

We Are Learning To

make and justify decisions about a mission to Pluto.

What I am Looking For is for you to:

- make choices about scientific equipment and describe those choices (all);
- communicate the choices made with some explanation (most); and
- justify the choices made (some).

Lesson plan**Starter**

Show the PowerPoint slide that gives details on what we know about Pluto. Ask what else we might want to know (for example, is the temperature the same all over at all times? What is the surface of Pluto like? Is there water there? Could there be life? Does Pluto have a magnetic field?) What instruments would you need to send to Pluto to answer all of these questions?

Use the PowerPoint presentation on current and planned missions to show the instruments that might be taken. This will help give pupils a background to the lesson.

Main

Pupils need access to a computer for this lesson. It is best carried out in a dedicated computer facility. However, if this is not possible, there is a paper copy of the activity which could be used. This is obviously less satisfactory in terms of pupils' engagement.

Pupils are asked to make decisions about the instruments they wish to take with them on their 'Mission to Pluto'. They need to consider mass and size and whether or not they wish to land on the planet and return to Earth. The 'Mission to Pluto' game is essentially a 'drag and drop' exercise which will enable the pupils to see the result of their decisions. There is no one correct solution to this exercise. Details of the instruments are available for pupils. For more able pupils, information on area and mass are also available.

Pupils are then asked to summarise and justify their decisions in a letter to the CCLRC, which can be submitted via the CCLRC website. They should receive a response thanking them for their proposal. This may be set as homework if time is limited within the lesson. A writing frame is provided if it is thought useful.

Plenary - (5 minutes)

Ask one or two pupils to say what they thought was the most important instrument they have chosen to send and why. Explain that once a mission is agreed there are several years of planning, building and testing before the mission is ready to be launched.

Pupils can watch a five-minute video clip about how spacecraft are built and tested at the CCLRC Rutherford Appleton Laboratory.