

G 4.2 WEATHER



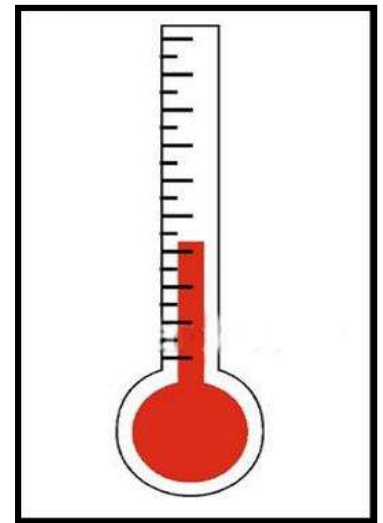
G4.2.2

Measuring weather: thermometer, raingauge, wind vane and anemometer.

A. The main weather elements - temperature, rain, wind

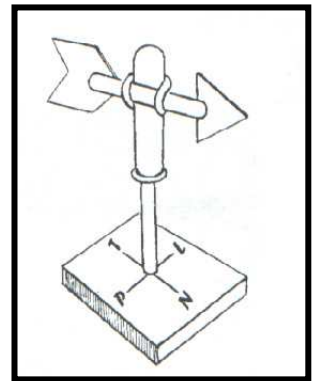
We measure temperatures by means of a thermometer

1. A **thermometer** measures the temperature.
Temperatures are different in different places.
2. In a thermometer we find a little tube containing **mercury**.
3. Mercury rises and falls according to how much hot or cold the place is.
4. We measure temperatures in degrees Celsius. A Swedish scientist invented the thermometer.
5. When the temperature falls down a lot, water freezes. When water is heated, it becomes very hot and starts to boil.
6. Some examples:
a high temperature - $30^{\circ} C$ - **very hot**
a low temperature - $12^{\circ} C$ - **cold**
a very low temperature - $5^{\circ} C$ - **freezing**
7. We can also use a thermometer to measure our body's temperature. When our body's temperaure rises we say that we are running a fever and we are sick or ill.



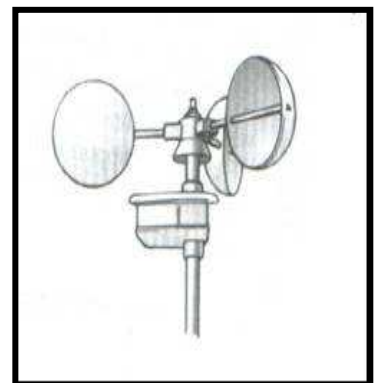
B. Wind - directions and the wind vane

1. **Wind is 'moving air'**. A sailing boat is driven by the wind.
2. The wind pump (raddiena) moves by wind energy and it can be used to pump water from underground reservoirs.
3. Wind is invisible, we cannot see it, but we see leaves and flags moving with the wind, and we can also feel the wind on our faces.
4. Seeds are driven to far away places by the wind and plants and trees grow in different and new places.
5. **Wind has a FORCE and a DIRECTION**. A **breeze** is a soft wind while a **gust** is a strong wind.



wind vane

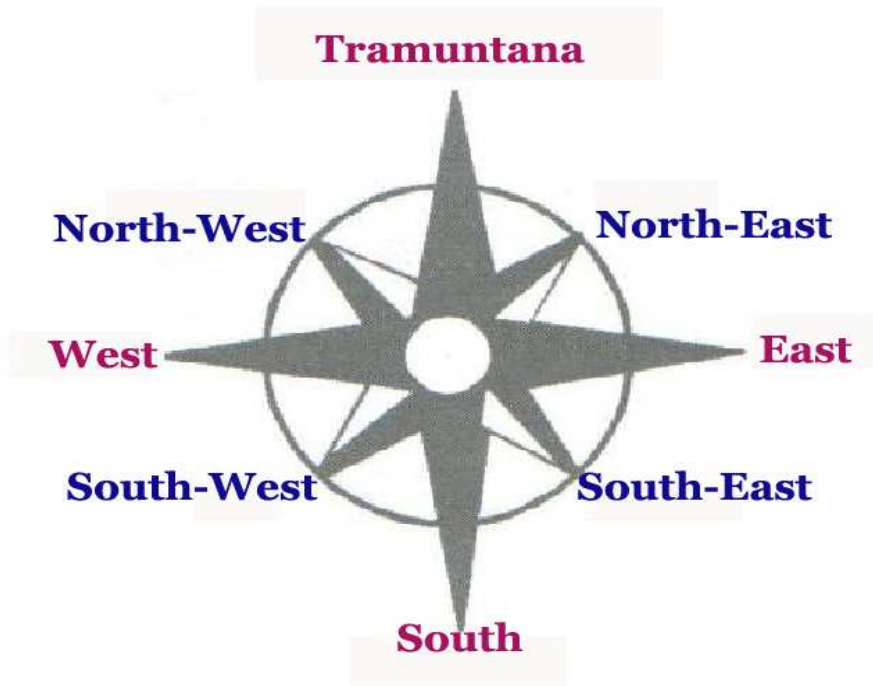
6. **A wind vane** shows us the direction of the wind.
7. **The anemometer** shows us the force of the wind.
8. Two very cold winds are the North and the North-West winds. In Malta wind blows mainly from the North-West direction.
9. A 'Gregalata' is a very strong wind blowing from the North-East. It is usually a cold wind too.



