



## **The Explorer's Compass**

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# Acknowledgements

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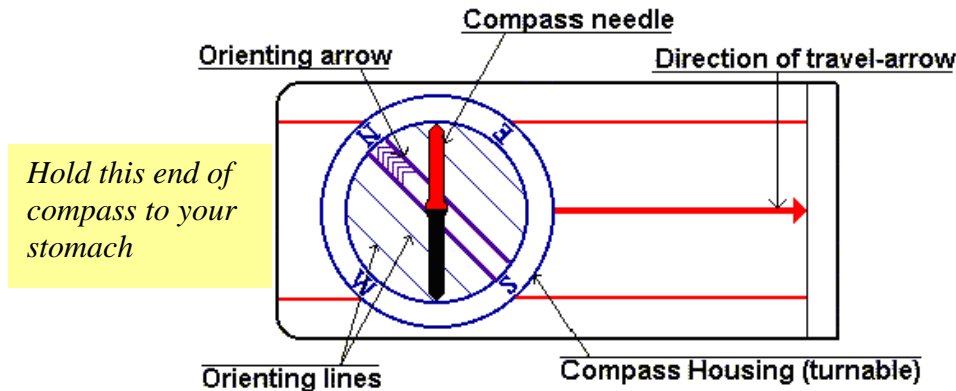
**We especially mention Anna ISD for providing the use of a computer room and library as a workshop location on several occasions. Thank you for your support and the wonderful hospitality to all participants of the curriculum workshops.**

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**Ann McWilliams  
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# How To Use A Compass

Look at the figure and become familiar with each component of the compass.



## Directions at a glance:

1. *Direction of travel arrow*: Will be called the “**go to**” **arrow** when working with the students, tip of arrow points away from student’s body when pacing off a direction. The person’s toes and the direction of travel arrow point straight ahead of the body.
2. The direction students want “to go” is indicated on the *compass housing*. Turn the *housing* until the direction you want to go lines up with the “go to” arrow (*direction of travel arrow*).
3. *Compass needle*: Turn the entire body to line up the red portion of the compass needle with the blank orienting arrow located inside the compass housing. When lining up the red portion of this arrow with the clear arrow inside the turnable compass housing (orienting arrow), refer to it this action as “putting Red in the Shed”.

## Teacher/ Instructor Explanation

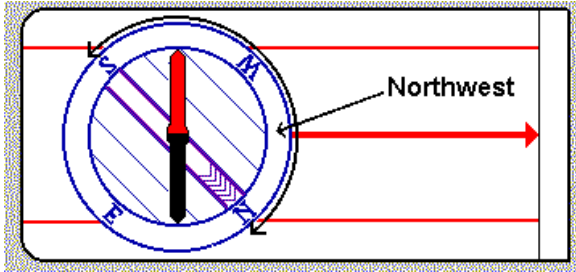
Do you see this red and black arrow? We call it the *compass needle*. **The red part of it is always pointing towards the earth's magnetic north pole no matter what direction you turn your body.** Remember that!

Looking at the picture above you can see a part of the compass that can be turned called the *Compass housing*. On the edge of the compass housing, you will have a scale, 0 to 360, measured in degrees. You can think of this dial similar to a clock with North at 12:00, East at 3:00, South at 6:00 and West at 9:00.

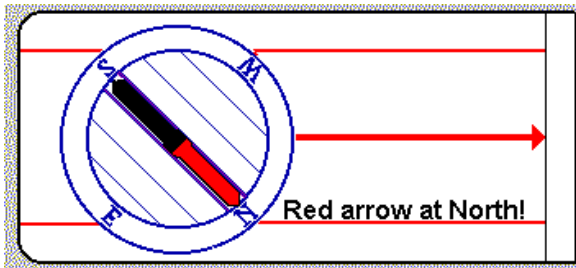
You will also have the letters N, S, W and E for North, South, West and East. Notice that N is at 0 degrees, S is at 180 degrees, W is at 270 degrees and E at 90 degrees on the compass scale. Have the students find each of these on their compass and line each one up with the “go to” arrow (*direction of travel arrow*).

If you want to go in a direction between two of these, you would combine them. For example, to go in a direction between North and West, you simply say: “I would like to go northwest”. Find NW, 315

degrees, on your compass and line it up with the “go to” arrow ( *direction of travel arrow*). Use the directions below:



Let's use that as an example: You want to go northwest. What you do is find out where on the compass housing northwest is. Then you turn the compass housing so that northwest on the housing lines up exactly where the large *direction of travel-arrow*.



