

NUCLEAR PHYSICS WITH DR MATTHEW REDSHAW

TALKING POINTS

1. What is the speed of light? (See *Introduction to the article*)
2. Explain Einstein's most famous equation in simple terms. (See *Introduction to the article*)
3. How are Chlorine-35 and Chlorine-36 similar? How are they different? (See *How is the team testing whether E really does equal mc^2 ?*)
4. How will Matthew be able to determine the neutron binding energy? (See *How is the team testing whether E really does equal mc^2 ?*)
5. Why does the team want to directly test $E = mc^2$? (See *How is the team testing whether E really does equal mc^2 ?*)
6. What has Max Planck's equation given rise to? (See *Are there any other interesting equations related to energy?*)
7. What specific subjects within physics did Richard Feynman contribute to? (See *What about other notable physicists?*)

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

- There are many beautiful equations in mathematics and physics. There are several websites that play host to some of them, like:

Live Science: <https://www.livescience.com/57849-greatest-mathematical-equations.html>

Owlcation: <https://owlcation.com/stem/Top-Ten-Beautiful-Physics-Equations>

Cosmos: <https://cosmosmagazine.com/physics/six-physics-equations-changed-course-history>

Read through them and try to understand precisely what they mean. They have been presented in such a way that makes it easier to understand the complexities involved.

- This video from Science ABC explains Einstein's theory of relativity in an entertaining way. Watch it and try to see if you can find any related videos that explain other concepts afterwards.

<https://www.youtube.com/watch?v=yuD34tEpRFw>

- And Science Magazine has 'a super-quick, super-painless guide to the theory that conquered the universe'. This is general relativity explained like you've never seen it before. Just wow!

<https://vis.sciencemag.org/generalrelativity/>