

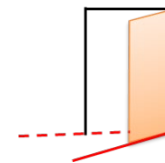
TEST ANGLES – RIGHT, ACUTE, OBTUSE.

INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

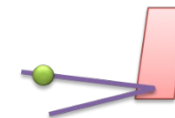
- In pairs, children each construct angle testers to test angles as the relative slant of 2 arms that meet at a vertex. They select shapes or objects with angles as the relative slant of 2 arms that meet at a vertex. Children estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle. They record the angle, labelling the vertex and the arms. If a right angle, children record the right angle using a square in the vertex. **Reflection:** How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?
- In pairs, children each construct angle testers to test angles as the relative slant of 2 arms that meet at a vertex. They select objects in the room with angles as the amount of turn around a vertex, for example, scissors, a door, analog clock hands. Children estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle. They record the angle, labelling the vertex and the arms. If a right angle, children record the right angle using a square in the vertex. **Reflection:** How can we use angle testers to investigate angles that are the amount of turn around a vertex?
- In pairs, children estimate, then use angle testers to test angles in capital letters. **Reflection:** How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex? What is a right angle?
- In pairs, children measure angles formed by the 2 hands on an analog clock face. (Links to TIME). Children estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle. Children record the angle, labelling the vertex and the arms. Children record the time. **Reflection:** How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex? What is a right angle?
- In pairs, children measure angles formed by the movement of 1 hand on an analog clock face. (Links to TIME 12). Children estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle. Children record the time and the angle, labelling the vertex and the arms. **Reflection:** How can we use angle testers to investigate angles that are the amount of turn around a vertex? What is a right angle?

- In pairs, children measure angles formed by the opening of a door. Children estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle. Children record the angle, labelling the vertex and the arms. **Reflection:** How can we use angle testers to investigate angles that are the amount of turn around a vertex? What is a right angle?



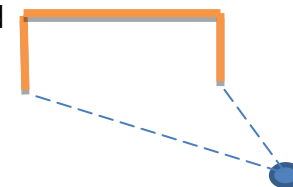
- In small groups, children wet a tennis ball and roll it at different angles towards a brick wall. The ball will leave a wet track of its path. Children use angle testers to test the angle created.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?



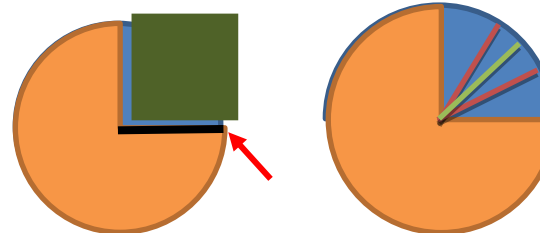
- Children place a ball on a football field. They use string to make the angle between the ball and the goal, using the ball as the vertex and the goal posts as the end of the arms. They use angle testers to test the angle, then attempt to score a goal from that angle.

