

Name: \_\_\_\_\_

Date: \_\_\_\_\_

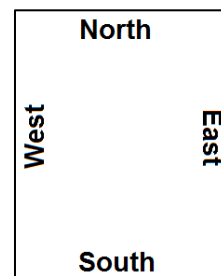
## Science 10 – Motion – Distance and Displacement

### Learning Goals

1. I can explain the difference between distance and displacement using the words "vector" and "scalar".
2. I can measure distance and displacement correctly, using appropriate units.

### Materials (STUFF YOU NEED)

- Graph paper
- Direction cards
- Ruler
- Coloured pencils (2)



### Procedure (WHAT TO DO)

1. Label the four sides of your paper North, East, South and West. Draw a dot in the middle of the page (approximately).
2. "Shuffle" your direction cards. Put them in a pile face down.
3. Flip over one card at a time. Use one coloured pencil to draw a line that shows the movement shown on the card, using your ruler. Each square is 0.5 cm.
4. Flip another card and continue your line with the movement shown. Repeat for all of your direction cards.
5. Repeat Steps 2 to 5. Use a different colour of pencil. When you finish, you should have two "routes" in different colours.

### Questions (WHAT TO HAND IN)

Distance is the **total amount** of movement.  
Displacement is the **change in position** from the start of movement to the end.

1. For each route you drew:
  - a. Calculate the total distance travelled in centimetres.
  - b. Measure the displacement for each route. Remember that displacement needs to have a measurement and a direction.
2. Compare your measurements.
  - a. Does it matter which order you flip the cards over?
  - b. If you did one more route, what would you expect the distance and displacement to be?