ASM International Canton-Massillon Chapter of
Suggested Science Fair Topic Ideas

- Metals
  - Evaluate strength, toughness, or fatigue of various metals (ex. Ti, Al, steel, alloys, etc)
  - Compressive versus tensile strength in materials
  - Work hardening to make metals stronger
  - Study corrosion of metals
    - What affects corrosion? - This could be done by comparing salt water to distilled water to tap water and comparing different temperatures
    - Which metal is most resistant to corrosion?

- Ceramics
  - Study thermal shock or conductivity
  - Sintering effects on strength

- Polymers/Plastics
  - Recycling, degradation by remelting, etc. How does the polymer type affect biodegradability of the plastic?

- Material Selection
  - Study variation of packaging on product (ex. Cans vs plastic or glass on carbonated drinks, colored glass on taste, etc)
  - How does packaging affect how long fruit stays fresh or ripens?
  - Compare and evaluate different building materials that could be used for an application.

- Other
  - Phase changes
  - Temperature changes (sublimation, evaporation, condensation, etc)
  - Evaluate toughness of various materials (compare wood, composites, metals)
  - Compare different adhesives for strength
  - Does varying the composition for concrete vary its impact ability / toughness?
  - Coatings
  - Material density
  - Hardness variations