Suggested Orienteering Training Circuits

This circuit can be used with middle- to high-school students and adults who have a basic understanding of the sport of orienteering. An introduction to the orienteering map beforehand is recommended. Each station may take 30-45 minutes to complete. Students should work in groups to provide safety, shared input and reinforcement.

Station 1: **Distance Estimation**

a. Basic pacing
b. Students learn to generally estimate the distances between themselves and the features around them as they travel

Station 2: "**Clue" Card (Control Description) Game**: Headless Chicken

a. Learn the symbols of the clue card and how to identify the features in terrain

Station 3: **Mapping: learning how to draw a map**

a. Learn what symbols are needed to draw their map
b. Students learn how to look at something from a bird's-eye perspective and see the relationships among objects from that vantage point

Station 4: **Compass Bearings**

a. Learn to take a compass bearing, both precise and rough
b. Practice on a course using both precise and rough compass bearings

Station 5: **Orientation and Thumbing**

a. Orient the map to terrain without using a compass
b. Thumb along during travel to keep track of features passed
c. Do a course incorporating both of these skills

Station 6: **Relocation**

a. Basics steps of relocation
b. Practice relocation with a few controls

DETAILS OF THE STATIONS BEGIN ON THE NEXT PAGE

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with a class of seventh graders

STATION 1

Distance Estimation

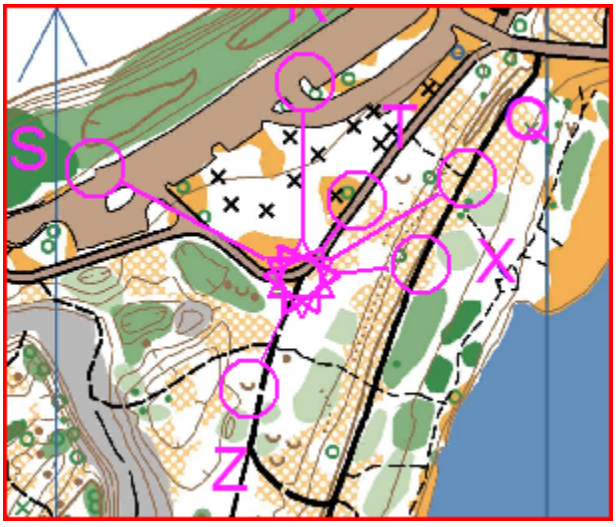
When the group arrives introduce yourself and the activity of the station. The goal of distance estimation is to learn how to keep track of the distance you have traveled. In this case, pace counting will be used.

Step 1: Have students walk, jog and run a measured 100m, keeping track of the number of steps it takes them for each distance. (In the example below, this is the length between the center of circle marked T and the center of the triangle.) Each end of the 100m should be marked with a cone or other suitable marker. Ask them to use the numbers do some basic calculations. For example, how many steps would it take for a person walking to travel 400m, etc.

Step 2: There will be a star of cones pointing in various directions, each one with a different distance. The cones will indicate the direction of the lines to follow. At the end of the distance will be a cone with a letter on it, as shown on the example below. Using their pace count, the students have to run in a line the distance assigned to find the object. They will come back and tell you what letter they found on the cone at the end of the distance. You can tell the students they got it right or not based on the master map and the line they ran.

Some Safety Issues:

1. If a student is having trouble finding one of the cones they should come back and start again.
2. Make sure that the group knows not to go too far; all cones are within 300m. If they are going farther than that they should stop and come back.
3. Make sure the teams know when they are supposed to travel to the next station.



STATION 2

Learning the Symbols of the "Clue Card"

When the group arrives introduce yourself and explain what they will be doing at this station. The goal of this station is for the students to decode the "clue card" control descriptions and figure out what they represent. To do this we will play a game called "headless chicken."

