

Geometry 9.4
Recognize and describe tessellations

Tessellation
 regular tessellation
 semi-regular tessellation
 uniform
 not uniform

Polygon tiles

1. No FMC, will have exit ticket instead
Add to HW paper (top?)
2. Homework: **class.name.date**
Shared folder by class time tomorrow

Apr 27-11:25 AM

ConceptSummary Compositions of Translations

Glide Reflection	Translation	Rotation
the composition of a reflection and a translation	the composition of two reflections in parallel lines	the composition of two reflections in intersecting lines

1st to em.
2nd reflect

dist = 2h

angle = 2α

Mar 12-7:42 PM

Tessellation:
 Makes a pattern
 It should be repeating
 There should be no gaps in the pattern
 Tiles may not overlap

Apr 27-11:49 AM

A **tessellation** is a pattern of one or more figures that covers a plane so that there are no overlapping or empty spaces. The sum of the angles around the vertex of a tessellation is 360°.

A **regular tessellation** is formed by only one type of regular polygon. A regular polygon will tessellate if it has an interior angle measure that is a factor of 360. A **semi-regular tessellation** is formed by two or more regular polygons.

Apr 27-11:45 AM

Activity 1 Regular Tessellation

Determine whether each regular polygon will tessellate in the plane. Explain.

a. hexagon $4 \cdot 180 = \frac{720}{6}$
 yes $\rightarrow 120^\circ$ $\frac{120n = 360}{120} n = 3$

b. decagon $8 \cdot 180 = \frac{1440}{10}$
 no $= 144^\circ$ $\frac{144n = 360}{144} \frac{360}{144}$

$n = 3$ of 360

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A tessellation is **uniform** if it contains the same arrangement of shapes and angles at each vertex.

Uniform

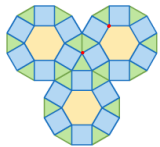
Not Uniform

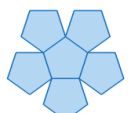
Apr 27-11:45 AM

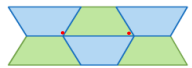
Regular: all parts are the same regular polygon
 Semi-regular: all parts are regular polygons but not all the same polygon

Activity 2 Classify Tessellations

Determine whether each pattern is a tessellation. If so, describe it as regular, semi-regular, or neither and uniform or not uniform.

a.  not regular
Semi-reg
not uniform

b.  no tess

c.  tess
neither
uniform

Apr 27-11:46 AM

Exercises

Determine whether each regular polygon will tessellate in the plane. Write *yes* or *no*. Explain.

1. triangle 2. pentagon 3. 16-gon

— . $3 \cdot 180 = 540$ $14 \cdot 18 = 252$

60 108 157.5

$\frac{180}{3}$ no no

Does it have angles that are factors of 360?

Apr 27-11:48 AM

E.T.
 irregular octagon
 tessellate?
 WB practice 1-8
 10 AM wed

Mar 9-2:19 PM