

Math Unit 4 - STUDY GUIDE

Here are some websites you can explore to practice.

This activity allows you to select the correct angle to rescue the lost aliens:

<http://www.mathplayground.com/alienangles.html>

Drag and drop the virtual protractor to measure the angles:

<https://www.ezscool.com/play/math/learn-and-practice-measuring-angles/988>

• Try this polygon matching game:

http://www.mathplayground.com/matching_shapes.html

Here is a triangle sorting activity:

<http://www.crickweb.co.uk/assets/resources/flash.php?&file=triangles>

Change the shape of a triangle and see the angles change:

<http://www.mathwarehouse.com/geometry/triangles/index.php>

Try to solve these tangram puzzles:

http://nlvm.usu.edu/en/NAV/frames_asid_292_g_3_t_1.html?open=activities&from=category_g_3_t_1.html

• Create your own fractal patterns based on polygons with different numbers of sides:

http://nlvm.usu.edu/en/nav/frames_asid_151_g_3_t_3.html?open=instructions&from=category_g_3_t_3.html

Here is a virtual modeller for translations:

http://nlvm.usu.edu/en/NAV/frames_asid_301_g_3_t_3.html?open=activities&from=category_g_3_t_3.html

• And here is one for reflections:

http://nlvm.usu.edu/en/NAV/frames_asid_297_g_3_t_3.html?open=activities&from=category_g_3_t_3.html

• And here is one for rotations:

http://nlvm.usu.edu/en/NAV/frames_asid_299_g_3_t_3.html?open=activities&from=category_g_3_t_3.html

• Use your knowledge of transformations to get the lowest possible golf score:

<http://www.hoodamath.com/mobile/games/transformationgolf.html>

<https://www.mangahigh.com/en-us/games/transtar>

https://web.archive.org/web/20120527172624/http://www.mathsonline.co.uk/freesite_tour/gamesroom/transform/golftrans.html

• This activity tests your ability to apply transformations in a precise way:

<http://www.onlinemathlearning.com/transformation-game.html>

• This activity challenges you to combine transformations to line up your final image with a target:

http://nlvm.usu.edu/EN/NAV/frames_asid_294_g_3_t_3.html?open=activities&from=grade_g_3.html

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Here's a great website for tessellations - including how to make your own:

<http://www.tessellations.org/tess-what.shtml>

- This activity tests your ability to calculate the perimeter of rectangles:

<http://www.funbrain.com/cgi-bin/poly.cgi?A1=s&A2=3&A15=2&Submit=Start+Digging%21>

- Here's an activity that includes regular polygons as well:

<http://www.mathgoodies.com/lessons/vol1/perimeter.html>

- This activity tests your understanding of both area and perimeter:

http://nlvm.usu.edu/en/nav/frames_asid_282_g_3_t_3.html?open=activities&from=category_g_3_t_3.html

This website allows you to build rectangular prisms and other 3D images, using isometric projections:

http://nlvm.usu.edu/EN/NAV/frames_asid_129_g_2_t_3.html?open=activities&from=topic_t_3.html

- This site lets you design your own rectangular prism, and adjust the view you get of it:

<http://www.shodor.org/interactivate/activities/surfaceareaandvolume/>

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You should be able to:

1. Demonstrate an understanding of angles by:

- identifying examples of angles in the environment
- classifying angles according to their measure
- estimating the measure of angles, using 45° , 90° and 180° as reference angles
- determining angle measures in degrees
- drawing and labelling angles when the measure is specified.

2. Demonstrate that the sum of interior angles is:

- 180° in a triangle
- 360° in a quadrilateral.

3. Develop and apply a formula for determining the:

- perimeter of polygons
- area of rectangles
- volume of right rectangular prisms.

A) You should be able to estimate an angle

B) You should be able to classify an angle as acute, obtuse, right, or straight.

Classify the above angles

C) You should be able to measure an angle with a protractor

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D) You should be able to define and recognize polygons

What is a polygon? Which of the following shapes is a polygon?

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E) You should be able to recognize sides, shapes and angles that are congruent.
What side is congruent to ab? What angle is congruent to x ?

F) You should be able to classify triangles by sides (equilateral, isosocles, scalene)

G) You should be able to classify triangles by angles (acute, obtuse, scalene)
Classify the triangles in 2 ways.

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H) You should be able to figure out the missing angle of a triangle if you know 2 other angles.
What is angle Z?

I) You should be able to figure out the missing angle of a quadrilateral if you know 3 other angles.

J) You should be able to identify and perform a translation
Slide the shape using the line of translation.

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K) You should be able to identify and perform a rotation
Rotate the shape 90 around point Q

L) You should be able to identify and perform a reflection
Flip the shape over line M

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M) You should be able to recognize and perform a glide reflection
Glide the shape

N) You should be able to find perimeter of a rectangle, regular polygon, or other shape
Find the perimeter of the rectangle. Write the formula you use.

Find the perimeter of the regular polygon. Write the formula you use.

O) You should be able to find area of a rectangle
What is the area of the rectangle? Write the formula.

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P) You should be able to find volume of a rectangular prism
What is the volume of the rectangular prism?