

We Are Learning To

decide how to select the most important evidence in making a decision about whether Pluto is a planet or not.

What I am Looking For is for you to:

- recognise that scientific ideas are based on evidence (all);
- identify evidence that does and some that does not, support a particular idea (most); and
- ensure that evidence gathered is related to the idea being considered (some).

Lesson plan**Starter**

Watch the clip 'How stars and planets might form' (this lasts 45 secs).
There is a commentary sheet to use with it.

Set up three stations around the room: 'yes', 'no', 'not sure'. Ask pupils to stand near the one which answers the question 'Is Pluto a planet?'

Main

Talk through the criteria for deciding what is or isn't a planet, eg size, orbit. You may need to explain what orbits and orbital inclination are.

Allocate two or three 'Objects in space' to groups of pupils. They then complete a fact sheet using the data provided in the 'Information package from CCLRC'. (You may wish to have mixed ability groups for this activity to enable full participation.)

When all the fact sheets are completed, display them round the room. Use the completed fact sheets from the teachers' notes if you wish to move swiftly to the next part of the lesson.

In their groups, pupils then look for evidence on particular aspects of the criteria which can help to determine 'what is a planet', and complete the evidence sheet for each of the objects in space. If time is limited, pupils should complete at least 4, including Pluto. This activity may generate a great deal of discussion - and possibly disagreement - where the evidence is contradictory.

Alternatively use the Evidence sheets for Pluto, Mars and Earth to decide if they are planets or not. Pupils first need to cut out the information boxes. Then put them in the columns of the Evidence sheet depending on whether they think about the statements in the boxes. Does the evidence support Pluto/Earth/Mars being a planet or not? Is the information true or not?

Read the 'New planets' sheet which includes 'The hunt for planet X' and information about a newly discovered planet.

Plenary - (5 minutes)

Ask the question 'Is there sufficient evidence available to say that Pluto is a planet?' Pupils then go to the appropriate yes/no/not sure stations. Ask selected pupils to give reasons for their decisions.