NUCLEAR ASTROPHYSICS WITH DR MARIA LUGARO

TALKING POINTS

KNOWLEDGE

1. What element is the primary fuel for stars?
2. What processes are responsible for the formation of elements in stars?

COMPREHENSION

3. Can you explain how Maria and the RADIOSTAR team use meteorites in their research?
4. What does Maria find rewarding about her work in nuclear astrophysics and why?

ANALYSIS

5. What challenges do you think Maria will face during her future work with RADIOSTAR?
6. How can elements that are millions and billions of years old be used to tell us about the history of the Universe?

SYNTHESIS

7. What will happen when our Sun runs out of fuel?

EVALUATION

8. What has reading about Maria's work taught you about the birth of our Solar System that you did not know before?
9. Which of Maria's top tips do you find most useful and why?

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

- Draw a chart showing the lifecycle of a star. Label which elements are produced at each stage of the cycle and think about what we use those elements for in our lives.

- Astrophysicists identify elements in stars using a method called spectroscopy. You can build your own spectrometer and use it to view the components of light emitted from different light sources in your home. All you need is a cardboard box, a CD and a knife. Your homemade spectrometer works on the same principles as those used to measure stars in space. Check out the instructions in this video:

  www.youtube.com/watch?v=gMNCoJbq1cI&ab_channel=OntarioScienceCentre

MORE RESOURCES

- Have a look at a video and description of how a star is formed with this video:

  www.youtube.com/watch?v=mkktE_fs4NA&ab_channel=ScienceChannel

- What does a supernova look like? NASA captured a supernova on camera with the Hubble telescope. Investigate the story here:

  www.youtube.com/watch?v=2-O8W1M_nYw&ab_channel=MrScientific

How could an event such as this have brought the elements that we are made of, and we use every day in our industry and electronics, to Earth?