

SCIENCE PROJECT

Intermediate Projects (Grades 7 - 8)

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SCIENCE PROJECT

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Questions & Comments

Need it Fast?

Select from the projects that are in bold font.

Project guide and information for projects that are not bold font in our list, must be prepared by a project advisors after you select them. This normally takes 3 to 4 weeks. If you are selecting a project that is not in bold font, make sure you have enough time to wait for project guide and also complete your project.

PHYSICS

A+ P

1. **Fire and Burning- what factors affect burning?** (Quick) [Exp]
2. **Fuels and their efficiency in producing energy.** [Exp]
3. **Musical instruments- the scientific principles behind them** [Exp]
4. **Music Versus Noise- difference**
5. **Pendulums- how can a period of a pendulum be increased?** (Quick) [Exp]
6. **Air Pressure** (Code=IP050) - **Water Pressure** (Code=IP051)
7. **How do you establish "elevation from sea level"?**
8. **Gears- compare efficiencies, effect of different lubricants**
9. **Solar Furnace** [Exp*]
10. **Lenses- effects of curvature, materials on light beams**
11. **Can eggs withstand a greater force from one direction than from others?**
12. **How strong are nylon fishing lines?** [Exp]
13. **How strong are plastic wraps?** [Exp]
14. **Which homemade airplane design flies best?** [Exp*]
15. **What factors affect the bounce of a dropped ball?** [Exp]
16. **How do compression and tension make things strong?**
17. **How strong is a toothpick?**
18. **Which type of lawn sprinkler works best?**



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Attention Members:

If you have selected your project for this school year, click on the link to access the page that contains startup information of your project. If that page is not updated or does not contain necessary information, let us know about your choice so we can enter or update the startup information for the project that you have selected.

Email your request with your membership ID number and allow 4 to 7 days for its completion. Startup information can be sent to you via e-mail only if for any reason you are not able to access the members' section of the website.

If you do not have much time for your project and need a priority support, discuss that with your project advisor via email. Project advisors will try to accommodate your needs as much as possible. Basic members can view details of 3 projects and get support only on one project.

Can't find your project?

If you have a new project that is not listed here, we can assign you a dedicated project advisor to help you on gathering information and designing experiments.

To use this service you need to upgrade your membership to active membership level. There is a \$150 fee for each year that you request such upgrade. (Limited to one project per active member). You need to have at least 3 weeks time for your project

19. Which type\size of light bulb produces the most light?
20. How can the strength of light be measured?- the effect on degradable materials
21. Which materials can be charged with static electricity? (Quick)
22. Which battery lasts the longest?- How can power be increased? [Exp]
23. What affects light reflection?- refraction and diffraction of light?
24. Spectrum and color production- prisms
25. How is sound produced? What affects the pitch of sound?- What affects the volume of sound? - How would you measure the velocity of sound?
26. Electric Motors- principles and factors effecting their efficiency
27. Electric Circuits- factors affecting voltage, amperage, resistance
28. Magnets and electromagnets- What affects the strength of an electromagnet? [Exp*]
29. Buzzers and bells and alarms (electromagnets).
30. Magnet Levitation- Experiment gravity defying effects of magnetism and build a Magnetic Levitating Train
31. Radios [Exp*]
32. Internal Combustion engines
34. Insulation-best materials, thickness [Exp]
35. How is paint affected by temperature changes?- Elasticity of rubber; effect of glue. (See projects 110, 111 and 112 in this list)
36. Use of solar energy- design and construct solar cookers, solar panels, etc. [Exp]
37. Designing a strong bridge

(Quick) = P that can gen be complete one to 7 day you have acc all the neces material or equipment.

coming soon Projects that being added future. Meml can request expedition of projects.

Intermediate Projects

advisor to gather
information and design
experiments.

131. Heat radiation-

132. Heat conduction

140. Roller Coaster

METEOROLOGY

1. **Snow- what happens when it melts; what does it contain; structure of snow flakes; life in a snowbank**
2. **Sky Color- account for differences in color at different times**
3. **Wind and Clouds**
4. Water levels- study and record varying levels over the year in a body of water; account for differences and the results on the surrounding environment.
5. Dew formation- how much is formed on a square meter for a period of time; account for variations
6. **Wind-does wind travel at same speeds and in same directions at different heights?**
7. Frost formation- what must the temperature be to form first; what are the effects of humidity? What is the make-up of frost and dew?
8. **Evaporation- Effect of temperature, wind, or humidity on the rate of evaporation?**
9. **Rain- can you measure the speed and force of raindrops?-What is the effect on soil, with and without ground cover? Could you simulate the effect of rain?**
[Exp*]
10. **Heat Retention- does fresh water hold heat longer than salt water? How does water compare to land and what effect does this have on the weather? What factors affect the cooling of land?**
11. **Sunlight- how do different surfaces affect the amount of sunlight reflected and absorbed? Design a method of measuring how much sunshine is available each day.** [Exp]
12. Humidity- can you collect the amounts of water in the air at different temperatures?
13. Temperature- what is the difference between direct sun and in the shade? Is the difference constant?
14. **Weather records- Design and build an automatic recording weather device. Test it over a period of time.**

15. **Effects of Humidity**- what happens to hair during periods of changing humidity? How does human hair compare to that of other animals? How do other materials compare in expansion and contraction. [Exp]

21. **Wind - what are the common wind patterns in your area and why?** [Exp]

22. **Clouds- Is cloud formation related to height, weather systems and temperature? Study and record how clouds relate to weather patterns.**

CHEMISTRY

1. Burning of different materials. coming soon*

2. Everyday activities that illustrate chemical principles. coming soon*

3. **Chemical reactions that produce energy or that require energy** [Exp]

