AAMT Mathematics Resources Catalogue

contents and sample pages

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<th>Starting Points</th>
</tr>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Paul Swan &amp; Len Sparrow</td>
</tr>
<tr>
<td>ISBN/ISSN</td>
<td>978-1-875900-41-1</td>
</tr>
<tr>
<td>Published by</td>
<td>AAMT Inc.</td>
</tr>
</tbody>
</table>

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Tessellations with Gaps

Many regular polygon tiles won’t tessellate on their own, for example, octagons. They leave gaps. But what are these gaps like?

Preparation

Plenty of regular polygon tiles with the same edge length.

The Lesson

Show an example of a tessellation with gaps, for example octagons and squares.
Challenge pairs of children to explore octagons and find gaps other than squares.

Other pairs of children could explore pentagons and gaps.

Some could be challenged to find examples of gaps with shapes that do tessellate by themselves, for example, squares.
Dear Friend

I am delighted to hear that the gnome homes are nearly completed! Well done!

The Board of Old Gnomes desperately needs your help...
* Please investigate the costs of the 15 gnome homes.
* Rates $100 for each square unit of ground covered.
* Paint $10 for each exposed face (not the roof).

For example, design 4

\[
\text{Rates: } 3 \times \$100 = \$300 \\
\text{Paint: } 12 \times \$10 = \$120 \\
\text{Total: } \$420
\]

Please tell me:
* Which is the most expensive home? (deluxe model?)
* Which is the cheapest? (economy home?)
* Anything you notice about the prices?

Write back to the Chief Accountant Gnurnak. Set out your work — diagrams and costs — neatly (his eyesight isn’t very good).

Your gnuble friend, Gnurnak.