Anemometer
measuring the wind's force

10. The South wind is hot and dry and is very common in summer.
11. In Malta we don't have mountains to shelter and protect us from winds, so we feel it more.
12. Winds are stronger in high places such as Dingli, Rabat and Mellieħa.

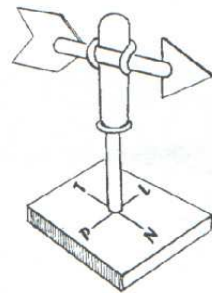
C. the wind rose (warda ta' rjieħ)



1. The **compass (boxxla)** points always to the North and it is used for navigation.
2. We find the **compass card** on aeroplanes, ships and all sorts of boats.
3. It can be useful for hikers.

Fill in the names of the instruments.

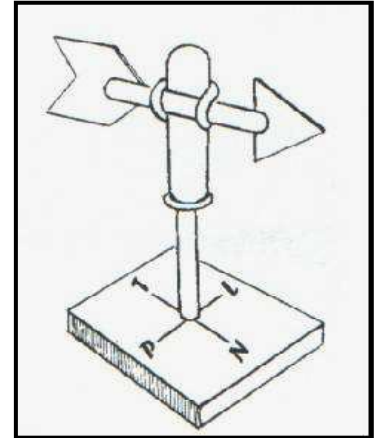
1. _____ shows us the direction of the wind.
2. _____ measures the force of the wind.
3. _____ measures the amount of rainfall.
4. _____ measures the temperature in degrees Celsius.



D. Answer the following questions.

1. What is this instrument called?

2. What is it used for?



E. Underline the correct answers.



1. To measure the temperature we use the (thermometer, anemometer, rain-gauge, wind vane).

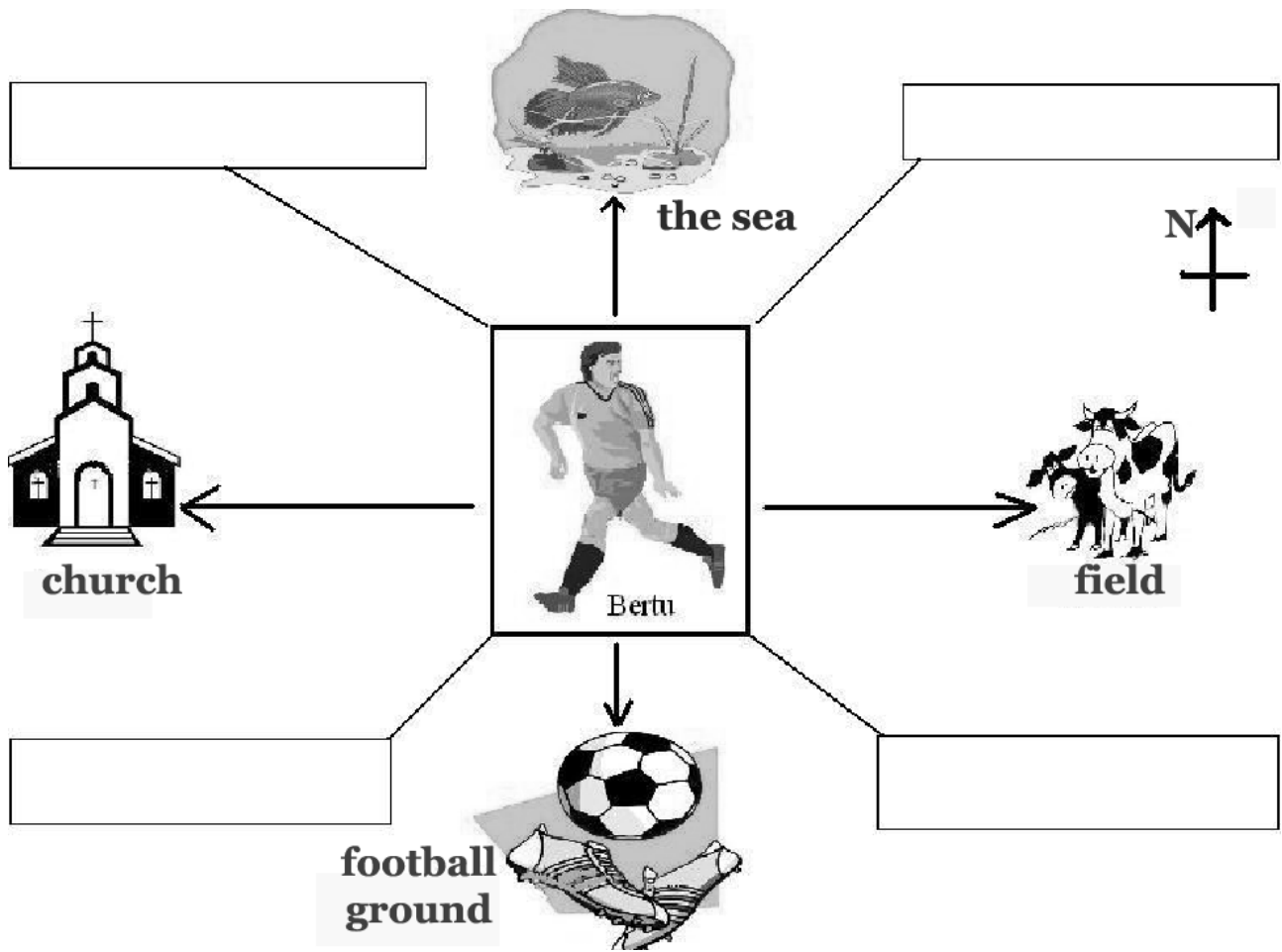
2. To measure the force of the wind we use the (thermometer, anemometer, rain-gauge, wind vane).