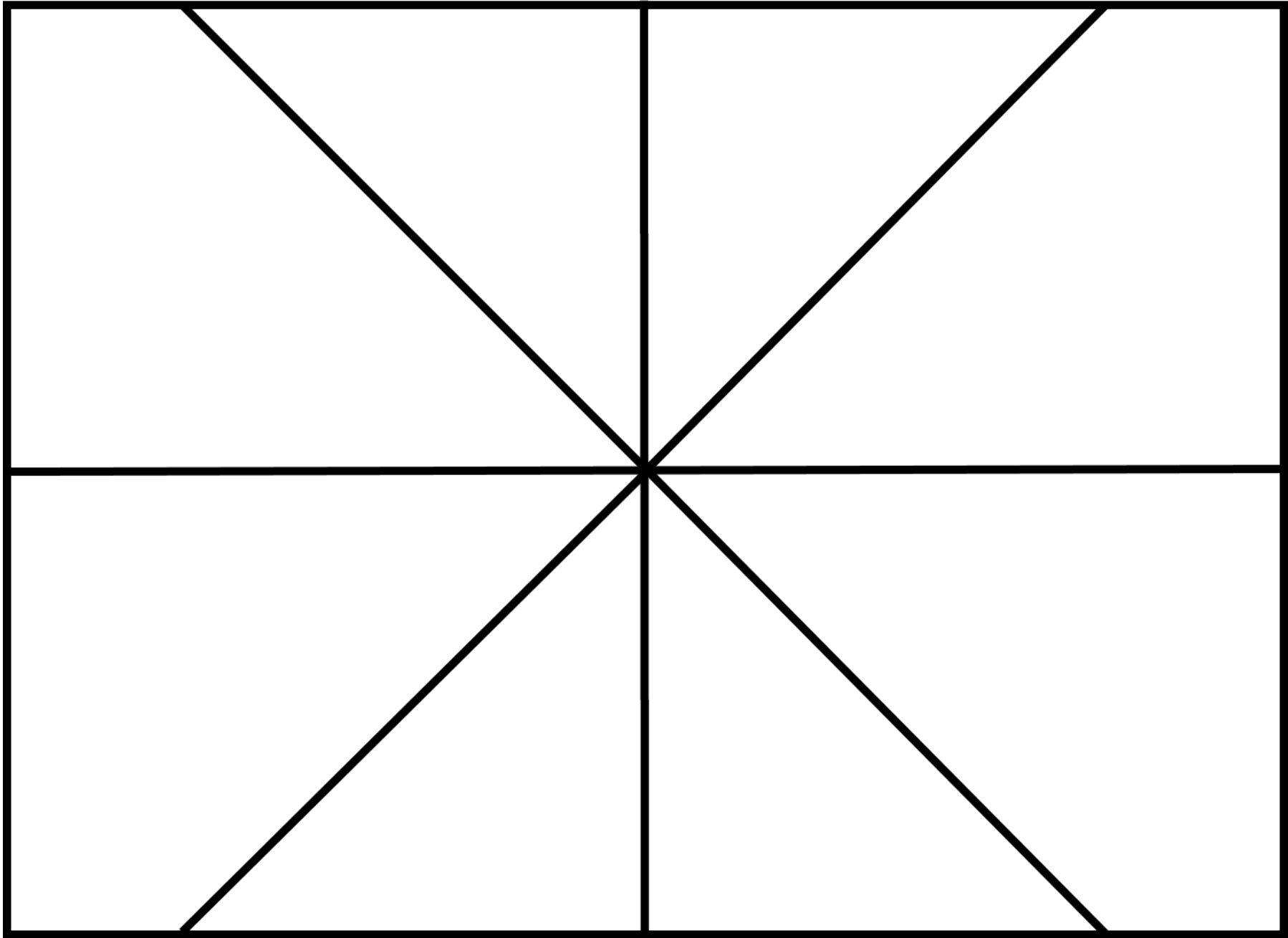
They work out whether it is easier to score goals with a wide angle or a narrow angle. **Reflection:** How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?

