5 Moisture and evaporation

MOISTURE gets into the air by EVAPORATION.

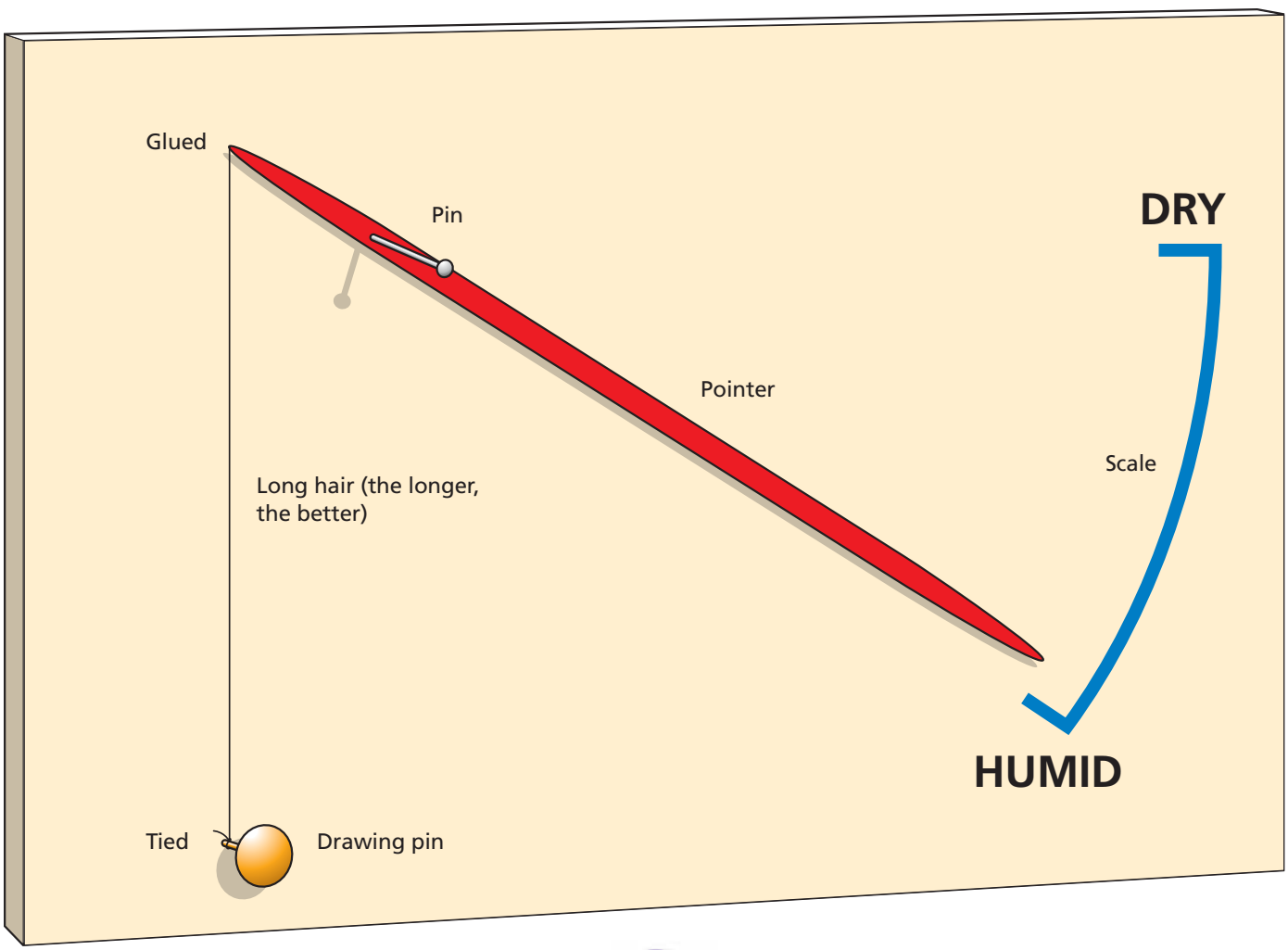
The air contains invisible water. We call this moisture **WATER VAPOUR**.

