Sequence of teaching and learning Experience 1 Creating Shapes	Points to remember
Introduction: • Storybook on different shapes (Shape Up!: Fun with Triangles and other Polygons by David A. Adler) • Asking the focus child on the different names of shapes based on their prior knowledge	**Resources:** Shape sorter: polygons (Scootle 2022) Shape Up!: Fun with Triangles and other Polygons by David A. Adler Playdough Graph paper Pencil
Experiences: • Shape sorter: polygons found on Scootle to discuss the different aspects that are found in different shapes. This will be used so that the student can see the different aspects of the shapes. They will be asked to identify equal sides and other aspects toward shapes. This learning activity could be great to understand what they already do know about shapes that may not be familiar to them. • Discussion about the different things that they had noticed in the storybook and if they were able to identify the aspects of each shape • Using the activities that were displayed within the story to talk about the different types of shapes and physically make them. This goes along with the work sample from the focus child so that they are making the shapes that they were beginning to work out how many sides and corners they may have. This will be done through playdough so that it is more malleable to create the different shapes such as the triangles and polygons. Playdough will be used as to not waste food like the books demonstrates. A piece of graph paper and a pencil will be used to create and map out the quadrilaterals as demonstrated in the book.	**Key vocabulary:** Polygon, triangle, quadrilateral
Conclusion: These activities build upon what the focus child already is aware of when it comes to identifying and describing the features of shapes and objects which leaves them at UGP2 on the National Numeracy Progression framework (National Numeracy Progression Framework 2022). These activities will allow the focus child to understand the different types of shapes and how each are different from one another. They have already demonstrated that they are able to identify how many sides and corners a 2-D shape has. By allowing the student to physically make	**Key questions:** What makes up a polygon?

their own will get the focus child to grasp on how different shapes may be sorted based on their features. They are able to recognise familiar shapes using obvious features such as corners and sides (ACCMG022, Australian Curriculum, Assessment and Reporting Authority [ACARA], 2014).	How is that different to a triangle? Why is a quadrilateral different?
Observations/assessment focus: After the student has made a triangle, polygon and quadrilateral shape and identified the familiar features such as sides, corners and sides, they will be graded on a small rubric on how well they understand these features. From this, it will be easier to see where the student is lining up against other class members and if they need support with aspects that they do not understand completely yet. An observation method that will be used is photographing the student as they create the different shapes.	**Differentiation:** Some differentiation that could be used with students who may not be grasping the learning activity would be to have some guiding questions as well as having pre-built models for the students to see how the different shapes can be built. For students who have more of an understanding of the task can use the Scootle learning activity to further

	their understanding of polygons.
Sequence of teaching and learning **Experience 2 Shadows**	**Points to remember**
Introduction: • Using the student's knowledge from the previous activity and with their knowledge of 2D shapes, the students will be asked to hypothesize what kind of shadow the 2D shape will cast • Storybook on casting shadows and their different shapes (Whose Shadow is This? By Claire Berge)	**Resources:** Lamp/torch Piece of paper Whose Shadow is This? By Claire Berge **Key vocabulary:** 2D, 3D, shape, shadows **Key questions:**
Experiences: • Students explore the relationship between 3D objects and common 2D shapes. They investigate and predict the shape of shadows cast by different 3D objects. Students are also asked to consider different perspectives of a single object and the ways in which its shadow shapes may vary (reSolve 2020). The students will be asked to gather different 2D shapes such a square or triangle and use a light to cast the shadow on the shape to show the shadow the shape on the piece of paper • Using the storybook to establish how shadows can cast different shapes and how the different shapes can look different	

Conclusion: These activities will be done to establish what the students know about how a 2D shape can show to be something different such as a 3D shape that may not be aware of. This way there can also be a development of language when it comes to learning about prisms. When young students engage with activities aimed at improving spatial reasoning, there is potential to also improve learning and performance in practical mathematics problem-solving tasks, scientific inquiries, and other STEM-based tasks (Duff et al. 2021, p.4). The shadow learning activity will develop on what the focus child already knows and bring in new language.	What kind of shadow will a square show? Do you think a rectangle's shadow will be different from a triangles? Can you make the shadow look different?
Observations/assessment focus: The student will be asked to use a variety of 2D shapes so that they can see the different shadows they cast as well as use polygons, quadrilateral as well as triangles to build upon what they have already learnt from previous learning activities. The assessment focus will be on the focus students ability to label the different features of the different shapes and their shadows. The observation focus will be photograph evidence as well as anecdotal records on how the student participated in the learning activity.	**Differentiation:** For the students who need some extra support in this activity, they will be asked to complete the ask and to draw out the shadow the shape has cast. The students who have understanding of the task will be asked to create their own shadows with objects found around the classroom and discuss

	what kind of show will be cast.

Sequence of teaching and learning Experience 3 Zoo Experience	Points to remember
Introduction: • 2D and 3D shape treasure hunt	**Resources:** Treasure hunt list on what to look out for iPad or anything along those lines for the students to take photos of the shapes they have found Pencils and paper to draw the shapes and where they were found Map of zoo Stencils of shapes for struggling learners **Key vocabulary:** 2D, 3D, shape **Key questions:**
Experiences: • With what the students already have learnt about 2D and 3D shapes, they will be taken to the zoo to go on a treasure hunt for different shapes. A practice run in the classroom will be done before the zoo trip so that the students have an understanding of what they are looking for. Once at the zoo, the students will be put into groups and given a list of the different shapes, both 2D and 3D shapes to look for. Students will be given a device to take a photo of the different shapes they have found as well as some paper and pencils to draw where they have found the shape.	
Conclusion: These two activities will allow the students to practically find the different shapes that are made up around them. It will get the students to think about the different shapes, both 2D and 3D, that are around them and how smaller shapes can make up a bigger object. An example of this would be seeing the smaller cylinders that make up a fence with rectangles to hold them all together. These activities will allow the students to see how the things that they are learning about in the class are apart of their world. They will be able to see that their artwork are filled with rectangles and so are the windows of their classroom.	

	Where did you find the three different shapes? How big where each shape? Do you think that there are more shapes around us?
Observations/assessment focus: The observations through these two activities will be how the student interacts with the activities. If they answer with the correct shape or know what the shape with along with identifying why they think that is the shape they think. The assessment focus will be on the correct identification of the shapes and will be assessed on their documentation of those shapes. If the students only drew what they thought was interesting or if they drew the shapes that they had been asked to do. The same goes along with the photos that they chose to document of the different shapes.	**Differentiation:** The learners who are struggling with this task will be given a cut out stencil of different shapes for them to find throughout the zoo. This will be done so that they can visualise the shape they are trying to find. The learners who have an understanding of the task will be asked to find objects that may have more than one shape. An example of this would be a cylinder tree with rectangle branches.

Justification of pedagogy and learning theories:

The pedagogy approach that will be used through this sequence of learning activities will be a constructivism approach where learning has been made to be social and active (Pacheco 2013). This was used so that the students had a social hands-on approach toward the learning activities and this was done so that the students were able to speak to one another through the activities to work through problems they are facing. This way of understanding the world guides actions and informs beliefs, which in turn supports how teachers make meaning from new concepts and events (Kenney et al. 2013, p.788). This pedagogical approach would be used so that students can socially work through problems that they are facing and ask questions that they are unsure about. Students should be active participants in their own learning.

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