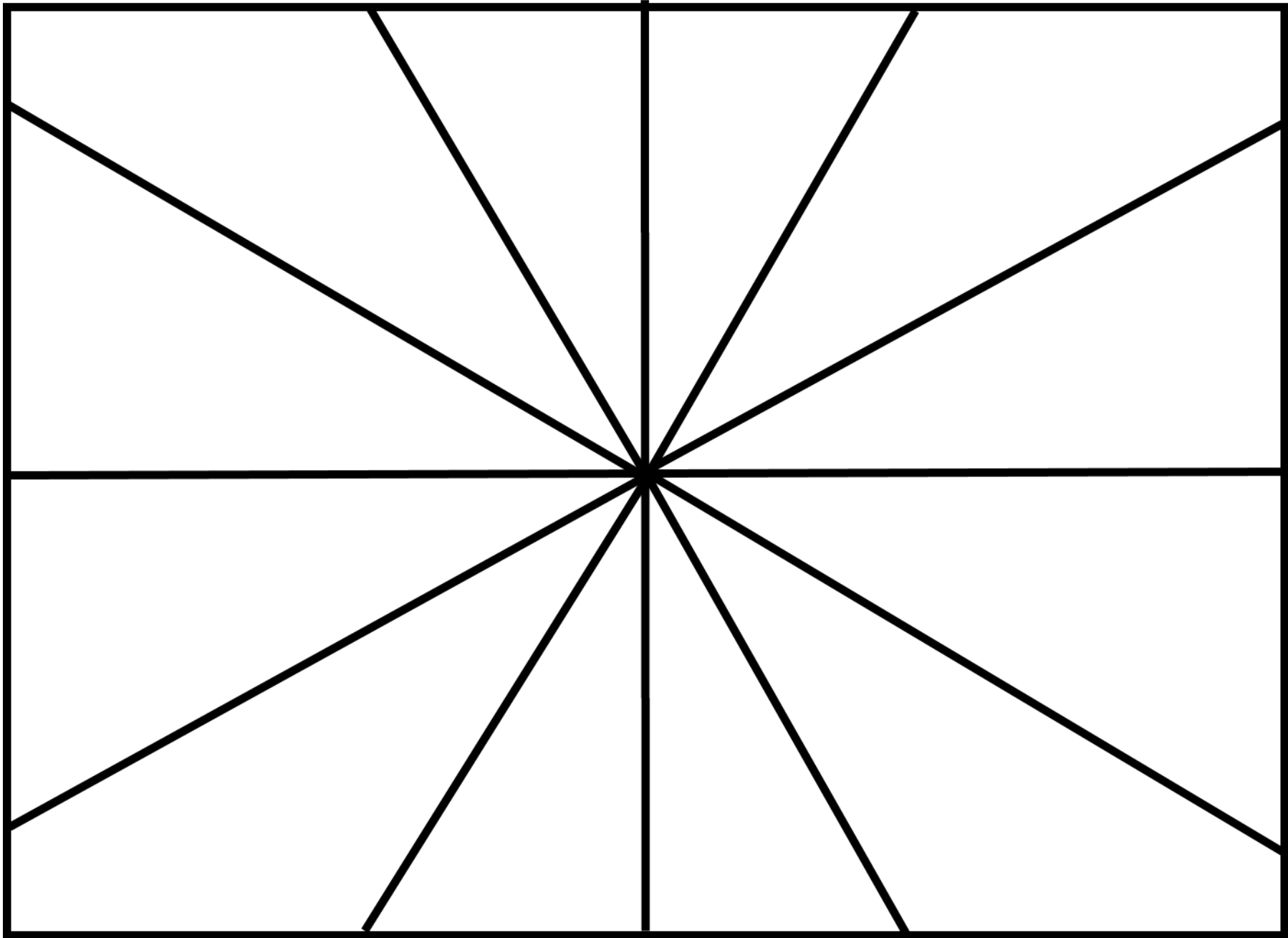


- In pairs, children make an angle tester using [2 circles](#) cut with a slit, for example, Children could record a third, a half, two-thirds, one and half, one and a third, one and two-thirds right angles on the circle.

