THINKING ABOUT GEOMETRY ANSWER KEY

-----DRAFT-----

PLEASE LEAVE COMMENTS TO ADD OR MAKE CORRECTIONS

Hands-on Geometry in the Early Grades (Act.1)

1

Section:	Name:	<u>Page #:</u>	<u>Answer</u> :
1	Tangram puzzles	3	Orderen con use color to hujologist the different pieces. They can also use color to make the bird more beautiful.
1	Tangram puzzles (continued)	4	
1	Geometry Explorations with Tangrams (Act.1)	4	Solution to Activity 2. Geometry Explorations with Tongrams Solution to Activity 2. Geometry Explorations with Tongrams
1	Geometry Explorations with Tangrams (Act.2)	4 5 5 5 9	Solution to Activity 2: Geometry Explorations with Tangrams ivity 3, All problems can be solved with one set of tangrams, except- square with six pieces. To solve this problem, use six pieces from two ie the grid to report your solutions.
1	Geometry Explorations with Tangrams (Act.3)	ļ	3. All problems can be solved with one set of tangrams, except for forming the square with six pieces. To solve this problem, participants can use six pieces from two sets of angrams. Activity 1 Take the cardboard square and cover the square in Figure 2.
		2'	What can you say about the shape and size of the two shapes? What can you say about their areas? Use the cardboard square and cover the shape Figure 3.

6

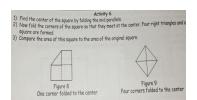
1 Hands-on Geometry in the Early Grades (Act.2) 6-7 Activity 3

1) Use two of the small triangles to cover the square in Figure 2.

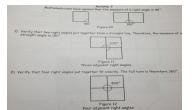
• What can you say about the area of the small triangle and the area of the square? Hands-on Geometry in the Early Grades (Act.3) 1 2) Use the same two triangles to cover the square in Figure 3. Hands-on Geometry in the Early Grades (Act.4) 1 Activity 5 1) Use two small triangles to cover each of the triangles in Figure 6. Hands-on Geometry in the Early Grades (Act.5) 1 7-8 2) Compare the area of the small triangle with the area of the big triangle. 1 Hands-on Geometry in the Early Grades (Act.6) 8 Hands-on Geometry in the Early Grades (Act.7) 1 8

1 Verifying Properties of Squares (Act.5) 14

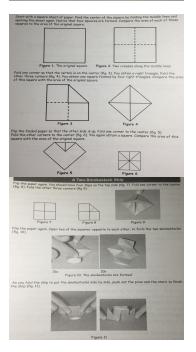
1 Verifying Properties of Squares (Act.6) 14



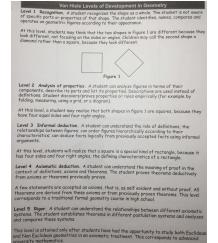
1 Verifying Properties of Squares (Act.7) 14



1 A Two-Smokestack Ship 15

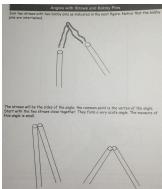


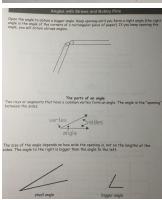
1 Van Hiele Levels 17-18

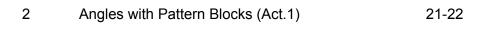


2 Angles with Straws and Bobby Pins

20-21







Agree with Pattern Slockle
Agree 17 The Search
A sporre has four expal side over from event applied. The angular of a spoure ore 90°A sporre has four expal side over from event applied. The angular of a spoure ore 90°
We will rem task at how employ of firm angular of a spoure of the frequency of the spoure of the spour

2 Angles with Pattern Blocks (Act.2)

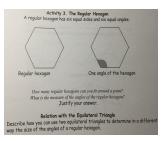
An equilateral triangle has three equal sides and three equal and

Equilateral triangles

Equilateral triangles around a p

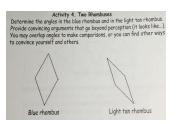
What is the size of the angles to an equilateral triangles?

Justify your answer.



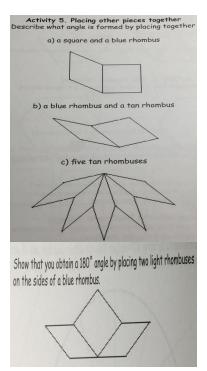
2 Angles with Pattern Blocks (Act.4)

22-23



2 Angles with Pattern Blocks (Act.5)

23



2 Angles with Pattern Blocks (Act.6)

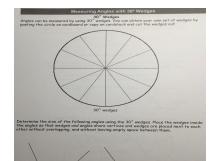
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Activity 6. Verifying sums of angles

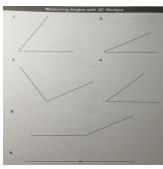
Give a convincing argument (beyond perception), that you can form a 360° angle with two regular hexagons and two equilateral triangles.

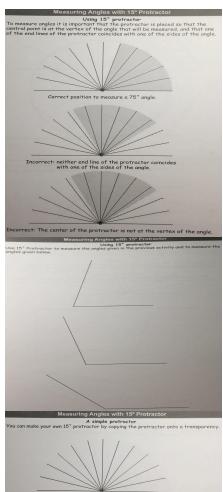
Give a convincing argument that you can form a 360° angle with three equilateral triangles and two squares.

2 Measure Angles with 30 (degree) Wedges 23-24



2 Measure Angles with a 15 (degree) Protractor





Activity 1

Describe the following benchmark angles using your own words: 0°, 30°, 45°, 60°, 90°, 120°, 135°, 150°, and 180°. For example, 45° is half a right angle; 60° is the angle of an equilateral triangle; 120° is the angle of a regular hexagon.

Geometry Triangles

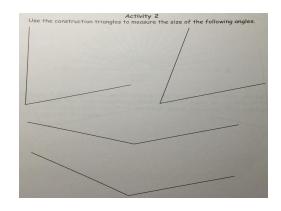
Construction triangles are helpful to develop a feeling for the size of angles using benchmark angles 30°, 45°, 60° and 90°. Identify the sizes of the different angles in the geometry triangles.





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2 Benchmarks for Angles (Act.2)



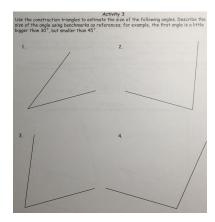
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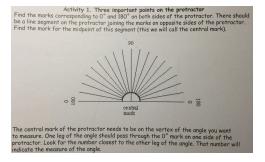
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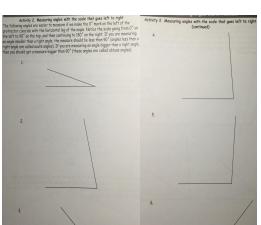
2 Benchmarks for Angles (Act.3)



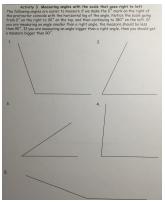
2 Measuring Angles with a Protractor (Act.1)



2 Measuring Angles with a Protractor (Act.2)



2 Measuring Angles with a Protractor (Act.3) 26



2 Measuring Angles with a Protractor (Act.4) 26

