**Planning Template for ECE Programs**

This template can be used for the planning of daily or weekly learning experiences and/or routines, and for the planning of introducing a new interest area and/or materials.

(This planning process is similar to the process of planning for a typical “lesson.”)

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| **Name/Focus of Experience or Classroom Routine/Grade** | Constructing 2D and 3D Shapes | | |
| **Essential Question** | How do you describe and build a 2-D shape? A 3-D shape? | | |
| **Date** | March 6, 2023 | | |
| **Prepared By** |  | | |
|  | | | |
| **Stage 1: Desired Results** | | | |
| **Name(s) of Children**  Is this planning for a whole group experience, a small group, or an individual? | This experience is made for small groups based on the number of materials and space we have. | | |
| **Anticipated Learning Goals**  Will this learning experience focus on Prekindergarten ELEs/Kindergarten curricular outcomes or on a particular ECD domain? | **Essential Learning Experiences/Curricular Outcomes**  **SS2.3**  Describe, compare, and construct 3-D objects, including:   * cubes * spheres * cones * cylinders * pyramids**.**   **SS2.4**  Describe, compare, and construct 2-D shapes, including:   * triangles * squares * rectangles * circles.   **SS2.5**  Demonstrate understanding of the relationship between 2-D shapes and 3-D objects. | **Developmental Significance (Holistic Domains)**  Social Emotional Development:   * Interacting with others   Physical Development:   * Developing fine motor skills * Developing manipulative skills   Intellectual Development:   * Solving Problems (exploring, cause/effect) * Creating and Imagining * Recognizing attributes and characteristics * Language and Emerging literacy (Exploring words, gaining meaning from visual/text materials, representing ideas)   Spiritual Development:   * Experiencing a sense of wonder, awe, and joy * Experiencing heightened sensory awareness * Developing an appreciation of beauty and connection to the natural and man-made world | |
| **Possible Cross-Curricular Extensions**  [CR2.2](https://www.edonline.sk.ca/webapps/moe-curriculum-BB5f208b6da4613/CurriculumOutcomeContent?id=28&oc=64261)  View and explain (with support from the text) the key literal and inferential ideas (messages), important details, and how elements (such as colour, layout, medium, and special fonts) enhance meaning in grade-appropriate visual and multimedia texts.  [CR2.3](https://www.edonline.sk.ca/webapps/moe-curriculum-BB5f208b6da4613/CurriculumOutcomeContent?id=28&oc=64272)  Listen and retell (with support from the text) the key literal and inferential ideas (messages) and important details heard in small- and large-group activities, and follow oral directions and demonstrations.  [MP2.1](https://www.edonline.sk.ca/webapps/moe-curriculum-BB5f208b6da4613/CurriculumOutcomeContent?id=55&oc=24448)  Analyze methods of determining the position of objects relative to other objects. (SI) | **Targeted Vocabulary**  3-D, 2-D, dimensions, sides, face, edges, corners, cubes, spheres, cones, cylinders, pyramids, prisms, triangles, squares, rectangles, circles, octagon, heptagon, pentagon, hexagon, round | |
| **Motivational Set** | ‘3D Shapes Song’ by NUMBEROCK on YouTube to stimulate their thinking about 3D shapes and what makes a 3D shape and activate prior knowledge and to scaffold from learning about 2-D shapes in a previous lesson. | | |
| **Stage 2: Assessment** | | | |
| **Originating idea**  The idea might come from your observations of the children or from your conversations with parents, or both. | **Observations and Interpretation of Children’s Strengths, Interests, Talents**  Working with children, we notice that students are deeply engaged and active in their learning when they can physically explore it. Students can use their creativity and ideas in a meaningful way and take on learning in a way that suits their needs. Students will be able to learn more authentically by being involved directly in the construction of the shapes and are able to grasp concepts more clearly when they can kinesthetically explore what they are learning and understand both physically and intellectually what these shapes entail. Loose parts that can be manipulated into other shapes and forms can also increase fine motor skills while developing an understanding of the outcome, ultimately enhancing their learning in a way that benefits them holistically. | | **Conversations with Parents**  Many parents report that their child learns better with hands-on activities and being able to manipulate variables during their learning to gain a better understanding of the materials. From this common observation, our invitation was designed to facilitate a great deal of hands-on learning guided by the literature and the YouTube video. We can discuss with parents about using everyday items that they may utilize or find important/culturally significant to them to explain the importance of shapes in students’ lives. We may also discuss how participating in simple, everyday activities, such as baking cookies or drawing, can build an understanding of shapes and their relationships to one another. |
