

BIATHLON

Winter biathlon is a sport that combines cross-country skiing and rifle shooting. Biathletes ski around a cross-country trail broken up by two or four rounds of target shooting. During each round of target shooting, athletes face an additional challenge of having to slow their breathing and heart rate because they will have just completed a grueling segment of the race on skis. It's hard to hold a rifle steady when your heart is racing, your muscles are shaking, and you're gasping for breath! To make matters worse, athletes are required to hit circular targets that are only 45mm in diameter from a distance of 50 meters away, sometimes in weather that makes it difficult to see. The unique combination of skill, endurance, and mental focus required in the sport of biathlon help explain why it's the #1 televised winter sport in Europe.



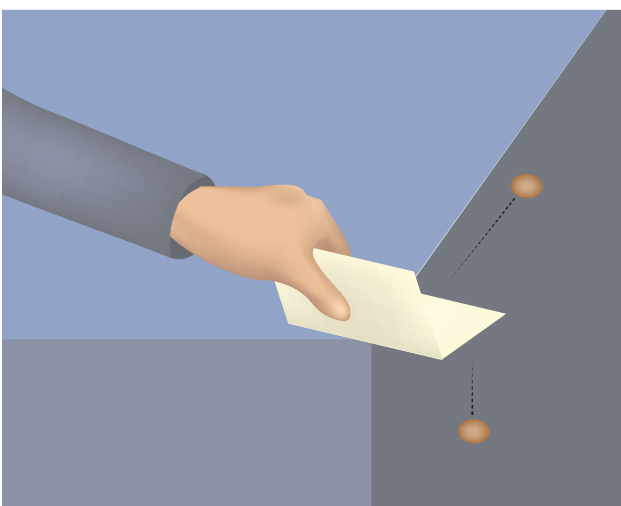
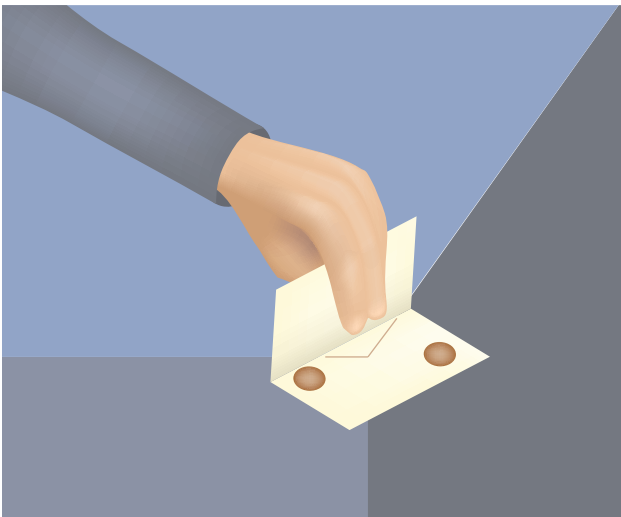
Try This!

Materials

- Table
- 2 coins
- Manila folder

Procedure

1. Cut the folder into a square of about 4 inches a side.
2. Fold the square to make a 2-inch wide flap. Position the flap so that it sticks straight up and down.
3. Place the square on the corner of the table with coins in the positions illustrated below. Grip the square firmly with whichever hand you'd prefer.
4. Now, give the manila folder square a sharp twist to launch one coin sideways while allowing the other to drop straight to the ground.
5. Listen for the sounds of the coins hitting the floor. What do you notice? Record your observations below:



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Try This!

How accurate does a biathlete have to be in order to hit a 45mm target from 50m away?

Materials

- Plastic protractor with a swinging arm
- Laser pointer
- Pencil
- Paper
- Scissors
- Tape

Procedure

1. Cut out the targets below with a pair of scissors and set one up for target practice.
2. Fold along the dotted line to create a stand for your target. Stand your target upright on a flat surface outdoors.
3. Lie in the prone position like a biathlete would about 50 meters away from your target.
4. Place your protractor on the ground in front of you.
5. Tape your laser pointer to the swinging arm of the protractor. Make sure the laser pointer is lined up as straight as possible with the swinging arm.
6. Turn the laser pointer on, and move the edge of the swinging arm of the protractor so that it lines up with '0'.
7. Adjust the protractor so that the laser hits the middle of your target.
8. Slowly and carefully pivot the laser to the left or right. How many degrees can you pivot your laser before you're unable to hit the target? Read the result indicated by the protractor's arm. The number you record should be very small—biathletes have to have superb aim to hit these tiny targets!