4. **Testing of consumer products**- glues, stain removers, tooth whiteners, mouthwash, detergents, paper towels (See projects 41 to 49 below)

5. **Effects of sunlight on rubber, ink, paper** [Exp]

6. Effects of increased concentrations on the rate of chemical reactions [Exp]

7. **Compare the PH levels in mouths of various animals and humans at different times in the day** [Exp]

8. **Compare the surface tension of various liquids** [Exp]

9. **Dealing with chemical spills from industry**

10. Analyzing snow and rain for pollutants; samples from different locations

11. Effects of temperature on density of gases coming soon*

12. **Effects of salt and other contaminants on rate of rusting** [Exp]

13. **Growing crystals- factors that affect the rate and the size** [Exp]

14. **Can you obtain water from ink, vinegar, milk?**

15. What effects do different amounts of exercise have on the production of carbon dioxide in humans?

16. Analyze soil samples for their components, ability to hold moisture, fertility and PH
17. Does the amount of particle pollution vary with distance from a road, with location, with height. Determine types of particles found in pollution fallout [Exp]
18. Catalysts- how they work and why; commercial applicants and problems
19. Fire extinguishers - principles of operation and factors affecting their efficient use [Exp]
20. How do acids react with different metals under varying conditions [Exp]
21. Identify different metals by the color of flame when they burn [Exp]
22. Compare metals based on their chemical activity. Can you devise an experiment that will list metals in order of their activity, from the most (potassium) to the least active (gold)? [Exp]
23. Electroplating- the principles, how different metals can be used and the practical applications [Exp*]
24. How to make PH indicator using cabbage? (Quick)
25. How Yogurt is made? Is it a chemical or biochemical reaction?
26. Effects of temperature on viscosity of oil (Quick) [Exp]
27. Chemical reactions coming soon*
28. Brownian movement coming soon*
29. Making salt water potable, removal of pollutants [Exp]
30. Fruit Battery (Can you make electricity from fruits and chemicals?) (Quick) [Exp]
31. Alkaline battery, Make electricity from chemicals
32. Air Battery, Make electricity from salt water and oxygen (NEW)
41. Which Paper towels are better absorbent? (Quick) [Exp]

42. Which Soft Drink Has the Most Carbonation? (Quick) [Exp]
43. Which wood glue is stronger? (Quick) [Exp]
44. Which mouthwash kills more germs? [Exp]
45. Which Carpet Stain Remover is more effective? [Exp]
46. Which toothpaste has more whitening power? [Exp]
47. Which Detergent Removes the Organic Stain the best? [Exp]
48. Which paper towel is the strongest? (Quick) [Exp]
49. Which tooth whiteners works best? [Exp]
50. Does candle loose mass when melted down? [Exp]

BOTANY / BIOLOGY

1. Germination - how monocots and dicots differ - the effects of heat, light, carbon dioxide, PH level, etc. on germination rate
2. Photosynthesis - factors affecting the rate of photosynthesis (temperature, light intensity, water, carbon dioxide)
- part of light spectrum used in photosynthesis [Exp]
3. Leaf - do the numbers and sizes of stomata vary with different plants - what happens if stomata are covered and why
4. Family studies on inheritance
5. Genetic Studies - connections between hair and eye color
6. Genetic Studies - connections between hair color and strength
7. Genetic Studies - connections between sex and lefthandness
9. Reactions of protozoa to changes in the environment coming soon*
10. The preferred PH level in the soil for various plants coming soon*

11. **Determine the effects of various nutrients on plant growth** [Exp]
12. **How does the amount of water affect plant growth?** [Exp]
13. **How does the hours of sunlight affect the plant growth?** [Exp]
14. **How does the strength of weed killer affect the plant growth?** [Exp]
15. **How does the temperature affect the plant growth?** [Exp]
16. **How do pollutants affect the plant growth?** [Exp]
17. **How does PH level affect the plant growth?** [Exp]
18. **Can plants live without Carbon Dioxide?** [Exp]
19. Can plants live without Oxygen? coming soon*
20. What percentage of various plants are water? coming soon*
21. Roots - how much water is used by different plants? [Exp]
22. Roots - what is the effect of temperature, sunlight, etc., on the use of water (transpiration) [Exp]
23. **Roots - how do different types of soils affect the ability of roots to anchor plants?** [Exp]
24. Roots - what factors encourage root growth and what is the effect of water, oxygen, soil type, minerals on root growth? coming soon* [Exp]
25. What is the effect of acid rain on plant growth? coming soon*
30. **What conditions are favorable for: -fungus growth- E.G. yeast, mold, mildew diseases ?** [Exp]
31. **What conditions are favorable for: -mushroom production?** [Exp]
32. What conditions are favorable for: growing brine shrimp? coming soon* [Exp]
33. **What conditions are favorable for: algae growth?** [Exp]
34. **What conditions are favorable for: bacteria growth or control?** [Exp]

35. **Production of carbon dioxide (Biological method)**
[Exp]

46. **Field Studies -types of bacteria found around the home.** [Exp]

47. **Field Studies -types of bacteria found on the body.** [Exp]

48. Field Studies -types of bacteria found in soil of different types [Exp]

100. **Circulatory System - Factors Affecting Blood Pressure** [Exp]

101. **Circulatory System - Factors Affecting Heartbeat Rate** [Exp]

102. **Circulatory System - Factors Affecting the rate of breathing** [Exp]

103. **Circulatory System - Is there any relation between the blood pressure and the rate of heartbeat?** [Exp]

201. **Make a Model of Plant or Animal cell.**

202. How big are the plant cells?

203. How big is a drop of water? Factors affecting the size of a drop in water based solutions.

End. * If you are a member and need any of these projects, send us a [message](#) so we can try to expedite that project.