

The Angle Tangle

Summary

By the end of this activity students should be able to identify three types of angles, know that angles are measured in degrees, and be able to measure angles using protractors or angle rulers.

Materials

- 2 balls of yarn
- A-Z cards
- 12 angle cards
- Rulers
- Overhead projector
- Angle rulers
- Protractors
- Pattern blocks
- [360-degree Circle](#)
- Whiteboards
- Dry erase markers
- 4" Angle manipulative
- Large angle manipulative
- [Angle Assessment](#)
- Crayons
- White art paper

Additional Resources

Media

Find-the-Angle Pro Ruler: Item #FA-779 Lakeshore Elementary 2007-08 1-800-778-4456

<http://www.lakeshorelearning.com>

AngLegs Item #DG205057TS Summit Learning 1-800-777-8817 summitlearning.com

Basic Geometry Blackboard Topper. This is a chart to display in your room for a quick review of line concepts. (It includes lines, angles, polygons, and solid shapes) Summit Learning 1-800-777-8817 or online at www.summitlearning.com. Item Number DG20368ITS

Background for Teachers

Prior knowledge needed to complete this activity: Be able to identify parallel, intersecting, and perpendicular lines. By the end of this activity students should be able to identify:

Right angle: A 90-degree angle

Acute angle: An angle that is less than 90 degrees

Obtuse angle: An angle that is greater than 90 degrees

Know that angles are measured in degrees and develop benchmark angles (e.g. 45 degrees, 60 degrees, 120 degrees) and be able to measure angles using protractors or angle rulers.

Intended Learning Outcomes

5. Connect mathematical ideas within mathematics, to other disciplines, and to everyday experiences.
6. Represent mathematical ideas in a variety of ways.

Instructional Procedures

Extensions

Struggling learners can be paired with more advanced learners

Angle Tangle: Assign students to draw 5-7 straight lines with several intersections. Then connect the endpoints of the lines. Mark the angles created within in the design and color code them by right, acute, and obtuse angles. Color the rest of the design.

String Art: Do a line design but give students string, oaktag, and safe plastic needles. Have them make the design using the string.

Use AngLegs sets which include connecting pieces to form angles and a protractor that attaches to the pieces for independent practice in measuring angles.

Integrating Technology: Take a digital camera and take your class on an "Angle Hunt". Have them identify angles in architecture, machines, nature, etc. Take photographs of the students and the angles. Use them to make a Power Point presentation.

Family Connections

Have students enlist the help of their families to go on an "Angle Hunt" at their homes. Have them find and describe at least one example of each type of angle.

Assessment Plan

Use the *Angle Assessment* blackline as a final assessment.

Bibliography

John Sutton, J., Krueger, A., (2002). *EdThoughts: What We Know About Mathematics Teaching and Learning*, (92).

Brain research demonstrates that: the more senses used in instruction, the better learners will be able to remember, retrieve, and connect the information in their memories. Physical experiences or meaningful contexts can provide learners with strong blocks for building knowledge. Providing our students with many different types of activities will help them learn the concepts or skills we are presenting.

Marzano, R.J., Pickering, D., & Pollack, J.S. (2001). *Classroom Instruction that Works: research based strategies for increasing student achievement*. ASCD, Alexandria, VA.

This text identifies instructional strategies most likely to lead to improved student learning. It looks at the research and theories behinds these strategies and gives suggestions for implementing in the classroom. One of the strategies discussed is kinesthetic activity that uses physical movement to generate an image of the knowledge in the learner's mind. Physically making things such as geometric shapes helps students connect terms and definitions to the actual things. Drawing pictures or symbols is also a powerful way to generate nonlinguistic representations in the mind.

Authors

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