

# Common Difficulties Encountered by Non-Native English Speakers Lecture 2

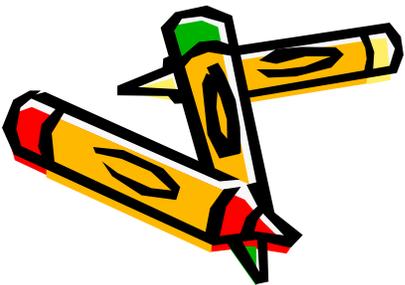
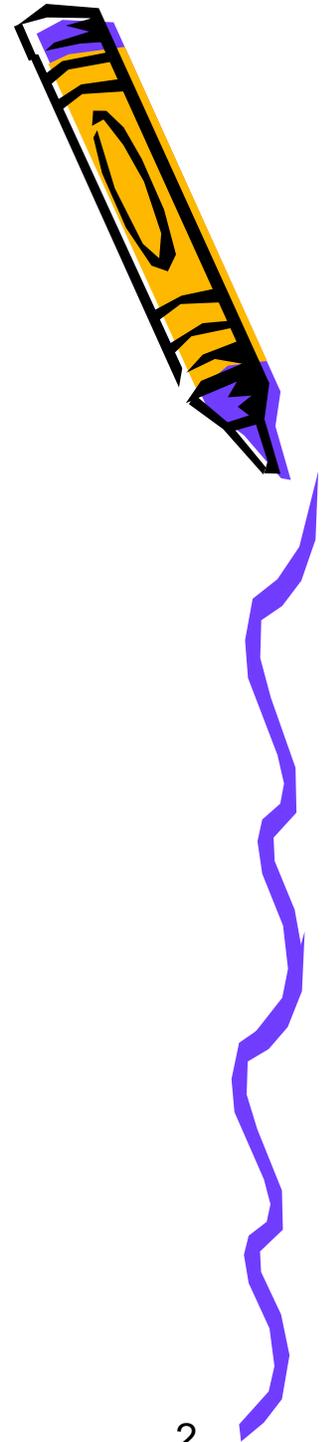
Georgia Cancer Center

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Georgia Cancer Center  
Professional Skills Development  
Writing Program

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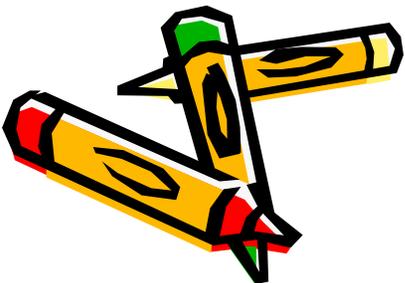


# Outline



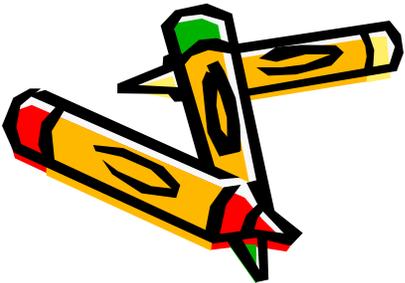
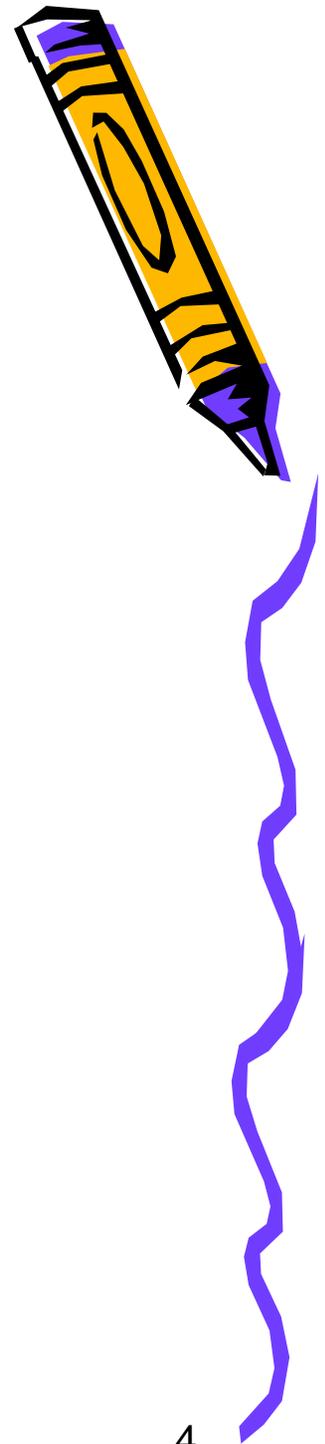
- Session 1: Elements of Scientific Writing
- Session 2: Common Difficulties Encountered by Non-Native English Speakers
- Sessions 3-4: How to Write a Scientific Paper
- Session 5: Bibliographic Reference