You cannot see, smell or taste water vapour – but it's there. However, you can sometimes sense that there is a lot of water in the air. We then say that it feels **HUMID**. The air above a heated indoor swimming pool, for example, feels humid because it contains lots of water vapour.

Measuring humidity

There are instruments to tell you the amount of moisture in the air. One of these is called a hygrometer (Picture 1). It uses a piece of hair, because hair gets longer in damp air.

▼ (Picture 1) A hygrometer uses a long human hair to measure the moisture in the air! You can make one of these. Just make sure the pin used as a pivot is much closer to the end with the hair attached. The hygrometer will only work in an upright position, such as fixed to a wall.



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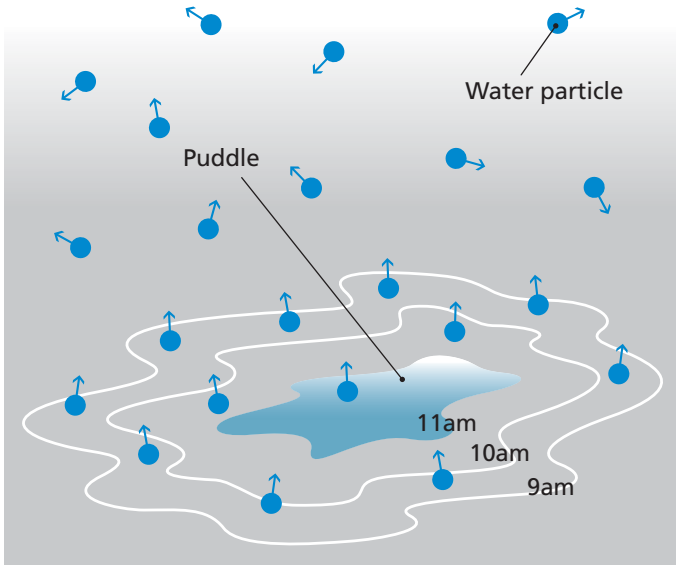
▼ (Picture 2) As the water in this kettle boils, it evaporates and turns to water vapour (steam) and enters the air.

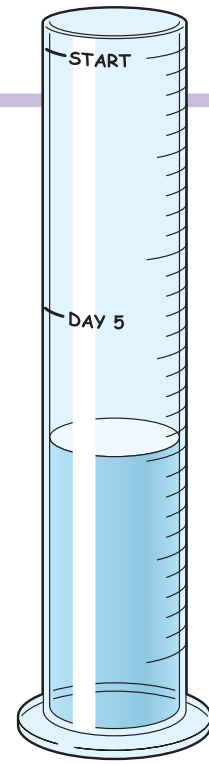
Evaporation – disappearing water

Water gets into the air by changing from a liquid to a gas. This change is called evaporation (Picture 2).

▼ (Picture 3) As a puddle dries, water particles leave the water and go into the air. Once they are in the air they begin to mix with all of the other gases.



▶ (Picture 4) If you fill a glass measuring cylinder with water and mark the level each day, you can measure the amount of evaporation. The evaporation should get slower as the water level goes down. Can you think why this should be?



You cannot see the water evaporating because each particle is too small. But you can see the results, for example, by marking the edges of a puddle with chalk as it dries (Picture 3), or by marking the changes in water level in a tall water-filled jar (Picture 4).

What affects evaporation?

Here are the things that affect the speed at which water can become a gas:

1. Warm air can hold more moisture than cold air.
2. Dry air will take up moisture more quickly than moist air.
3. Moving air, such as a breeze, will take up moisture more quickly than still air.

Summary

- **Water vapour is moisture in the air.**
- **Liquid water changes to water vapour in a process called evaporation.**
- **Water evaporates faster when the air is dry, warm and when there is a good breeze.**

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