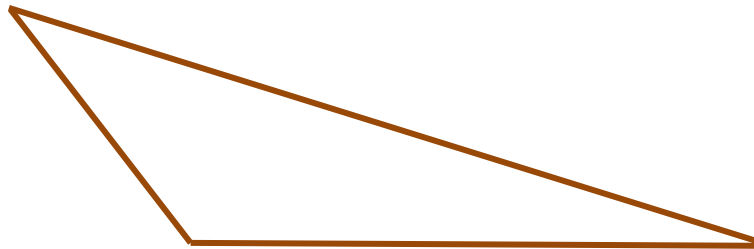
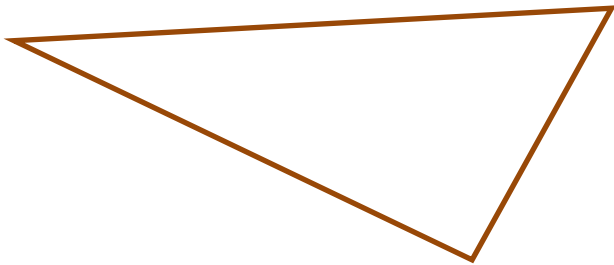
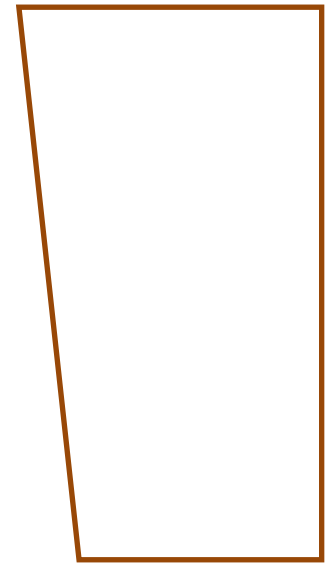
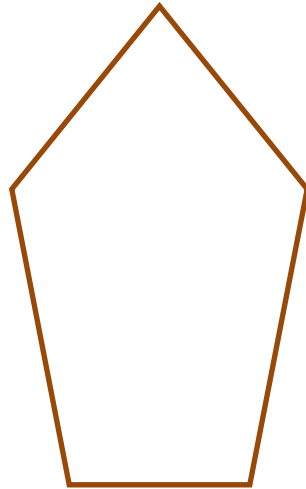
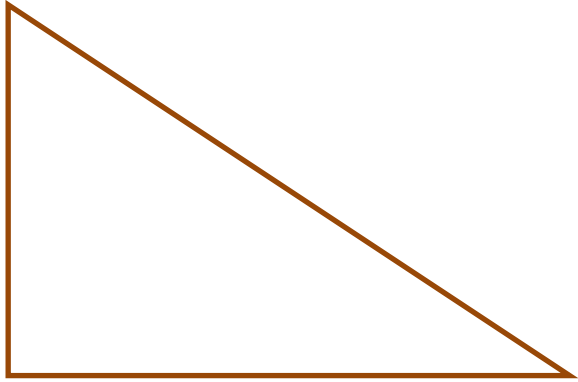
Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?



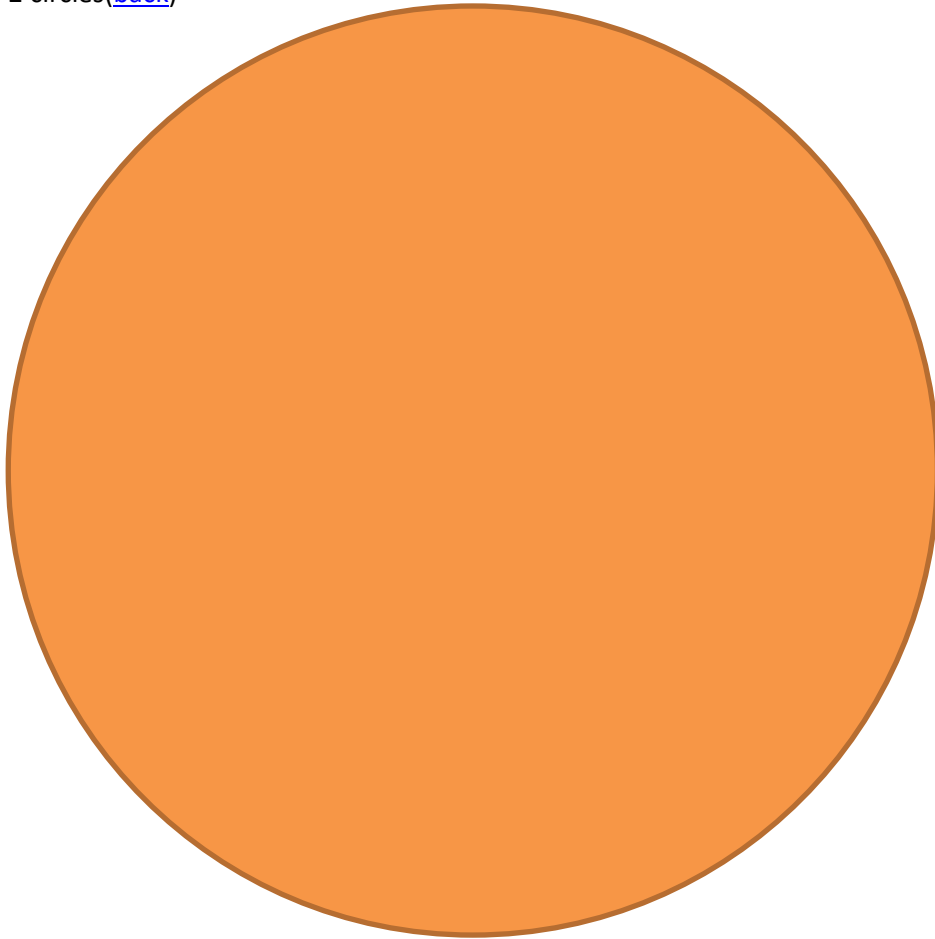




shapes ([back](#))