Hold the compass so that the rounded portion opposite the “go to” arrow is touching to your stomach. You will have to hold it quite steady, so that the compass needle can turn. Turn your whole body using small steps, holding the edge of the compass opposite the *direction of travel arrow against your stomach*, until the compass needle is aligned with the clear arrow inside the compass housing or you have put “Red in the Shed”.

- ◆ **This is where you have to be careful.** It is *extremely* important that the **red, north part of the compass needle points at north in the compass housing**. If south points at north, you would walk off in the exact opposite direction of what you want! This is a very common mistake among beginners. Always take a second look to make sure you did it correctly!
- ◆ A second problem might be local magnetic attractions. If you are carrying something of iron or something like that, it might disturb the arrow. Make sure you are not holding the compass and a clipboard at the same time. In some locations it is possible for magnetic attractions in the soil, “*magnetic deviation*”, but that should not be a problem.

When you are sure you have it right, start walking in the direction the **red travel-arrow (“go to” arrow)** is pointing. This will take you to the northwest. **Having a stationary object in the distance to walk toward is very important to ensure you are walking in a straight line.** Looking down at the compass while you walk will cause you to veer off in the wrong direction.



# Trail Blazers

*This Plano ISD Integrated Curriculum Activity simplified and edited by Stacy Lane, Meadows Elementary, Fifth Grade, 2002. Revised by Ann McWilliams, Coordinator, 2003.*

## **Location: Activity Field next to Archery ranges**

*Time suggestion: Divide group in half and flip flop with archery during archery activity time. 30-40 minutes is sufficient for this activity.*

## **Objectives:**

- Students will use a compass accurately.
- Students will use a compass to navigate a course from instructions given.
- Students will record and make a map of their route.
- Students will integrate environmental studies, geography, mathematics and work cooperatively to successfully complete the task.

## **Materials:**

- 1 compass for each group of 2 or 3 students (provided in Compass Activity tub at camp)
- Trail Blazer Course Answer sheet (Laminated copy provided in the Compass Activity tub or can be put in parent booklet/ provided by teacher)
- Student Camp Booklets with Trail Blazer recording sheet and Trail Blazer Course Cards pages.
- 1 pencil for each group
- Cone markers – 5 per group
- Laminated copies of teacher instructions/ answer sheet (provided in Compass Activity tub at camp)

**Compass Activity tub** located at **the archery range storage closet.**

## **Procedure:**

**Note:** Students must learn the basics of using a compass prior to going on a field experience. Refer to **How To Use A Compass**. Additional suggestion: This can be placed in the parent booklet. Parents may go over the procedures for using a compass during down time in the cabins prior to

going out to the field. However, it is most effective when explained while students are using the compass.

Procedure for learning the use of the compass and doing the four courses:

1. On an open playing field
2. Arrange students in **one line** facing north, **shoulder to shoulder**, with compass in hand. This makes it easy and fast for the teacher to determine who isn't catching on.
3. Practice using the compass by locating the following directions and their corresponding degrees: N, S, W, E, NW and NE using **How to Use a Compass**.
4. Now arrange the students in groups for doing the various courses. (This lesson is designed for four groups of students.)
5. Everyone will manipulate a compass as added practice and application of their new compass skills. Assign a student in the group to step off the paces each time for accuracy. Assign one student to give the directions of travel. And one student to set out the cones.
6. Give each group a set of five cones. Give each student in the group a compass, Trail Blazer recording sheets, Course Card, and pencil.
7. Begin by having students find north.
8. Once it is found place a cone at a point approximately 25-50 yards from the students. This cone will represent the beginning point or landmark of the course to be laid out using the remaining four cones and "Trail Blazer" directions sheet.
9. Remind students that north will always remain constant and that the other compass readings are based upon their relationship to north.
10. Begin with *Trail 1* on the Trail Blazer directions sheet and proceed to lay out the course, one cone per set of directions. Remind students that a "length" is a step or stride and that the person designated to step off the lengths must use consistent step sizes for accuracy.
11. When a trail is completed the pattern will be drawn on the "Trail Blazer Record Sheet"
12. At completion of the task students will return to the point of origin and check for accuracy of the course they have plotted. (Answer keys will need to be provided by the teacher to check for accuracy.)
13. Move on to the next Trail and do as many courses as time allows.

## Teacher Information:

**Teachers:** Items will be provided for your use at camp

- Trail Blazer course card sheet and directions
- Trail Blazer answer keys
- 30 compasses
- 6 cones

Things to put in **student booklets:**

- Trail Blazer course card sheet
- Trail Blazer recording sheet

Things to put in **parent books** if you choose to have parents help with this activity:

- Background information pages for using a compass, **How to Use a Compass**.