Constructing the Altitude Tracker

1. Copy the Altitude Tracker pattern on white or colored paper. Cut out the outline and glue the pattern to a piece of scrap file folder or poster board. Do not glue the hatched area to the folder or poster board.
2. Cut off the excess file folder or poster board.
3. Roll the hatched area at the top of the pattern into a tube and tape the upper edge along the dashed line at the lower edge. Shape the paper into a sighting tube.
4. Punch a tiny hole in the apex of the protractor quadrant.
5. Cut out the Altitude Calculator and punch a hole at the apex of its protractor quadrant. Glue the Altitude Calculator to the back of the tracker so that the two holes line up.
6. Slip a thread or lightweight string through the holes. Knot the thread or string on the calculator side.
7. Hang a small washer from the other end of the thread as shown in the diagram of the completed tracker.

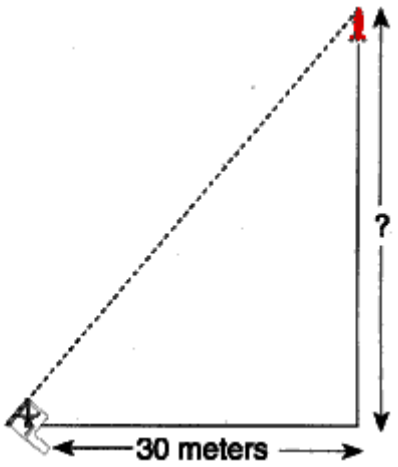
Procedure: Using the Altitude Tracker

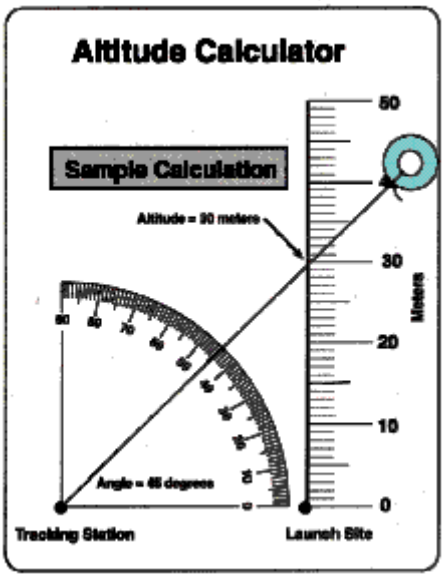
1. Select a clear spot for launching water or bottle rockets.
2. Measure a tracking station location exactly 30 meters away from the launch site.
3. As a rocket is launched, the person doing the tracking will follow the flight with the sighting tube on the tracker. The tracker should be held like a pistol.

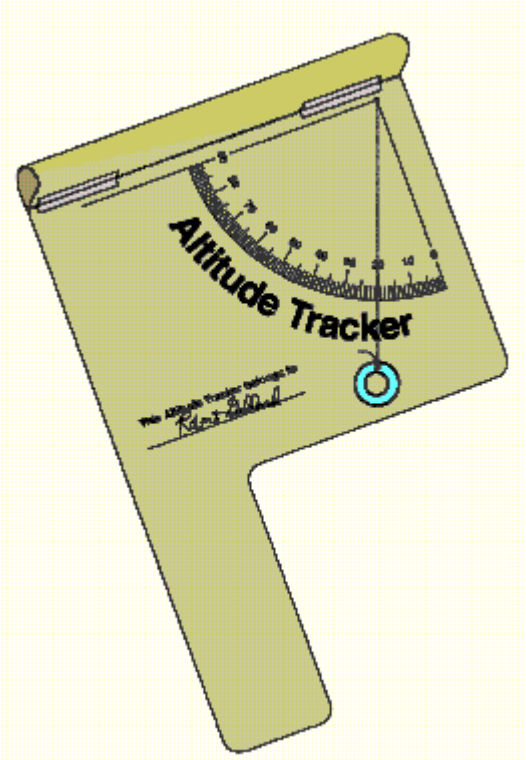
Continue to aim the tracker at the highest point the rocket reached in the sky. Have a second student read the angle the thread or string makes with the quadrant protractor.

Procedure: Determining the Altitude

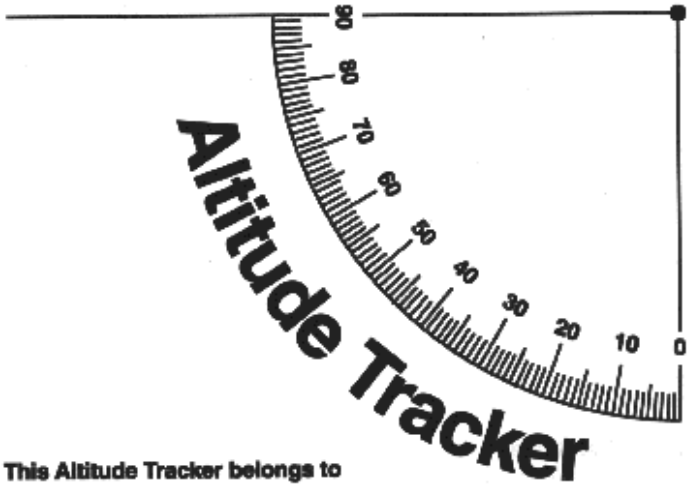
1. Use the Altitude Calculator to determine the height the rocket reached. To do so, pull the thread or string through the hole in the tracker to the Altitude Calculator side until the washer stops it. Lay the string across the protractor quadrant and stretch it so that it crosses the vertical scale.
2. Read the altitude of the rocket. The altitude is the intersection point of the string and the vertical scale to that number. Add the height of the person holding the tracker to determine the altitude the rocket reached.




Altitude Calculator
Sample Calculation
Altitude = 30 meters
Angle = 45 degrees
Tracking Station
Launch Site
50
30
20
10
0
Meters


Altitude Tracker

Roll this section over and tape the upper edge to the dashed line. Shape the section into a sighting tube.



Altitude Tracker

This Altitude Tracker belongs to

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Altitude Calculator