Fall Semester: Grant Writing presentations

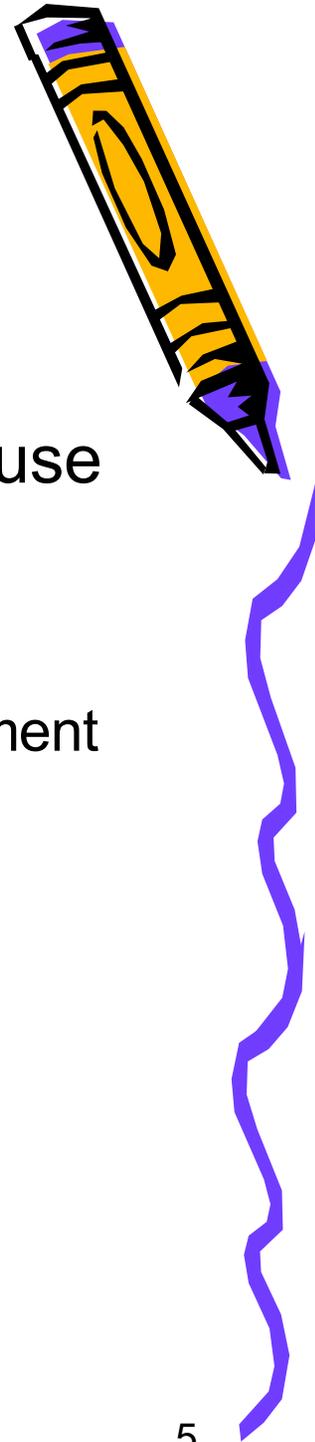


# Lecture 2: Topics

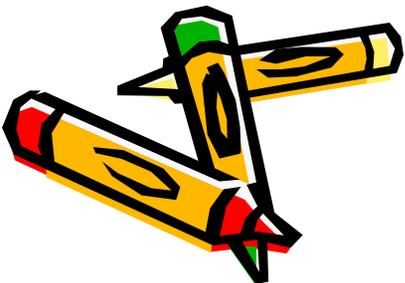
- Tenses
- Subject-verb agreement
- Singular vs plural
- Commonly used terms in scientific writing
- Articles: A/an/the
- Which/that
- And more.....



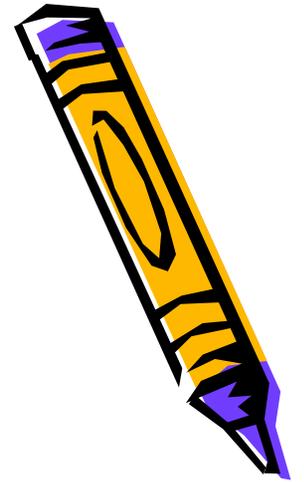
# Tense



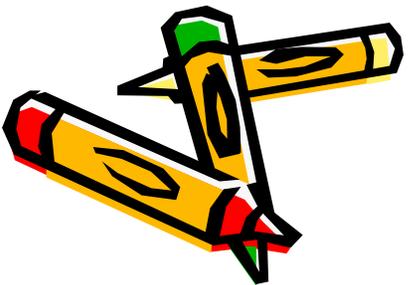
- Problem particularly with Chinese scholars because Chinese language does not have tenses
- In a scientific paper:
  - **Abstract**: usually **past** tense, except introductory statement may be present tense
  - **Introduction**: usually **present** tense
  - **Methods**: **past** tense
  - **Results**: **past** tense
  - **Discussion**: **present** tense



# Subject-Verb Agreement

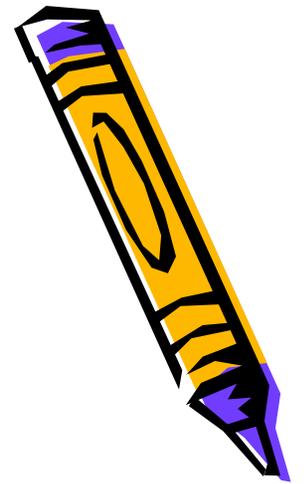


- For complicated sentences, remember to look for the subject, wherever it may be, and make the verb agree with the subject.
- Read the sentence without all the modifiers and clauses to help you.
- Mentally diagram the sentence to help you.



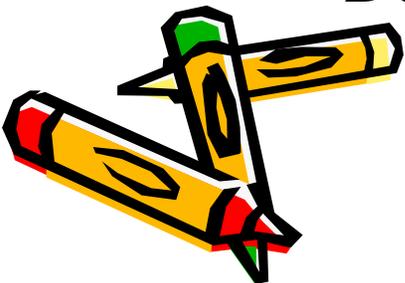
# Plural Nouns Used as Adjective

(which we often do in scientific writing!)