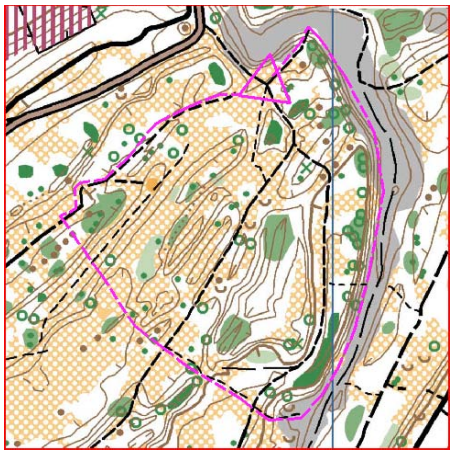
Step 1: Introduce the students to the list of symbols. This list will be provided with the equipment for the station. Discuss any questions about the list.

Step 2: Divide the group into 4-6 teams. Explain the game of headless chicken.

a. Show them the designated area of the map that is used for the game. Explain that the map must stay at the triangle. See example below.
b. Each team gets a clue card for each person. This clue card represents ribbons that are placed on that type feature in the designated area. The trick is that there may be multiples of that feature in the designated area so the students will have to find which feature the ribbon is on. The clue may give more specific examples to help.
c. The goal of the game is for the teams to go out to find the ribbons using the clues. Once they have found them they have to come back to the triangle and draw on a map precisely what features the ribbons where on. You will have a map for each team they can privately draw on so no other team can see the other team's progress. The teams may come back to draw and out to look as many times as they need to find them all. There will be 8 ribbons to find.

Some Safety Issues:

1. If a group is having trouble and has not found anything in 5 minutes they should come back to the triangle and start again.
2. Make sure to describe the boundaries clearly to the group so they know when they have hit a boundary line.
3. Make sure the teams know when they are supposed to be back to get to the next station on time.



STATION 3
Mapping

When the students arrive introduce yourself and the activity of this station, learning to make a map.

Step 1: Ask the students to imagine they are a bird flying over and looking down on the area they are standing on right now. What would it look like? Draw their attention to the relationships of different objects and features. For example, how much space is between the parking lot and the road compared to the road junction and the road bend? How much space should the picnic table take up compared to the bathroom on the map? As the students are starting to think about this, ask them how they would represent certain features on the map, what would they use to show a building, a hill, a tree, a grill, a road, etc.

Step 2: Hand each student a blank piece of paper and a couple of colored pencils. Ask them to make a map of a small area surrounded by roads and/or trails (for example, the area below marked by the purple hash line).

Step 3: Five minutes before the station ends, have the students come back and compare their map to the aerial photos and the orienteering map (seen below) so they can see how accurate they were and what differences there are. Discuss the differences.

Safety Tips:

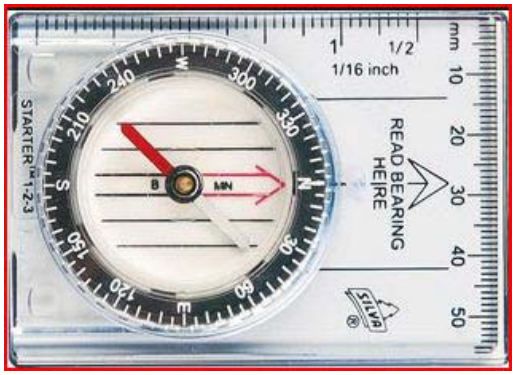
1. Make sure the students know when to come back.
2. It might be a larger area than is possible to map in the time allotted; have students pick a small area if need be.

STATION 4
Compass Bearings

When the group arrives introduce yourself and the station. At this station the kids will be learning how to take a rough and a precise compass bearing.

Step 1: Introduce the kids to the compass. Ask them to take a look at the compass and tell you what they see. For example: Numbers, arrows, a dial that turns, a needle that turns, etc.

