THE SUN: THE ONLY STAR IN OUR SOLAR SYSTEM

RULES OF ENERGY
- Why do you eat food?
- Why do you put gas in your car?

WHAT YOU PUT IN YOU GET OUT!
- **Law of Conservation of Energy:**
  - The total amount of energy remains constant in an isolated system

THE ATOM
- Background Information: Introducing the Atom!

FISSION OR FUSION?
- Nuclear Energy holds the nucleus together
- Two ways to release the energy: fusion (combine) or fission (separate)

TODAY’S MAIN IDEA
- A star’s primary source of energy is **nuclear fusion** which is combining two lightweight nuclei into a heavier nucleus.
FUSION IN THE SUN

- Inside the sun, hydrogen atoms are combined to make helium.
- During the process, energy is released as heat and light.

ACIVITY – MARSHMALLO W MASH

- How does our marshmallow mash experiment illustrate nuclear fusion?

WHAT IS A STAR?

- [http://www.youtube.com/watch?v=5az0W4Y1nuU](http://www.youtube.com/watch?v=5az0W4Y1nuU)
- Star = A massive, self-luminous or glowing ball of gas.
- Review: Where did all of the hydrogen and helium gas come from?

COMPOSITION OF THE SUN

- 92.1% Hydrogen
- 7.8% Helium
- 0.1% Other

- Why is it good for us that the sun is mainly composed of hydrogen and not helium?
- The sun has already used up about half of its hydrogen fuel. It has enough left for another 5 billion years.

EXPLORE HW QUESTION

2. Explore today’s main idea with this question:
How long does it take for energy produced in the core of the Sun to reach its surface?

Helpful Textbook Pages: 809 - 812

VOCABULARY FOR NEXT TIME

- Electromagnetic Spectrum

Helpful Textbook Pages: Glossary

REVIEW & YOUR EXPLANATION

- [https://www.youtube.com/watch?v=pusK1L5To &feature=youtu.be](https://www.youtube.com/watch?v=pusK1L5To &feature=youtu.be)

- With your partner, write out an example of the process of nuclear fusion in your own words.

- Provide an accompanying sketch on your whiteboards