

# How to Sneak Up on a Sheep

## Objective

Students learn about a sheep's vision in relation to angles and degrees of a circle.

## Background

Sheep are very gentle animals and are easily frightened. They flock together for protection because they can't really protect themselves. Sheep have many natural predators, animals that hunt and kill sheep for food. They include coyotes, wolves and domestic dogs. Sometimes larger animals, like mules or llamas, are kept in the pastures with the sheep to scare off possible predators. A sheep has an angle of vision of 270 degrees as a natural protection against predators.

The people who raise and care for sheep are called shepherds. Sometimes, shepherds have dogs to help take care of the sheep. The dog learns to round up the sheep, and when one wanders from the flock, the dog brings it back.

There are many different breeds of sheep. Some are raised for meat, and others primarily for their wool. Sheep are valuable because they often graze land that other livestock cannot. Sheep eat grass and hay. Oklahoma is a good place for raising sheep because it is one of only a few states that has year-round forage production.

## Procedures

1. A sheep has an angle of vision of 270 degrees. Students will visualize that by practicing angles and degrees of a circle. Students will stand and follow teacher directions, as follows.
  - Turn left or right in quarter, half, three-quarter and full turns. (For greater physical activity, have students jump from position to position.) Discuss the turns in relation to degrees of a circle.
  - Turn left or right by 45, 90, 180, 270 and 360 degrees.
  - Discuss the specific names of angles (right angle, straight angle, obtuse angle, acute angle).
  - Change positions to demonstrate each of the angles listed above.
2. Students will work in groups of three to determine range of vision.
  - One student will stand on a paper circle.
  - Student number 2 will place a mark on the circle showing the direction student number 1 is facing.
  - Student number 3 will hold an object directly behind student number 1 and slowly move it around the edge of the circle until student number 1 can see it.
  - Student number 2 will then mark the point on the circle where student number 1 was able to see the object.
  - Students will exchange places so that the range of vision is measured for each person in the group.
  - Students will determine range of vision by calculating the degrees on the circle.
  - Students will show the range of vision of a sheep by marking 270 degrees from the starting point on the circle.
  - Students will compare their own ranges of vision with that of a sheep.

Oklahoma  
Academic  
Standards

GEOMETRY  
Circles: 1.1,2,