



Geometry Journey Video Series

Program #3

Angles

**Satellite Broadcasting
VHS
and Internet/Intranet Streaming**



Topic

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Program #3 - Angles

Program Description

This video is designed to help students learn an important concept in geometry: angle. All aspects of this concept are introduced, including protractor, angle addition postulate, congruent angles, straight angle, right angle, acute angle, obtuse angle, adjacent angles and linear pair, complementary angles, supplementary angles, vertical angles and angle bisector.

This program is the #3 episode in the fifteen 15-minute Geometry Journey Series.

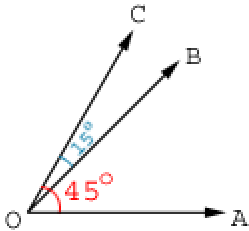
Synopsis

This program will cover the following topics:

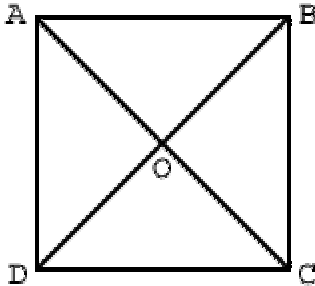
1. Angles
 - a) Protractor
 - b) Angle Addition Postulate
 - c) Congruent Angles
 - d) Straight Angle
 - e) Right Angle

2. Pairs of Angles
 - a) Adjacent Angles and Linear Pair
 - b) Complementary Angles
 - c) Supplementary Angles
 - d) Vertical Angles
 - e) Angle Bisector

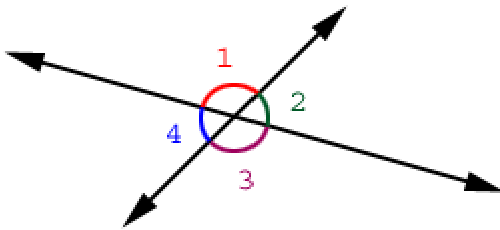
- 1) The measure of angle AOC is 45° and the measure of angle BOC is 15° . What is the measure of angle AOB?



- 2) ABCD is a square. List all right angles you can find in the figure.



- 3) How many adjacent angles are there in this figure? How many linear pairs?



- 4) Find the measures of the two complementary angles, one of which is twice the other.

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Discussion Questions

Question: How can we use a protractor to measure an angle whose sides are too short to intersect the semicircle of the protractor?



- 1) The measure of angle AOC is 45° and the measure of angle BOC is 15° . What is the measure of angle AOB?

Answer: $m\angle AOB = m\angle AOC - m\angle BOC = 45^\circ - 15^\circ = 30^\circ$

- 2) ABCD is a square. List all right angles you can find in the figure.

Answer: $\angle A$ ($\angle BAD$), $\angle B$, $\angle C$, $\angle D$, $\angle AOB$, $\angle BOC$, $\angle COD$, and $\angle DOA$.

- 3) How many adjacent angles are there in this figure? How many linear pairs?

Answer: There are 4 adjacent angles: 1-2, 2-3, 3-4, and 4-1. All the adjacent angles form linear pairs.

- 4) Find the measures of the two complementary angles, one of which is twice the other.

Answer: Assume that one angle is A and the other angle is B. In addition, $m\angle B = 2m\angle A$.

Since $m\angle A + m\angle B = 90^\circ$ (given), we have $m\angle A + 2m\angle A = 90^\circ$.

Hence, $3m\angle A = 90^\circ$. $m\angle A = 30^\circ$.

$m\angle B = 60^\circ$.

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Hints to Discussion Questions

Question: How can we use a protractor to measure an angle whose sides are too short to intersect the semicircle of the protractor?

Answer: Extend the sides of the angle because the measure of an angle does not depend on the lengths of its sides.



- End -