Name_____ Date_____ Section_____

$(MS)^2TC$ 7th Grade Science Fair Project
How to Write an Abstract Lesson

What is an abstract and why is it important?

- An abstract is a summary of a scientist's work.
- If your project is chosen to represent $(MS)^2TC$ at the Science & Engineering Fair of Metropolitan Detroit (SEFMD), you will submit your abstract at the time of application to the SEFMD. The abstract is the first part of judging at the SEFMD and may determine whether your project will be accepted for further judging or not.
- The abstract will also be a part of your Science Fair display boards.
- The abstract is the first thing the judges read on a student's application and on the display board. Its quality determines what questions the judges ask. It is important that the abstract give these judges a quick, clear overview of the investigation.

A few words about spelling and grammar…

- Judges (and fair-goers) receive a first impression about your attention to detail by the care you have devoted to spelling and grammar in paperwork and on display boards.
- Be sure to spell-check all paperwork and *also re-read it for punctuation and word usage errors*.
- Printers have a saying that, "The largest errors are made in the biggest type!" Carefully check spelling and punctuation on the headlines and banners you use on your display boards.

The Parts of An Abstract

Scientific investigations can be very complex. In order to help people understand them, scientists write a short summary (called an abstract) of their work. It quickly tells these four things:

- the purpose of the experiment
- the procedures used
- the data/results
- the conclusions

Here is an example of how one student has written hers. Let's read it and notice that the paragraphs in her abstract correspond with the parts listed above.

Sample Abstract

I read that oil from outboard boat motors kills plants along rivers. I wanted to see if typical plants from the Willamette River were affected.

I went to some riverside marsh lands and collected two samples each of five types of plants. My reading told me that engine exhaust contained about 2% oil, so I prepared some water mixed with 2% oil and I tried to grow one of each type of plant in that. I tried to grow the other plant of each type in pure water.

For three weeks, I grew the plants and photographed them every week. At the end of the time I measured the height of the plants and then dried them and measured their weight. All of the plants grown in the oil mixture either died or were much smaller than those grown in pure water.

I can see from my results that for the five types of plants I used, oily water kills or reduces growth. It would be interesting to try other plants (such as trees) and use a longer growing time to see if the results are similar.

Developing Your Abstract

1. The student in the example did a good job writing her abstract. In the first paragraph she has a very short description of the problem. Take a moment and write a sentence or two about your investigation. What did you study? What did you want to find out? Write your **problem statement** here. (5 pts)

2. From the sample abstract, we see the next part is to briefly explain your method of investigation **(procedure)**. Don't give all the details here, but do tell the basics of what you did, what you worked to control and what you measured. (5 pts)

3. The next step is to briefly discuss your **observations and results**. Be especially careful to include results that led you to the conclusion you draw in the last part of your abstract. Tell just the general trends of your results here, not many specifics. Don't use tables or graphs right now, rather just mention the important generalities. (5 pts)

4. The last part of the abstract is your **conclusion**. You set out to answer a question; now use your results to answer it. If you can think of some extensions of your investigation, mention them — even if they aren't something that would be practical for you to do yourself. (*The student in the example didn't expect to plant trees herself. She just said that it would be interesting if someone did.*) (5pts)