open *3-D Shapes.nbk* and play the song/video (link found on page 1 of this file). * Review video by asking students to name some three-dimensional shapes and some real-life examples of objects that are those shapes (e.g. a ball is sphere-shaped, a roll of paper towel is cylinder-shaped, etc). * Introduce the I-Can Statements for this unit (posted on the wall).   **Centres (40-50 minutes)**   * Tell the class they will be working in centres in groups. Briefly describe what students will be doing at each centre.   Centre #1 – Netbooks 🡪 Students will play 3-D shape games (links on class website: <http://ivsgrade2.weebly.com>).  Centre #2 – Students will make 3-D shape books. Books are already assembled, and come with a sheet of all of the featured 3-D shapes. On each page, students will fill in the blank (e.g. “A cube is shaped like a \_\_\_\_\_\_\_\_\_\_.” 🡪 they could write dice, Rubix cube, ice cube, etc. in the blank space provided). Then they will cut out the cube, glue it into the space provided, and colour it to resemble the item written about (e.g. colour the cube to look like a dice).  Centre #3 – Students will use the *Polygons and Solids Matching Game.pdf*, to play a memory/matching game. They can put all of the cards face down, take turns drawing two cards, and they can keep all of the pairs they collect. A pair includes a picture of the shape, and the name of the shape. Whoever collects the most matching pairs wins the game.  Centre #4 – Students will complete a 3-D shape scavenger hunt. They can record their findings on the sheet provided.  Centre #5 – Students will construct three-dimensional shapes out of Playdoh.   * Call out names of students in each group. Use a auditory cue (e.g. rainstick) to cue the transition between centres. Review centre norms: * Work cooperatively and quietly. * If you need help, ask your classmates from your group before asking the teacher. * Hearing the rainstick is the cue to tidy up your centre. You must tidy up before moving onto the next centre. * Get earbuds quickly at the beginning of the netbook centre, and put them back quickly before transitioning to the next centre. * Put Playdoh back into containers and seal the lid tightly before leaving the centre. * Write your name on the shape booklets and scavenger hunt sheets, and pass them in before leaving the centre. * Students will have 8-10 minutes to work at each centre, and they must tidy up and pass in work before moving onto the next centre. * Circulate and observe students as they are working, and provide assistance as needed. Record anecdotal notes and record progress on *Student Progress Record – 3-D Shapes.doc*.   **Share/Reflect (5 minutes)**   * After students have had a chance to complete all of the centres, whole class will meet on the floor. * Ask students to pair and share 🡪 Discuss what they have learned today with their partner. Volunteers are welcome to share with the class. | **UDL Guidelines**  2.5 Illustrate through multiple media  3.1 Activate or supply background knowledge  2.1 Clarify vocabulary & symbols    8.2 Vary demands & resources to optimize challenge  5.2 Use multiple tools for construction & composition  4.1 Vary methods for response & navigation  1.2 Offer alternatives for auditory information  4 Provide options for physical action  8.3 Foster collaboration & community  6.2 Support planning & strategy development  6.3 Facilitate managing information & resources  9.1 Promote expectations & beliefs that optimize motivation  3.3 Guide information processing, visualization, & manipulation  9.3 Develop self-assessment and reflection |
| **After the lesson** | **10-15 minutes –** Students will choose one of the following prompts and respond to it in their Math journals, and use words numbers and pictures to explain their ideas:   * What is the difference between prisms and pyramids? * Draw and label as many shapes as you can that have curved surfaces. * Draw and label as many prisms as you can. * Draw and label as many pyramids as you can. * List as many 3-D shapes as you can that have at least one face shaped like a rectangle. * List as many 3-D shapes as you can that have at least one face shaped like a triangle. | |

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| **Notes/Reflections** |