

ST. ALPHONSUS SCIENCE FAIR MANUAL
A STEP-BY-STEP APPROACH GRADES K-4

SCIENTIFIC METHOD

1. *PURPOSE* - State the problem
2. *FORM A HYPOTHESIS* - “If Then...” Statement
3. *EXPERIMENT* → Test the hypothesis

Materials & Procedure

4. *DATA/RESULTS* - RECORD YOUR OBSERVATIONS
5. *DRAW A CONCLUSION*

SELECT A TOPIC

1. Pick a topic to investigate. Try to select something that interests you or you know very little about. Included in this booklet are ideas. Please feel free to use one of these or one of your own. **Keep it simple !**
2. Decide what you want to find out about the topic. (This is the purpose.)
3. Try to pick a topic that can be measured in some way.

FORM A HYPOTHESIS

A hypothesis is a guess of what you think will happen during the science investigation. This should be in the form of an "If ... - Then ... " statement.

Example: If I put objects into a container of water. then the objects made out of wood will float.

DESIGN YOUR EXPERIMENT

Design a procedure to test your hypothesis. Your procedure is a list of steps that you will follow to test the hypothesis. This should include a list of materials and tell exactly how you are going to do your activity.

CONDUCT YOUR INVESTIGATION

Follow your procedure and change it if necessary.

COLLECT YOUR RESULTS

Record the results of your investigation.

FORM A CONCLUSION

Look at your results and form a conclusion based on those results. Tell what you learned by doing this activity. Did the results support the hypothesis?

*** Please remember, it is not important that your hypothesis was correct. Your project is a **SUCCESS** if you follow the steps of the Scientific Method and you can explain what you learned from the experiment!!

DISPLAY YOUR PROJECT ON A FREE STANDING DISPLAY BOARD !!!

IDEAS FOR STUDENTS K-4

1. Which room is the coldest in my house?
2. Which foods will grow the fastest?
3. Does mold grow faster in light or in the dark?
4. Which paper makes the best paper airplane?
5. Which bubble gum blows the biggest bubble?
6. Does the color of water affect how fast it evaporates?
7. How warm does a hat keep your head?
8. How much water is there in different fruits and vegetables?
9. Which battery lasts the longest?
10. Which battery makes a bulb shine the brightest?
11. Does the number of wraps affect the strength of an electromagnet?
12. What color is found most often in a bag of M&M's? Lifesavers? Fruit Loops? Etc.
13. What things are living or non-living?
14. Which bandage stays on the longest in water?
15. Which bandage peels off the easiest?
16. Which popcorn pops the best?
17. Which brand of crayons have the best color?
18. What does bubble gum not stick to?
19. What types of things rust?
20. Does the depth that seeds are planted affect their growth?
21. Do seeds grow better in the dark or in the light?
22. Which type of water is best for growing seeds?
23. Does music affect plant growth? ..
24. Can you grow seeds in other material besides soil?
25. Does my pet prefer people food or pet food?
26. What is the most common date in a collection of pennies?
27. Which objects float in water?
28. Does cold water or hot water freeze faster?
29. What dissolves in water?
30. Does the color of a freeze pop affect how fast it freezes?
Melts~
31. Which dish detergent makes the best bubble solution?
32. Which magnet is the strongest?
33. What sticks to a magnet?
34. What kind of food do earthworms prefer?
35. What kind of food do meal worms prefer?
36. Can you teach a meal worm to travel through a maze?
37. What is the best way to ripen fruit?
38. What shape makes the best paper boat?
39. Does music affects a persons heart rate:
40. Which fruits float?