Lesson Plan

# And Now for the Weather!
# Instruction Sheet and Guidance

## For 5 to 7 year olds

### Context

The weather on Mars is much more extreme than on Earth. It does not rain and has very few clouds, so although very cold, it is sunny, except when it experiences strong winds and huge dust storms. There are some similarities however, for both have seasons and polar ice caps.

In this activity, the children compare weather on Earth and Mars; they make a wind speed measuring device and use it to make simple measurements.

**Mars' Whirling Dust Devil**



### National curriculum links

**Science:**

- Describe weather associated with the seasons
- Know that scientists measure weather

**Design and technology:**

- Build a device to measure wind speed

**Maths:**

- Use simple measurements to gather data

### Resources

- Demo wind tester (see teacher notes)
- Telescope
- Electric fan
- Activity sheet 1
- Disposable cups
- Cardboard
- Pencil with eraser on top
- Board pin
- Battery operated fan
- Timer

### Lesson starter

Read the poem 'Wind on the Hill' by A. A. Milne.

- Is it windy today?
- What season is it?
- Which season do they think is windiest?
- Winter in the UK is usually cool, wet, windy and cloudy. How can we find out what the weather is like on other planets far away in space?

Show the telescope and discuss how they are used by astronomers. Show an image of Mars taken by the Hubble space telescope: images-assets.nasa.gov/image/PIA01592/PIA01592~orig.jpg. Point out the polar ice caps. In spring and summer the ice caps melt and get smaller. Mars has seasons just like Earth. We know that Mars can be very windy too.

**Mars Polar Ice Caps**

Lesson Plan

# And Now for the Weather!
# Instruction Sheet and Guidance

## Main activity

In advance of the lesson, make a simple wind testing device, following instructions in the teacher support notes. Show the children the model and how it rotates when blown. They are going to build one, test their models using a fan and later measure the speed of the wind.

- What do they think will happen to their wind testers if we increase the speed of the fan or slow it down?
- What will they have to keep the same each time?
- What could they measure? How will they record their results?
- Where could they use their wind testers?

Let's investigate!

The children might suggest counting the number of revolutions of the cups in a certain time to measure the wind speed. Sticking a marker on one of the cups makes counting easier. A sand timer or stopwatch can be used for measuring.

## Plenary

- How well did the wind testers work?
- How did they record their results?
- What did they find out?
- How could they improve their wind testers?
- Can they think where they are used?
- What changes would they make to use them on Mars?

Scientists called meteorologists measure the weather. Instruments that measure wind speed are called anemometers. Show an image of ExoMars www.esa.int/spaceinimages/Images/2017/03/ExoMars_rover4. It is going to travel to Mars. It will take lots of measurements to find out more about the weather on Mars.

## Further activities

What could they change on their wind testers? What would be the effect? Try:

- The size or material of cups
- The length of the straws

What questions would they like to ask a scientist who studies the weather on Mars?

Investigate seasons here on Earth and on Mars:

www.esa.int/kids/en/Multimedia/Paxi_animations/Italian/Day_night_and_the_seasons

## STEM Vocabulary

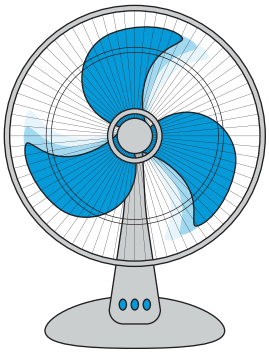
| | | |
|---|---|---|
| Weather | Telescope | Astronomer |
| Seasons | Satellite | Meteorologist |
| Mars | | |

Activity Sheet 1

# And Now for the Weather!
## Activity 1

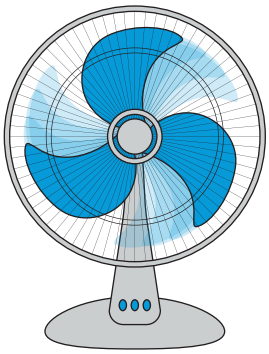
Count how many times the wind tester spins around

### Slow fan



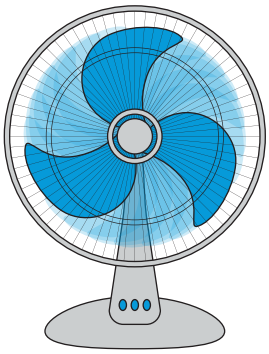
### Wind tester spins

### Fast fan



### Wind tester spins

### Fastest fan



### Wind tester spins