3. To measure the amount of rainfall we use the (thermometer, anemometer, rain-gauge, wind vane).

F. Match the following by writing numbers in the blank squares.

1. A rain-gauge		issues the weather report and forecasts.
2. An anemometer		measures the amount of rainfall.
3. A wind vane		Measures the force of the wind.
4. A meteorological office		shows us the direction from which the wind is blowing.

G. Answer the following with the help of the diagram.



1. Bertu is walking towards the church. In which direction is he walking?

2. Bertu is walking to the sea. In which direction is he going?

3. Bertu is walking towards the field. In which direction is he walking?

4. In which direction must Bertu walk to go to the football ground?



5. There remains four more directions.

These are: **South-West, North-West, South-East and North-East.**

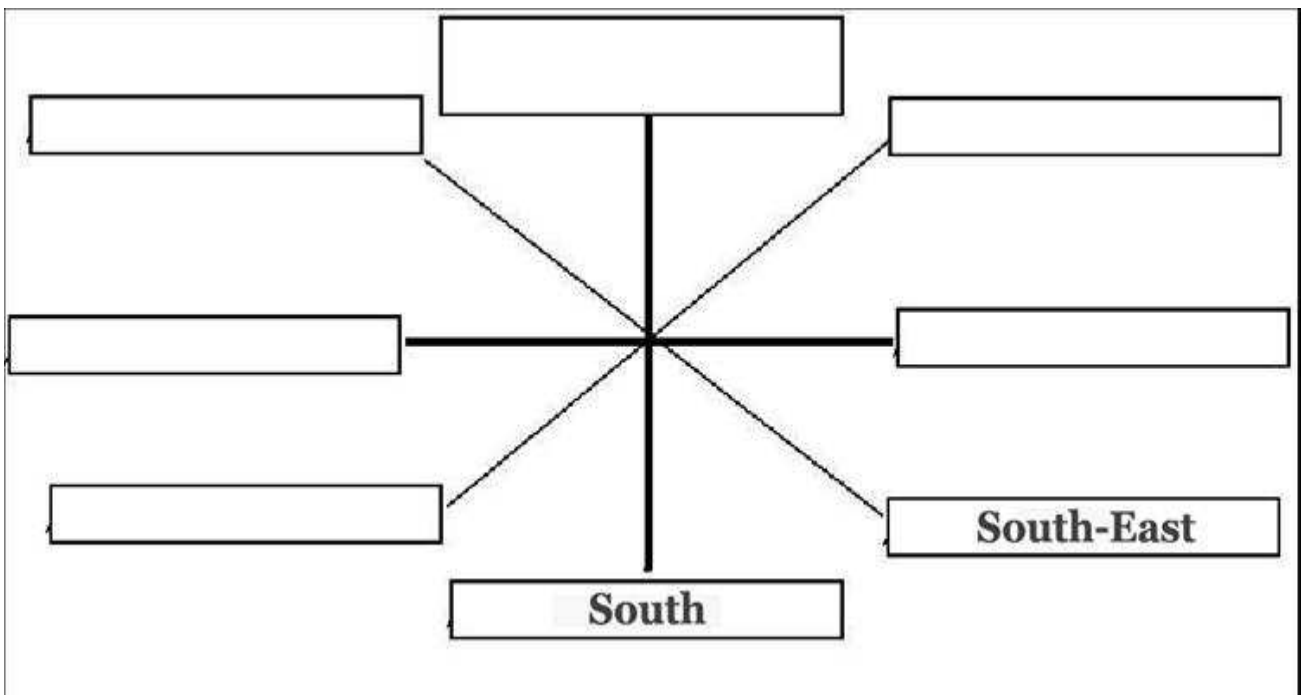
Write these four directions in the diagram of exercise G.