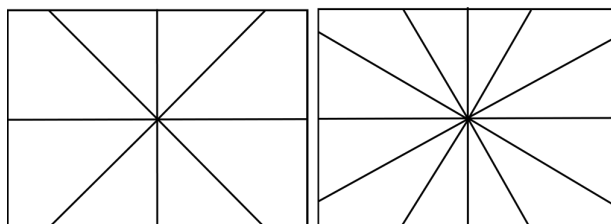


2 circles([back](#))



Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers to test angles as the relative slant of 2 arms that meet at a vertex.



Select shapes or objects with angles as the relative slant of 2 arms that meet at a vertex.

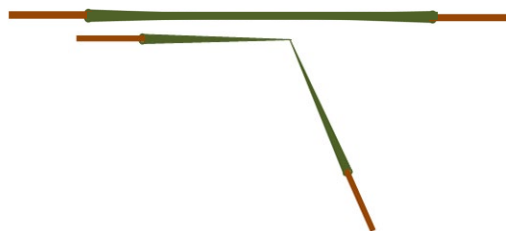
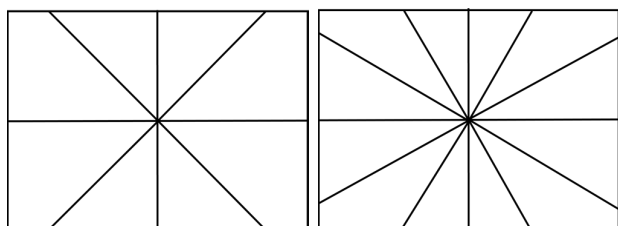
Estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

Record the angle, labelling the vertex and the arms. If a right angle, record the right angle using a square in the vertex.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?

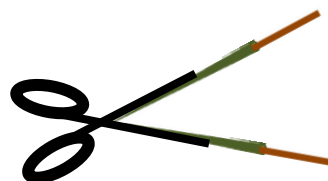
Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers, and a straw and chenille stick angle tester, to test angles that are the amount of turn around a vertex.



Select objects in the room with angles as the amount of turn around a vertex, for example, scissors, a door, analog clock hands.

Estimate and test whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

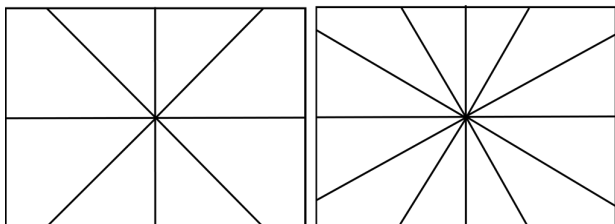


Record the angle, labelling the vertex and the arms. If a right angle, record the right angle using a square in the vertex.

Reflection: How can we use angle testers to investigate angles that are the amount of turn around a vertex?

Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers, and a straw and chenille stick angle tester.



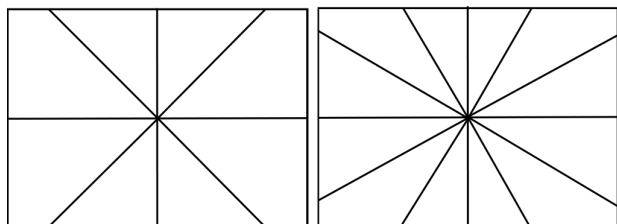
Estimate the size of angles in capital letters.

Select and use an appropriate angle tester to test the angles in capital letters.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex? What is a right angle?

Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers, and a straw and chenille stick angle tester.



Select an analog clock

Turn the hands to create an angle between the hands.

Identify the angle as the relative slant of two lines that meet at a vertex.

Identify the arms and the vertex of the angle.