| **Documentation**  **Plan** | **Assessment *for* Learning**  **Children’s Representations**  *Artwork, Artifacts, Recorded Thoughts, etc.*  Students will create shapes and be able to take pictures of their creations with iPads throughout the process of building them. This includes showing the 2D shape they create, and how it can turn into a 3D shape. This will then be put into a math floor book for them to look back on and use for future scaffolding. | | **Assessment *of* Learning**  **Recording and Sharing the Learning**  *Anecdotal Records, Photographs, Videotaping, SeeSaw, Learning Story, etc.*  Notes will be taken throughout the process of their building and recreating. Notes about their learning will be uploaded to their online math portfolio, along with pictures of the experience and scribed anecdotal comments that the students make. |
| **Stage 3: Procedures** | | | |
| **Setting/Area and Time** | In the classroom (specifically in creation corner) in the morning (within the first 2 hours of school to maximize focus). | | |
| **Materials including Children’s Literature** | Playdough, toothpicks, pipe cleaners, Lego, wood blocks, items in specific shapes (tipi, ball, logs, dream catcher, drum), shape cards, stands for cards and books.  Literature:  *Captain Invincible and the Space Shapes* by Stuart J. Murphy  A Trapezoid is Not a Dinosaur! By Suzanne Morris  *Round* by Joyce Sidman  *Square* by Mac Barnett  *Building with Shapes* by Adrianna Morganelli | | |
| **Description of Provocation/Transition** | Our invitation involves students constructing 2-D and 3-D shapes from loose parts and manipulating items together to form shapes. Through the invitation, we want students to be able to recognize and name the 2-D and 3-D shapes listed in the outcomes and be able to construct them, either by memory, by relating them to the shapes around them or using the outline on the cards provided. We also want them to begin making connections between 2-D and 3-D shapes and understand the relationship between their characteristics and how they are constructed. The invitation contains cards on a stand to prompt students to construct 2-D and 3-D shapes, as well as telling students to use the materials provided to construct the shapes they see on the cards.  We have a large card that reads, “I can describe, compare, and construct 2-D and 3-D shapes”, along with cards that contain the phrase “can you make a(n)” then a shape listed, with an example outline of the shape. Students can then use whatever materials they see fit to build the shapes from the cards. The cards contain 2-D and 3-D shapes. The 2-D shapes that correspond to 3-D shapes are all colored the same to give students an idea of which ones go together. For students that understand all the shapes, they can use this as a prompt to see the connection between a 2-D shape and their corresponding 3-D shape. We also included a few more complex 2-D shapes (heptagon, pentagon, octagon, decagon, hexagon) to introduce these as shapes to the students who have never seen them, or as a challenge for students who already have a high understanding of the outcomes.  There are 16 cards with shapes listed on them included in the invitation so students can work through the shapes at their own pace and in whatever order they prefer.  We plan to arrange our literature and stands with cards on them on the outside of the invitation to frame the space and invite students in, while also reminding them of the purpose of the activity and what they can explore. In front of one of the prompt cards will be the stack of shape cards that the students can use; they will be placed there so that the students understand which cards to use. Loose parts will be on the left side of the invitation in bowls along with the objects used for modelling shape use, while the right side of the invitation will be space for students to construct their shapes. This way, students are able to explore the materials but remain focused on their own creation and are able to shift focus with ease. Extra stands will be put to the right if students would like to stand their cards up to look at. | | |
