


**12 Chapter Review**

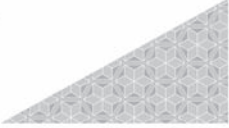
**Key Words**  
For #1 to #4, unscramble the letters for each puzzle. Use the clues to help you solve the puzzles.


- LITGIN HTE EPALN**  
using repeated congruent shapes to cover a region without leaving gaps or overlapping
- LENAP**  
a 2-D flat surface that extends in all directions
- SLTIOEETANLS**  
a pattern that covers a plane without overlapping or leaving gaps
- RMTSAINFNOTAOR**  
examples include translations, rotations, and reflections


**12.1 Exploring Tessellations With Regular and Irregular Polygons, pages 446–451**

5. What different types of polygons are used to create each tiling pattern?

a) 

b) 

c) 

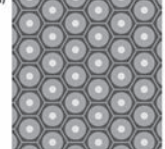
d) 

6. Which of the polygons in #5 are regular polygons and which are not? Explain how you know.

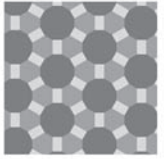
7. Can a regular octagon be used to tile the plane? Explain.

**12.2 Constructing Tessellations Using Translations and Reflections, pages 452–456**

8. What transformation or transformations could be used to create the following patterns?

a) 

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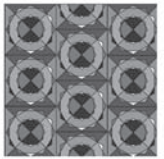
b) 


9. Create a tiling pattern using equilateral triangles and squares. Use one translation and one reflection to create the pattern.

10. Create a tessellation using three regular polygons and two different translations.


**12.3 Constructing Tessellations Using Rotations, pages 457–460**

11. What transformations could be used to create the following patterns?

a) 


b) 

12. Create a tessellation using this irregular polygon. What additional polygon is needed to complete the pattern?



**12.4 Creating Escher-Style Tessellations, pages 461–465**

13. What original shape was used to create this tessellation?



14. What transformations were used to create the tessellation in #13?

15. Create two different Escher-style tessellations from the same square tile design. Use a different transformation for each tessellation.

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**MathLinks 8, pages 466–467****Suggested Timing**

40–50 minutes

**Materials**

- pattern blocks (optional)
- ruler

**Blackline Masters**

Master 9 0.5 Centimetre Grid Paper  
BLM 12–7 Section 12.1 Extra Practice  
BLM 12–11 Section 12.2 Extra Practice  
BLM 12–14 Section 12.3 Extra Practice  
BLM 12–16 Section 12.4 Extra Practice

**Planning Notes**

Have students work individually or in pairs to complete the questions. If they encounter difficulties, remind them to refer to their Foldable for the chapter, their worked exercises for the section, or the modelled examples in the appropriate section of the student resource.

Provide an opportunity for students to ask about and discuss any questions with features they find difficult and to consider alternative strategies for answering these questions. After students complete the review, encourage them to make a list of questions that caused them difficulty and to include the related sections and teaching examples. Students can use this list to focus their studies as they prepare for the practice test.

### Meeting Student Needs

- Provide students with a set of regular polygons and with **Master 9 0.5 Centimetre Grid Paper** to help them when answering questions.
- Allow students to complete the chapter review using a combination of oral descriptions, diagrams, and written answers.
- Have students correct another classmate's answers so they can go back and try to correct their mistakes.
- Encourage students to use their chapter Foldable and to add new notes if they wish.
- Students who require more practice on a particular topic may refer to **BLM 12–7 Section 12.1 Extra Practice**, **BLM 12–11 Section 12.2 Extra Practice**, **BLM 12–14 Section 12.3 Extra Practice**, and **BLM 12–16 Section 12.4 Extra Practice**.

### Gifted and Enrichment

- Some students may already be familiar with the skills handled in this review. To provide enrichment and extra challenge for gifted students, go to [www.mathlinks8.ca](http://www.mathlinks8.ca) and follow the links.

### Common Errors

- Some students may assume that all regular polygons can be used to tessellate the plane.
- R<sub>x</sub>** Encourage students to measure the interior angles of the different shapes before using them to create a tiling pattern.

Assessment	Supporting Learning
<b>Assessment for Learning</b>	
<b>Chapter 12 Review</b> The Chapter 12 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource.	<ul style="list-style-type: none"><li>• Have students check the contents of the What I Need to Work On sections of their chapter Foldable and do at least one question related to each item.</li><li>• Have students revisit any section that they are having difficulty with prior to working on the chapter test.</li></ul>