

Protractor Golf

Aim

To develop skills in estimating and measuring angles and distances. Variations can also help to develop concepts of scale and bearing.

Procedure

This is a game played in pairs. Each pair gets a course map and a score sheet. Two different printable course maps (the Hastings Course and the Pear Tree Course) and a score sheet are provided on subsequent pages below. Each pair will also need a pencil, a ruler (at least 30cm) and a protractor (180° or 360°).

The pair choose a course, then decide who will be Player A and who will be Player B (there is no advantage either way) and write their names on the score sheet accordingly. Player A goes first. She takes the course map, the score sheet and the pencil. Player B takes the ruler and protractor.

The course map shows a river, some trees, ten tees (marked as spots with arrows protruding) and ten holes (marked as small circles). Tees A1 to A5 (and the corresponding holes) are for Player A; Tees B1 to B5 (and the corresponding holes) are for Player B. Player A locates Tee A1 and Hole A1. She imagines herself standing on the spot at Tee A1 looking along the arrow. The arrow acts as a direction reference. She estimates the angle to the left or right of the direction reference that she would need to hit the ball for it to head towards Hole A1. She writes this angle down in her angle column on the score sheet in the form 20°L or 148°R. She then estimates the distance to the hole in millimetres and writes this down in the distance column beside the angle.

Player B then uses Player A's estimated angle along with the protractor and ruler, to mark the course of the ball. He then uses Player A's distance to mark the point where the ball stops. The line marking the course of the ball should extend at least 30mm past where the ball stops as this will provide the direction reference for the next shot.

The players then swap equipment, Player B estimates the angle and direction required to go from Tee B1 to hole B1 and writes them down in his side of the score sheet, then Player A uses the protractor and ruler to mark the new position of B's ball.

They then swap again and Player A has her second shot, using the new position of the ball and the direction reference as starting point. The two players alternate in this way until one gets his or her ball inside the circle marking his or her hole. That player

then rules off across his or her columns of the score sheet and enters the hole number in the 'Hole' column and the score (number of shots required) in the 'Score' column. The other player then continues to take shots until he or she is in the hole and the score sheet is marked accordingly.

They then do likewise for holes A2 and B2, and so on.

Obstacle rules

There are rules relating to obstacles.

If the ball goes beyond the line which marks the edge of the course, it stops at the point where it crosses that line. The direction reference will then point perpendicularly off the course. One penalty shot is incurred: the player writes the word 'penalty' in the angle column underneath the last entry and this is counted when adding up the shots to determine the score for that hole.

If the ball lands in the river, it is placed on the bank on the side from which it came (even if it lands closer to the other side) pointing perpendicularly towards the river. One penalty shot is incurred. This is recorded as above. The ball may pass over the river and land on the far side without penalty.

Balls cannot pass through or over trees. If the ball hits a tree, it remains at the point where it hit the tree. No penalty is incurred, but subsequent shots must take it around the tree.

Variations

If students want to play more than one game, they should alternate between the two courses provided. Alternatively they might draw up alternative courses themselves. They should design the new courses as a pair to ensure that they are approximately equally difficult for both players.

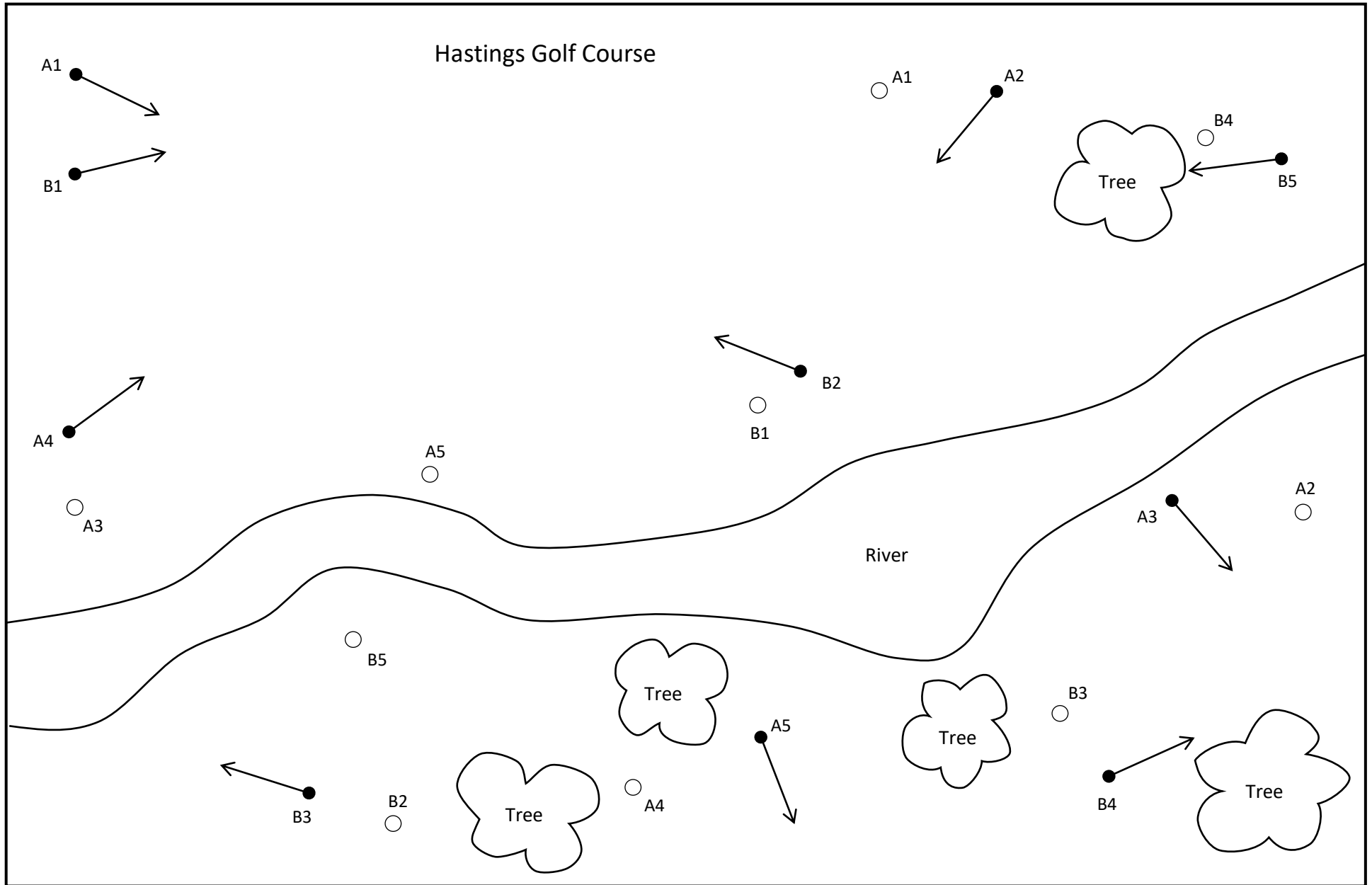
To practice using scales, students can consider 1mm to represent 1m and record their estimates in metres. For further practice, other less straightforward scales can be used.

