

# Mr. Bo Jangle, What's Your Angle?

## Summary

Activities help students identify angles found in the real world and classify and draw them.

## Main Core Tie

Mathematics Grade 4

[Strand: GEOMETRY \(4.G.\) Standard 4.G.1](#)

## Additional Core Ties

Mathematics Grade 4

[Strand: GEOMETRY \(4.G.\) Standard 4.G.2](#)

## Group Size

Large Groups

## Materials

Invitation to Learn

Chenille stems

Instructional Procedures

- *Shapes, Shapes, Shapes*

Crayons

- [\*Growing Tree\*](#)

- [\*I Spy an Angle\*](#)

Scissors

Glue

Additional Resources

Books

*Shapes, Shapes, Shapes*, by Tana Hoban; ISBN 0-688-14740-2

*Sir Cumference and the Great Knight of Angleland*, by Cindy Neuschwander; ISBN 1-57091-169-X

## Background for Teachers

Students need to have been previously taught that an angle consists of two rays sharing the same endpoint. Angles look different depending on their size. Right angles are most commonly referred to as a square corner because of the  $90^\circ$  angle they make. Angles smaller than a right angle, are referred to as acute and will fit inside any right angle because they measure less than  $90^\circ$ . Angles greater than a right angle are named obtuse. They are bigger than  $90^\circ$ . These angles make up shapes found in the world around us.

## Intended Learning Outcomes

4. Communicate mathematical ideas and arguments coherently to peers, teachers, and others using the precise language and notation of mathematics.
5. Connect mathematical ideas within mathematics, to other disciplines, and to everyday experiences.

## Instructional Procedures

Invitation to Learn

Students will play the role of a clock. Their arms will create times found throughout the day. First

students will make 9:30 using their arms. This time represents a right angle. Next students will elapse time to 10:15. This will represent an angle that is greater than the right angle. Finally students will once again elapse time to make 11:05. This angle is less than a right angle. After students have made all three angles with their arms they will recreate them using 3-6 inch chenille stems. These angles will be taped into their math journals. Students will label each angle.

#### Instructional Procedures

Students will look at the book *Shapes, Shapes, Shapes* to identify angles found in the real world. With the help of the teacher and an angle tool they will classify each angle they find as right, greater, or less than a right angle.

Students will cut out the *Growing Tree* and paste it into their math journals.

Using red, blue, and green crayons students will classify each angle the tree limbs make.

Red -- Right Angles, Blue -- Greater Than Right, Green -- Less Than Right

Students will create a book where they will record angles found within their environment.

Students need to cut out the two boxes found on the *I Spy an Angle* page. The top box is the title and should be glued to the front of their books. The bottom box is a reference guide for students. It needs to be glued to the back of the title page.

Using a local newspaper, have students search for items that contain angles. Once they find some, they need to cut them out and glue them into their books. After each one is glued, students need to indicate what type of angle it contains.

Students need to take their angle books and a pencil outside to the playground. They need to observe their environment and draw objects that contain angles in their books. When the students get back into the classroom they need to classify each angle that they drew.

Have students share with the class the items that they drew in their *I Spy an Angle* books. Allow them to explain the process they went through to classify each one of their angles.

#### Extensions

##### Curriculum Extensions/Adaptations/ Integration

Take pictures of the environment that your students live in. Enlarge the pictures to 5x7 or 8x10. Compile these pictures into a book for your students to look at. Have your students go through these pictures searching for angles. As they find some, students can work with a partner to classify them.

Find a local map of your area and enlarge it. Have your higher students search for roads that intersect. These students can determine what type of angle these intersecting roads create.

Using a Zoome Tool Kit students need to create objects made up of all angle types. After they are finished have students classify several angles found within the creation.

##### Family Connections

Have students take their *I Spy An Angle* books home. They need to draw three different items seen around their home environment. Each item must contain a different type of angle.

#### Assessment Plan

Bring into the classroom several real world items that contain angles. Have students classify each angle that is found in these items.

#### Bibliography

##### Research Basis

Milson, J. (1979). "Geometry and the Real World." *School Science and Mathematics*. 79(8) 695-700. Students often feel geometry is useless because it is presented abstractly not relating to their own world. Only when teachers apply geometry to other areas do students begin to appreciate it. When students are shown the practical side of geometry as applied to science and geometric forms found

around them, they feel this mathematic area is worth learning.

Browning, C. A., Garza-Kling, G., & Sundling, E. H. (2007). "What's Your Angle on Angles?" *Teaching Children Mathematics*. 14(5) 283-287.

Students need to be given the opportunity to explore the definition of an angle. As students are exposed to angles using different mediums, they will begin to grasp what an angle actually is. Their angle definitions need to be challenged and expanded upon continually. Students need to share their discoveries with others.

Authors

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