Step 2: Out of this dialogue highlight the 2 arrows in the picture below and the needle. The arrow on the baseplate of the compass is called the "line of direction" or "line of travel" arrow (shown below with the notation "read bearing here". The red outlined arrow on the dial part of the compass can be called the "house" or "shed" arrow. The red side of the needle points to magnetic north. (At this time don't describe the difference between magnetic north and true north unless the question is asked. The answer would be: magnetic north is based on the draw of the magnetic poles of the earth and varies by a certain number of degrees from the center axis of the earth. The variance in degrees is between magnetic and true north varies depending on where you are in the world.) To get a clear reading on magnetic north the compass needs to be held flat in the palm of the hand, away from metallic objects such as belts.



Step 3: Ask the students to locate a feature that stands directly North, South, East and West of them using the compass.

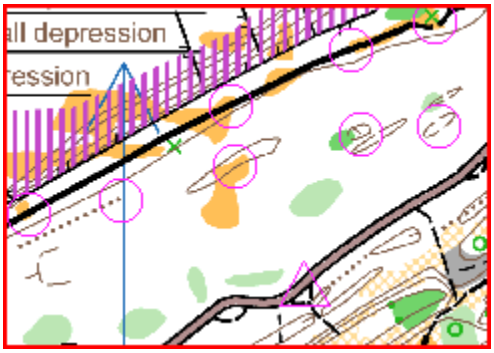
Step 4: Introduce the steps to take a compass bearing:

a. Holding the compass flat, point the line-of-direction arrow in the direction of a given object or place around you.
b. Keeping the line of direction arrow pointing at the feature turn the dial of the compass so the needle sits right inside the house/shed arrow of the dial.

They now have a bearing. Have the students trade compasses without changing anything on the compass. The students turn the whole compass until the needle sits in the shed and see if they can guess the feature that their partner was traveling towards.

Step 5: Take a bearing using the map to a feature you may not be able to see. In the case depicted below, you will all be starting from the purple triangle. The purple circles represent a place where there will be a colored ribbon the students are trying to find, marked with a letter. There are 4 ribbons along the road and 4 ribbons in the woods. On the map is a blue arrow that represents Magnetic north. The steps for taking a bearing to a distant point are as follows:

Station 4/Compass Bearings (continued)



a. Holding the map and compass flat, line the edge of the compass up with the middle of the triangle and the circle you are planning to travel to.
b. Turn the dial so the house/shed arrow is exactly parallel to the blue north arrow on the map.
c. Putting the map down and holding the compass flat turn the whole compass until the needle rests right inside the house arrow.
d. Look up and locate the line out in front of you and run along it until you hit an obvious feature (in this case the large trail) or until you hit the ribbon you are going to.

Step 6: The students now have to try and run to the ribbons on their bearing. Have them start with the ones on the far trail. Their goal is to see how close to the ribbon they can get just running on the line. Within 10m or 33 feet is very good. Once students have hit at least 2 ribbons on the trail then they can try for the ones off the trail. This requires more precision. So they will need to choose specific points or objects along the line that they can see. Once they get to the point they should check their bearing and find a new point along the line and run to that. Do this until they hit the ribbons.

Step 7: To close, explain that the first exercise uses rough compass because you are using fewer points to keep track of your line. The second exercise is more precise because you are using more points to keep track of the line of travel. Ask if anyone can tell you why you might want to use one or the other.

Some Safety issues for this Station:

1. When students start running off make sure they know the general direction (north in the map example above) that all the ribbons are so they don't go 180 degrees in the wrong direction.
2. If it takes longer than 5 minutes to find the ribbon they should come back to the start and try again.
3. The road that the triangle is on and the trail the circles are on are the boundaries. They should not go further beyond the road to the south, or the trail to the north.

STATION 5

Orientation and Thumbing

When the kids arrive introduce yourself and the activity for the station. In this station the kids will be learning how to orient the map to the terrain around them and track their progress along a route by thumbing.

Step 1: Hand out the maps and have the group identify the features around them. For example, have them point out a trail junction, hill, vegetation, etc. Reference the example below. Have the students line the map up with the features around them so the map is oriented.