| **Possibilities for Intentional Learning/Teaching Strategies**  Include supports and adaptations that might be required when considering the learning needs and diversities of all children and families, including **FNMI content.** | This invitation can be adapted to many different abilities and suits many learning styles and perspectives.  For students who are at the beginning stages of understanding the concept of 2-D and 3-D shapes, they could focus on 2-D shapes and learning the names and facts about their 2-D shapes. The song on the iPad will also help students that are at the beginning stages of learning these outcomes while also refreshing the students’ memories of the idea of 3-D shapes, and the literature used may solidify this information and allow them to place it in the context of daily life.  For the students who are a bit more advanced in this area of math, we would challenge them to make the shapes that are shown on the cards without looking at the example on the card (ie. Getting a partner to read them the type of shape and have them build it, or have their partner describe the shape without saying the shape’s name while the other partner builds the shape). They could also explore if they can turn the more complex 2-D shapes into 3-D shapes, as well as identifying what characteristics changed about them to make them 3-D. Students may not initially understand the differences between 2-D and 3-D shapes or may not know how to translate the image of a 2-D or 3-D shape into a physical shape in front of them. We plan to confront this by encouraging students to really explore the physical attributes of the shapes they see on the cards or in objects, and how that translates to the object they are creating. For example, if a student is having trouble understanding how to make a pyramid from the picture, we can look at the characteristics of the pyramid and explore that physically (ex. How many sides does it have? How can we make all of those sides?)  The variety of materials at their disposal allows for a wide range of thinking and strategies to occur, and students can choose which material they see working with their strategies to create the shapes. We will also provide a variety of real-life examples of these shapes and books that touch on various examples of shapes in real life, mainly ones that could be seen within Indigenous cultures. This can represent the use of 2-D and 3-D shapes within Indigenous cultures and explain the shapes within the context of Indigenous perspectives, as well as the relevance of shapes to connecting to the land and the use of these shapes in both man-made and natural environments. Many 2-D and 3-D shapes have many meanings in Indigenous culture (such as circles, which are a symbol of interdependence in many Indigenous cultures and are found in many different cultural items) and we want to represent that by both displaying how the shapes are used within Indigenous beliefs, but also how the creation of them itself can be a spiritual activity in the way people interact to build the shapes and the emotions and feelings students experience while working with the materials. We will discuss these ideas as the students build with and explore the materials prompted by both the literature and objects within the invitation. | | |
| **Possibilities for**  **Open-Ended Questions** | When the students begin exploring the materials and choosing which ones to use to construct their shapes, questions such as “Why did you choose that material?” may come up. As students dive into the activity and find that they need to problem-solve and strategize to build the shapes, there is a possibility for many questions to be integrated into their experience because of the flexible nature of the invitation.  While the students are building their shapes, some questions include:  “Why did you choose that shape?”  “How can you transform the 2-D shape into a 3-D one?”  “How do you know that the shape you made is 3-D?”  “What are you going to do first to build this shape? Why?”  “Do you find some of the shapes more difficult to build than others? Why?” | | |
| **Description of End/Transition** | The activity will wrap up by taking pictures of their creations, and we will have a sharing circle with peers to show and explain what they created and how they did so (with guided questions such as “What did you do first?” or “Can you explain your process?”). | | |
| **Stage 4: Analysis and Reflection** | | | |
| **Personal Reflection** | Personal Reflection to follow after invitation has been completed and will be attached to this document accordingly. | | |
| **Next Steps** | Now that the relationship between 2-D and 3-D shapes has been introduced, we can explore the relationship between 2-D and 3-D shapes, how they are the same, how they differ, etc. The next essential question may be something like “how can you construct a 2-D shape into a 3-D shape?”, “how are 2-D shapes related to 3-D shapes?” or “What makes 3-D shapes different from 2-D shapes?”. This exploration may include looking at what was created during this invitation through the documentation, and scaffolding onto what questions came about in regard to creating the shapes. | | |

Resources Used:

My Teaching Pal. (2020, September 1). *2D and 3D shape centers*. <https://pin.it/6aLwKWe>

Math songs by NUMBEROCK. (2018, August 6). *3D shapes song for kids: Spheres, cylinders, pyramids, cubes, & cones* [Video]. YouTube. <https://www.youtube.com/watch?v=ZnZYK83utu0&ab_channel=MathSongsbyNUMBEROCK>