

Attachment 2: Tessellations lesson plan and worksheet.

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| Date: 27 April to 30 April | Year Level: Grade 6 | Lesson Duration: 1 hour |
| Title of Lesson: | | |
| Tessellations | | |
| Learning Outcomes and Specific Purpose: | | |
| By the end of this lesson students: <ul style="list-style-type: none">• Should understand what tessellations are, and be able to draw some examples.• Should be able to recognise patterns and name them.• Should be able to create their own patterns.• Should be capable of finding perimeter and area of squares and rectangles.• Should have used and developed appropriate language for comparing objects.• Should be helpful towards peers and work cooperatively in group work. | | |
| Links to VELS: | | |
| Strand: Physical, Personal and Social Learning Domain: Interpersonal Development Dimension: Working in teams <ul style="list-style-type: none">• Students work effectively in different teams and take on a variety of roles to complete tasks of varying length and complexity.• They work cooperatively to allocate tasks and develop timelines. Students accept responsibility for their role and tasks.• They explain the benefits of working in a team.• They provide feedback to others and evaluate their own and the team's performance. | | |
| Strand: Physical, Personal and Social Learning Domain: Personal Learning Dimension: The individual learner <ul style="list-style-type: none">• Students identify, with support, their preferred learning styles and use strategies that promote learning.• They monitor and describe progress in their learning and demonstrate learning habits that address their individual needs.• They seek and respond to teacher feedback to develop their content knowledge and understanding.• They identify and explain how different perspectives and attitudes can affect learning.• They negotiate learning improvement goals and justify the choices they make about their own learning.• They actively develop, monitor and refine protocols that create a positive learning environment in the classroom. | | |

Strand: Physical, Personal and Social Learning

Domain: Personal Learning

Dimension: Managing personal learning

- Students develop and implement plans to complete short-term and long-term tasks within timeframes set by the teacher, utilising appropriate resources.
- They undertake some set tasks independently, identifying stages for completion.
- They describe task progress and achievements, suggesting how outcomes may have been improved.
- They persist when experiencing difficulty with learning tasks.
- They seek and use learning support when needed from peers, teachers and other adults. They practise positive self talk.
- They demonstrate a positive attitude to learning within and outside the classroom.

Strand: Discipline-Based Learning

Domain: Mathematics

Dimension: Space

- Students apply a range of transformations to shapes and create tessellations.

Strand: Discipline-Based Learning

Domain: Mathematics

Dimension: Measurement, chance and data

- Students use metric units to estimate and measure length, perimeter, area.
- They measure as accurately as needed for the purpose of the activity.

Strand: Discipline-Based Learning

Domain: Mathematics

Dimension: Structure

- Students form and specify sets of numbers, shapes and objects according to given criteria and conditions.
- They construct and use rules for sequences based on the previous term.
- They identify relationships between variables and describe them with language and words.

Strand: Interdisciplinary Learning

Domain: Communication

Dimension: Listening, viewing and responding

- Students ask clarifying questions about ideas and information they listen to and view.
- They develop interpretations of the content and provide reasons for them.
- They explain why peers may develop alternative interpretations.
- They describe the purpose of a range of communication strategies, including non-verbal strategies, and evaluate their effectiveness for different audiences.

Prerequisite knowledge/concept/skills/vocabulary required:**How does it link to previous lessons?**

- Work on patterns / tessellations
- Work on perimeter and area

Grouping/s and Physical Space:

The classroom is already grouped into four tables. The children will work at the tables that they are already sitting at. One activity will be placed on each table. The activities will rotate around over four lessons.

Equipment/Resources Required:

- Examples of tessellations
- Example of patchwork quilt
- Patches of graph paper
- Graph paper for practice drawings
- Cardboard for patchwork quilts
- Shapes to trace around
- Mathomats
- Rulers
- Grey lead pencils / erasers
- Pens/pencils/textas to colour with
- Worksheet (attached)

Lesson Structure:

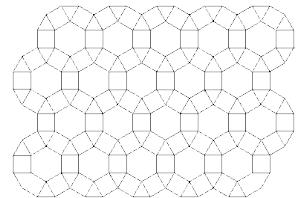
Students are to follow the instructions on the worksheet.

Monitoring of Student Learning:**What I will be looking out for during the lesson:**

- Did students understand what tessellations are?
- Were students able to draw some examples of tessellations?
- Were students able to recognise patterns and name them?
- Were students able to create patterns of their own?
- Were students capable of finding the perimeter and area of squares and rectangles?
- Did students use and develop appropriate language for comparing objects?
- Were students helpful towards peers and work cooperatively in group work?

Tessellations

A tessellation is created when a shape is repeated over and over again. All of the figures fit onto a flat surface exactly together without any gaps or overlaps.



Examples of different tessellations can be found on your table.

This activity requires you to design your own tessellation. Everyone's designs will be stuck together to create a "patchwork quilt" of tessellations.

Use a mathomat, the shapes provided, or draw your own shapes with a ruler to make a patch on a patchwork quilt similar to the example on your table. You will need to do this on the small square of graph paper provided. You can practice different tessellations first on the spare pieces of graph paper. Be sure to use a grey lead pencil so that you can erase any mistakes.

When designing your quilt, you can use one of the various examples of tessellations that you have been shown, or you can create your own one.

Use your own selection of shapes and colours, and ensure that you colour each shape a specific colour, so that the pattern you use stands out. For example, colour all small squares blue, all large squares yellow and all circles green.

Once you have completed your patch, stick it onto the "quilt" provided, along with the other group member's patches.

Answer the following questions about your patch:

- 1. What is the perimeter of your patch?**
- 2. What is the area of your patch?**
- 3. What are the main colours used in your patch?**
- 4. What are the main shapes used in your patch?**

Answer the following questions about your group's quilt.

- 1. What is the perimeter of the quilt?**
- 2. What is the area of the quilt?**
- 3. What are the main colours used in the quilt?**
- 4. What are the main shapes used in the quilt?**
- 5. How do the various patches on the quilt compare to the patch you designed?**