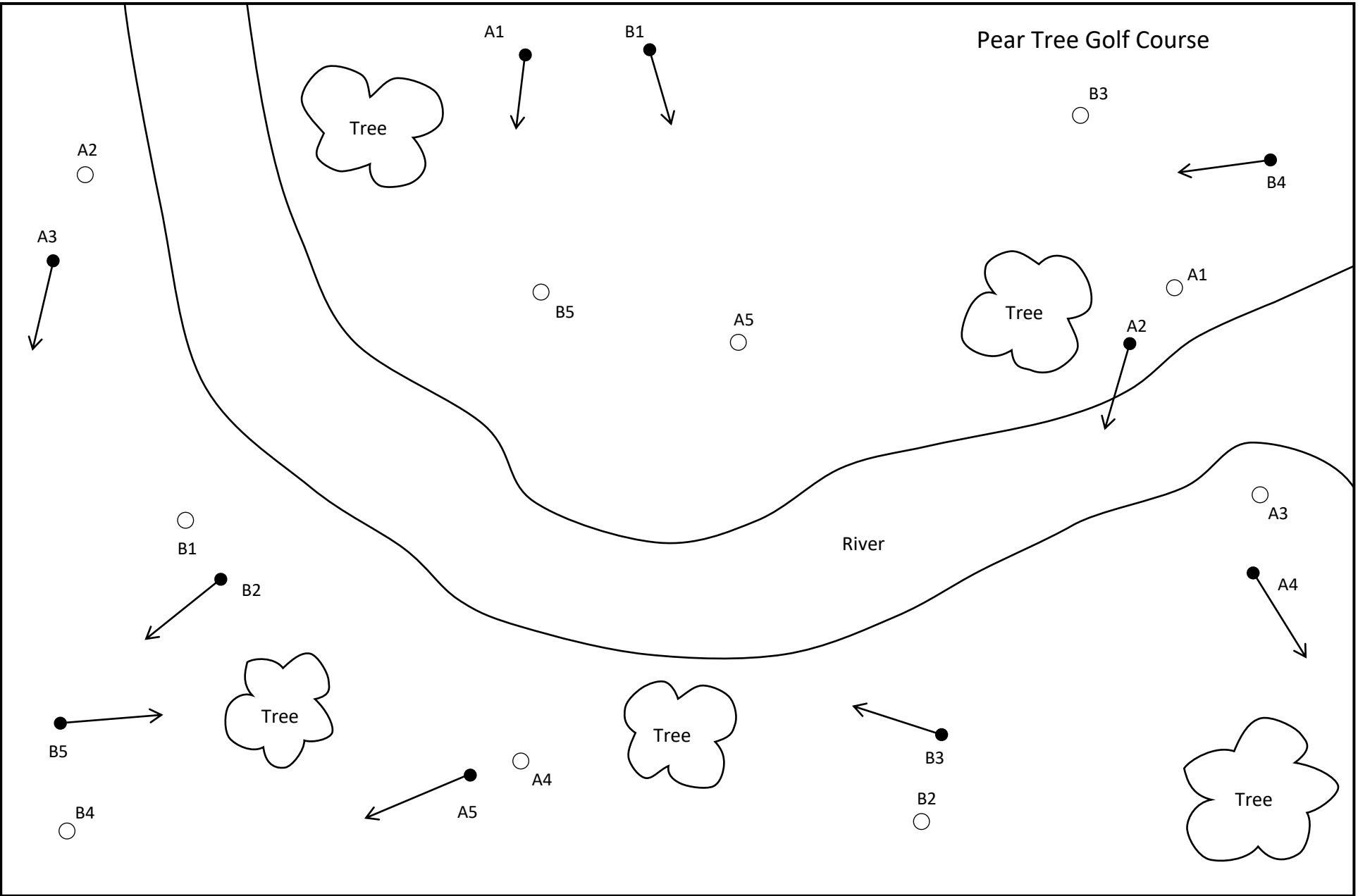
If a series of light parallel lines is drawn across the course map, these can be taken as north-south lines and students can record the direction of their shots in terms of compass bearing instead of relative to the direction reference lines.

Tips

There are quite a few things for the students to remember. It can be worth playing a couple of demonstration holes as a whole class before getting the students to play in pairs.

Hastings Golf Course





PLAYER A			
Hole	Angle	Distance	Score
			Total

PLAYER B			
Hole	Angle	Distance	Score
			Total