G. Write down the following directions in their proper square.

Two are ready.

North, West, East, North-West, South-West, North-East.



H. What season is it, summer or winter?

temperature:	highest 30°C night 20°C
wind:	South
sky:	sunny
sea:	28°C
rain:	nil
season:	_____

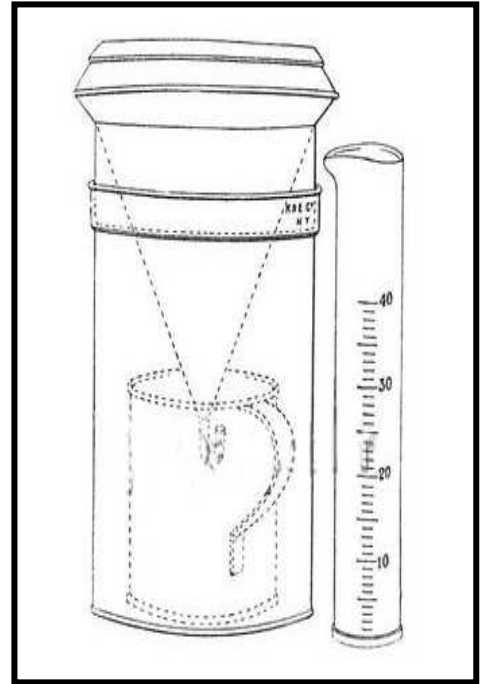
temperature:	highest 18°C night 9°C
wind:	North
sky:	cloudy
sea:	18°C
rain:	showers
season:	_____

I. More Weather Instruments

Research by *Moyra Sammut; Antoinette Attard & John Vella*

Rain Gauge

1. A "rain gauge", measures the amount of rainfall in one day. Measurements are recorded in millimetres. About 500 mm or 50cm of rain falls every year on the Maltese Islands.
2. A **wind vane** shows the direction from which the wind is blowing. An **anemometer** measures the force of wind.
3. Wind vanes and anemometers are widely used by the pilots of aeroplanes and ships.
4. The **weather forecast** is issued by the **meteorological office** that can be found in Luqa.
5. The **compass** shows us the wind direction and its arrow points always to the North. The compass is an important instrument for aeroplanes, ships and boats. It can be useful also for hikers.
6. **Humidity** consists of invisible water in the air around us. Although humidity is invisible, we can still feel and see its effects. When there's a lot of humidity in the air, roads become wet and slippery, even though it doesn't rain.



Rain Gauge

measures the amount of rain

J. Answer with the help of the diagram.

1. If wind is blowing from direction number 2, from what direction is it blowing?

2. Which direction is shown by number 6?

3. Which direction is shown by number 1?

4. Name direction number 4.

5. The North-West direction is indicated by which number? _____

6. Il-Lbiċ huwa mmarkat bin-numru: _____

7. Is the South-East wind normally a cool or hot wind?

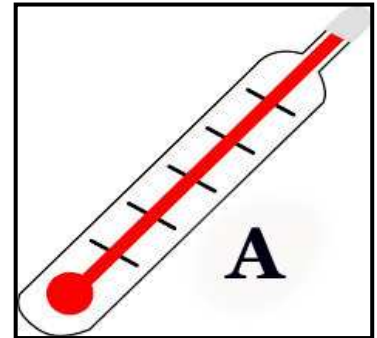
8. What kind of wind, cool or hot, normally blows from direction number 5?