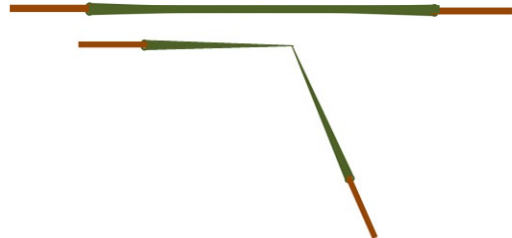
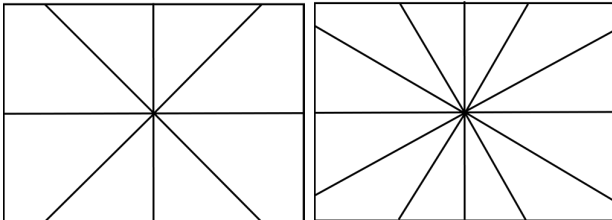
Record the time and use the angle testers to test and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex? What is a right angle?

Investigating Using Angle Testers to Test Right, Acute and Obtuse Angles

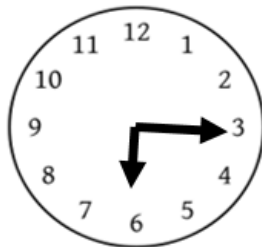
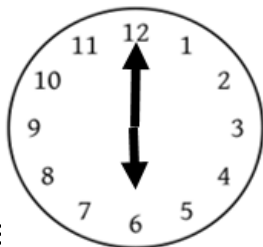
MEASUREMENT AND GEOMETRY 40 Use angle testers to test angles as the relative slant of 2 arms that meet at a vertex, and angles as the amount of turn around a vertex, with 2 lines and angles with 1 line that are right angles, obtuse angles and acute angles.

Construct 2 paper angle testers, and a straw and chenille stick angle tester.



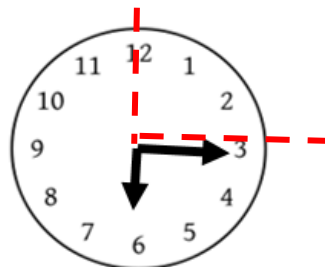
Select an analog clock

Turn 1 hand to create an angle between the start time and the end time, for example,



Identify the :

Identify the arms and the vertex of the angle, for example,

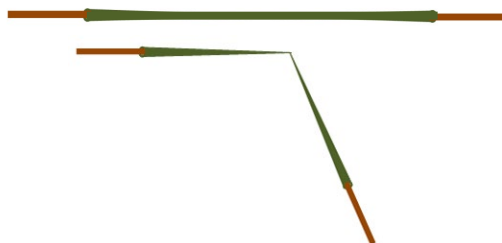
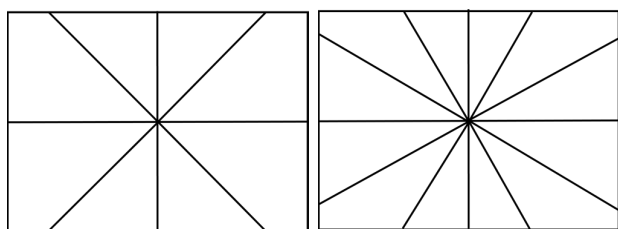


Record the time and use the angle testers to test and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

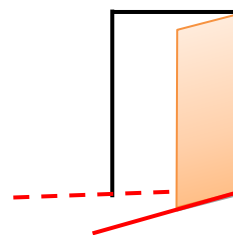
Reflection: How can we use angle testers to investigate angles that are the amount of turn around a vertex? What is a right angle?

Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers, and a straw and chenille stick angle tester.



Open a door to create an angle, for example,
Identify the angle as the amount of turn around a vertex.
Identify the arms and the vertex of the angle, for example,

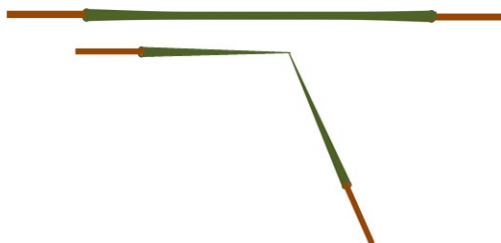
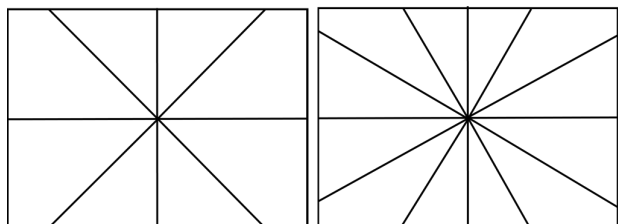


Record the door angle and use the angle testers to test and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

Reflection: How can we use angle testers to investigate angles that are the amount of turn around a vertex? What is a right angle?

