



Educational Topic

Materials Engineer

Related Job Titles:

Metallurgical Engineer, Ceramics Engineer

Job Description:

A Materials Engineer develops and tests new types of metallic and non-metallic materials (ceramics, plastics, and composites) for use in aerospace systems and vehicles. When making a new material, Materials Engineers select materials with the structure and features needed for a given purpose. For example, they might develop lightweight, strong, heat-resistant materials for use in space. Most Materials Engineers work in laboratories. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Are you creative?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Are you good at working with a team?
- Do you express yourself well when speaking and writing?

Suggested School Subjects / Courses:

- Mathematics
- Physics
- Chemistry
- Engineering (materials)

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in Materials Engineering or a related subject from an accredited college or university. To do research, a Ph.D. is highly desired for this position.

Areas of expertise:

- *Ceramics*: develop new ceramic materials
- *Metallurgy*: study and develop new metals by combining different metals

Additional Resources:

- Accreditation Board for Engineering and Technology, Inc.
<http://www.abet.org>
- American Institute of Aeronautics and Astronautics
<http://www.aiaa.org>
- Earth to Orbit: Engineering Design Challenges
<http://eto.nasa.gov/>
- Graduate Student Researchers Program
<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html>
- Institute of Electrical and Electronics Engineers
<http://www.ieee.org>
- Junior Engineering Technical Society
<http://www.asee.org/jets>
- MATHCOUNTS Competition
<http://mathcounts.org/>
- Minority University Research and Education Programs
<http://mured.nasaprs.com/>
- NASA Cooperative Education Program for college students
<http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs/Student.Support/NASA.Cooperative.Education.Program/.index.html>
- NASA Jobs
<http://nasajobs.nasa.gov/>
- NASA SHARP Internship Program for high-schoolers
<http://www.mtsibase.com/sharp/>
- NASA Student Employment
http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Student Involvement Program student contests
<http://www.nsip.net/index.cfm>

What can I do right now?

- Participate in Bot-Ball or FIRST Robotics competitions (see [Robotics Education](#) <http://robotics.arc.nasa.gov>).
 - Take as many math and science classes as you can.
 - Participate in National Engineers Week.
 - Participate in science fair projects.
 - Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit. (202) 783-7200
 - Order activity books, poster sets, and engineering kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.
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- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE
<http://core.nasa.gov>
 - Revolutionary Vehicle Concepts and Systems student competition
<http://avst.larc.nasa.gov/competitions.html>
 - Robotics Education
<http://robotics.arc.nasa.gov>
 - Tech-Interns.com
<http://www.tech-interns.com/>

- Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic
- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



<http://quest.nasa.gov/people/index.html>

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