K. Complete

1. Water that falls down as rain, was once:

- a) seawater
- b) soil
- c) a tree



2. Answer these questions about instrument A:

a) What is the instrument called?

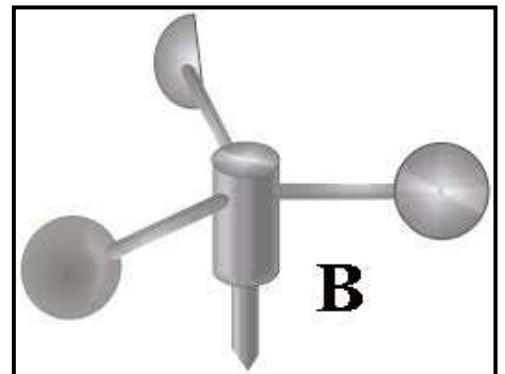
b) What is it normally used for?

3. The instrument marked by the letter A can help us decide (the wind's direction, which clothes we should wear, what we should cook).

4. Answer these questions about instrument B:

a) What is the instrument called?

b) What is it used for?

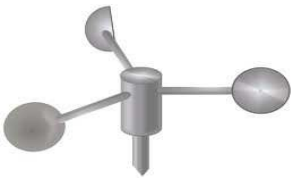
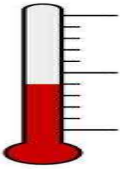
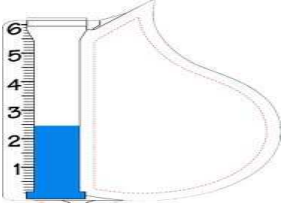
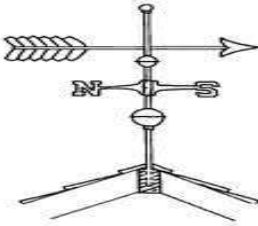


5. Instrument B can help fishermen to decide whether they should (colour their nets, go out at sea to fish, eat fish or vegetables).

6. When the temperature goes down to about 5 degrees Celsius, the weather is normally (cloudy, very hot, very cold).

7. It was so hot yesterday that we had no energy at all. The weather report showed a temperature of (15, 150, 33) degrees Celsius.

L. Write about the following instruments.

1	 An anemometer is a device used for measuring wind speed and direction. It consists of a central vertical axis with three horizontal arms, each ending in a hemispherical cup. The cups are designed to catch the wind, and their rotation is converted into an electrical signal by a sensor.	<p>This is an ANEMOMETER.</p> <p>The <u>anemometer</u> is used to</p> <hr/> <hr/>
2	 A thermometer is a device that measures temperature. It consists of a glass tube filled with a liquid, such as mercury or alcohol, which expands or contracts as the temperature changes. The tube has a scale on the side to indicate the temperature.	<p>This is a THERMOMETER.</p> <p>We use a <u>thermometer</u> to</p> <hr/> <hr/>
3	 A rain-gauge is a device used to measure the amount of rain that has fallen. It consists of a cylindrical container with a funnel-shaped top. The rain falls into the funnel and is collected in the container. The container has a scale on the side to indicate the amount of rain.	<p>This is a RAIN-GAUGE.</p> <p>A <u>rain-gauge</u> is used to</p> <hr/> <hr/>
4	 A wind vane is a device used to measure wind direction. It consists of a vertical axis with a horizontal arm that has a vane at the end. The vane is designed to catch the wind and point in the direction it is blowing. The axis is mounted on a tripod stand.	<p>This is a WIND VANE.</p> <p>We use a <u>wind vane</u> to</p> <hr/> <hr/>

M. Underline the correct answer.

1. By means of the (rain-gauge, anemometer, wind vane, thermometer) we measure the amount of daily rainfall.
2. The force of wind is measured by the (rain-gauge, anemometer, wind vane, thermometer).
3. The direction of the wind is measured by the (rain-gauge, anemometer, wind vane, thermometer).
4. The (rain-gauge, anemometer, wind vane, thermometer) shows us the temperature of the air in degrees Celsius.

N. Complete these sentences using the following phrases

- | | |
|---------------------------------|----------------------------------|
| in Malta it can be really hot. | in spring. |
| in winter. | in autumn. |
| dries clothes in a short while. | measures the amount of rainfall. |
| heavy rains. | in summer. |

1. In summer, _____.
2. We can feel a lot of cold _____.
3. We celebrate the feast of Easter _____.
4. Robins migrate over Malta _____.
5. We eat a lot of water melons _____.
6. Thunder and lightning is normally followed by _____.
7. A North wind, normally _____.
8. A rain-gauge _____.