Test Angles – Right, Acute, Obtuse.

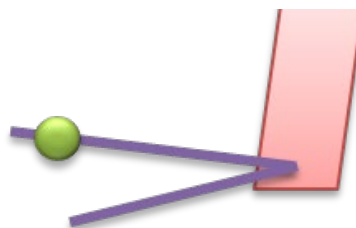
Construct 2 paper angle testers, and a straw and chenille stick angle tester.



Wet a tennis ball.

Roll it at different angles towards a brick wall.

The ball will leave a wet track of its path.

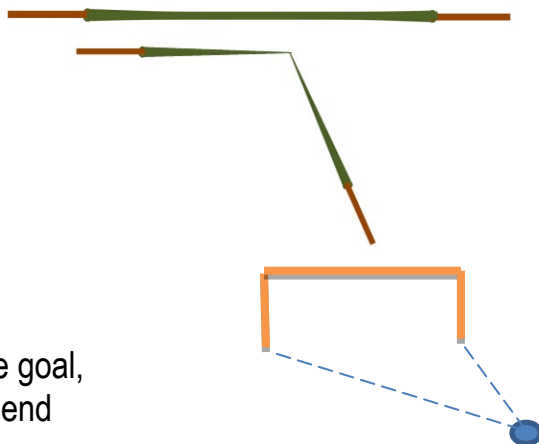
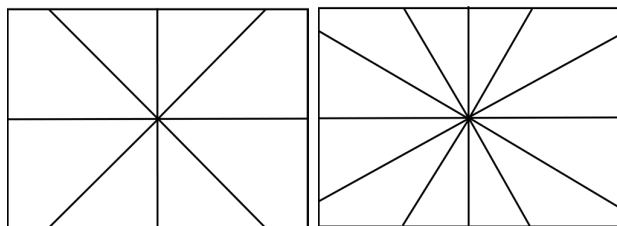


Record the angle and use the angle testers to test and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ right angles - an obtuse angle.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?

Test Angles – Right, Acute, Obtuse.

Construct 2 paper angle testers, and a straw and chenille stick angle tester.



Place a ball on a football field.

Use string to make the angle between the ball and the goal, using the ball as the vertex and the goal posts as the end of the arms.

Use angle testers to test the angle.

Attempt to score a goal from that angle.

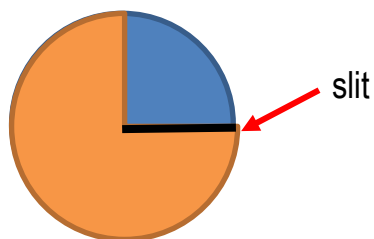
Is it easier to score goals with a wide angle or a narrow angle?

Record the angle and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ right angles - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative

Test Angles – Right, Acute, Obtuse.

Make an angle tester using 2 circles cut with a slit, for example,



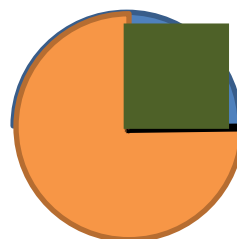
Select a shape.

Identify the angles on the shape.

Identify the angle's arms and vertex.

Identify the angles as the relative slant of 2 arms that meet at a vertex.

Turn one circle to create the angle on the shape.



Estimate whether the angle is close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ of a right angle - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle.

Record the angle and describe the angle as close to a right angle, $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{2}{3}$ right angles - an acute angle or $1\frac{1}{2}$ or $1\frac{1}{3}$ or $1\frac{2}{3}$ of a right angle - an obtuse angle.

Reflection: How can we use angle testers to investigate angles on shapes and objects that are the relative slant between 2 arms that meet at a vertex?