Once the map is oriented ask them to walk up the trail to the north. Using their thumb to keep track of what features they have passed ask the students to stop once they have come to the patch of grey on the right side of the trail to the north. Do this with them. Check that they are thumbing along by asking if they can point exactly to where they are or not. Do the same thing walking back to the triangle on the map.

Step 2: Explain the exercise. They are at the triangle and their goal is to find the ribbons inside each circle of the course, in order. Each leg will have multiple trail junctions and students will have to keep their maps oriented to make the right choice. Thumbing along will help them keep track of the terrain and where they are so when they come to a trail junction they know which one it is and what they can use to orient their map to.

Step 3: Divide the group into groups of 2 or 3 and start them 1 minute apart. The course will finish back at the triangle. Once the students have finished the course, talk to them to see how it went. Where did they succeed in thumbing and keeping the map oriented, and where did they have trouble and how could they do it differently? Then send them to the next station.

Some safety issues:

1. Make sure each group knows what time they need to be back in order for the group to get to the next station on time. If they are struggling with one point or the course in general they should start heading back 5 minutes before time is up.
2. Make sure they are aware of a way to find themselves if they get lost. Before they go out, point to a large tree or land feature that could be seen from a distance away that the groups could use if they get lost to guide them back to the station.

STATION 6
Relocation

When the students arrive introduce yourself and the activity of the station. Relocation is a skill that helps you figure out where you are when you are lost or confused.

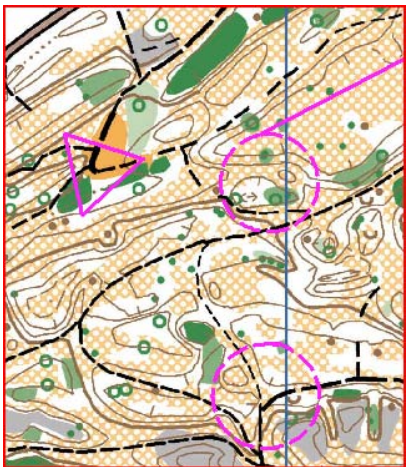
Step 1: Hand out the course maps and compasses to each individual. Using the triangle as an example go through the steps of relocation. Those are:

a. Stop moving
b. Orient your map
c. Find one or more obvious features in the terrain
d. Acquire the feature(s) on the map

Because you are already standing still, just tell the kids the first step is to Stop moving, and do this any time you are not sure. Find North with your compass and line the blue North arrow of the map up with north on the compass. Look around for an obvious feature in a clear direction and try and find that feature on the map. In the example below, the hill and trail junction would be clear obvious features. If the first direction does not work try another one. If no feature in all directions works then keeping the map oriented run to a large linear feature that you can't miss, for example the trail to the south of the triangle or the road to the north. Go through this a couple times.

Step 2: Explain the activity: The group will be split up into 2 teams. To start, one team member will carry all the individual maps. That team member will also be given a map with a drop zone indicated as the dashed purple circles in the example below. This team member leads, with the group running or walking to the drop zone which is some distance away from the ribbon in the circle on the course map. At the drop zone the team members are given the course maps. They have to figure out where they are and how to get to the ribbon using their relocation skills. Once the whole team has found the ribbon, a new team member takes all the maps and the drop zone map and navigates the team to the next drop zone. The same process is repeated.

Step 3: To start, take the group to the first drop zone to demonstrate how it is done. After the first one send the groups out starting with different drop zones. The group should try as many as they want in the time they have.



Some Safety Issues:

1. If a group is having trouble and has not found anything in 5 minutes they should come back to the triangle and start again. After the first example you (as Station leader) should head back to the triangle to wait and help as needed.

2. Make sure that the groups are aware of key features and directions that they can use to get back should they feel lost.
3. Make sure the teams know when they are supposed to be back to get to the next station on time.

Station 6/Relocation (continued)