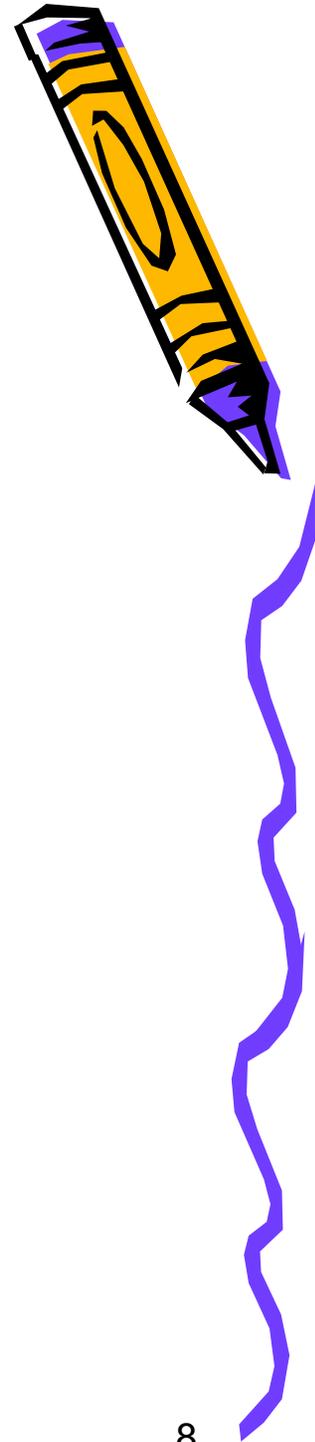


When a plural noun is used as an adjective, it becomes singular:

- *Phenotype of dendritic cells*
  - *cells* is a plural noun
- *Dendritic cell phenotype*
  - *phenotype* is the noun and *cells* is the adjective
  - But *cells* becomes singular as the adjective
    - Not dendritic *cells* phenotype
- *Dendritic cell population*
  - But: *population of dendritic cells*

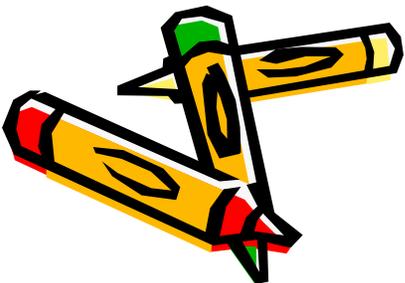


# Adjective with a Plural Noun



In English, if a noun is plural, the adjective does not become plural, as in European languages

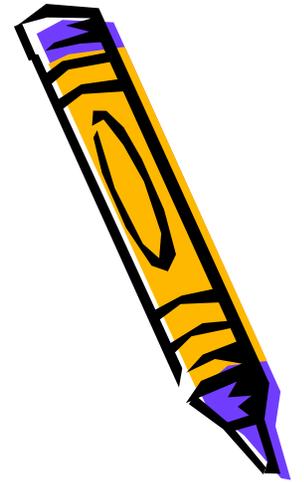
- *We own three confocal microscopes.*
  - *Not: three confocal~~s~~ microscopes*



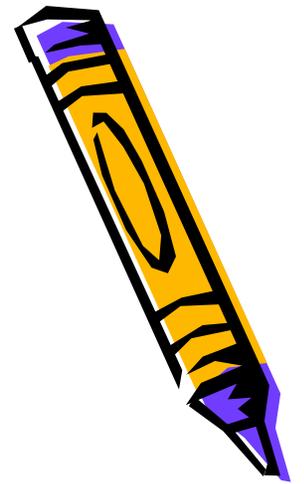
# Abbreviations: Singular or Plural?

If a word or term will be used in both the singular and plural, then it is better to derive the abbreviation from the singular form and add an **s** to make it plural (and don't add an apostrophe before the **s**).

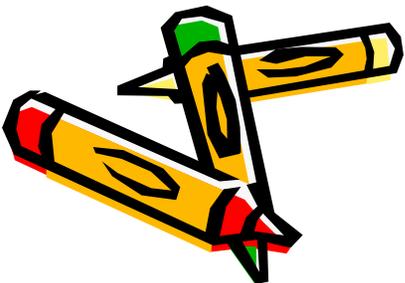
- *An important effector cell in an immune response is the dendritic cell (DC).*
- *Islet infiltrates consist mainly of T cells but also include macrophages, DCs, and B cells.*
- *Dendritic cells (DCs) are important effector cells.*



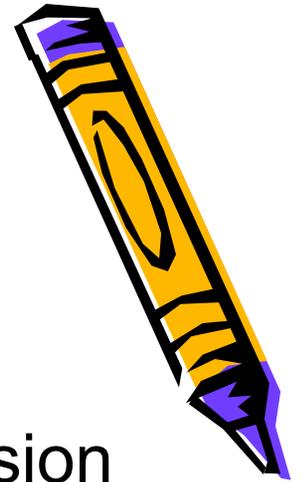
# Commonly Used Terms in Scientific Writing: Which Word Should I Use?



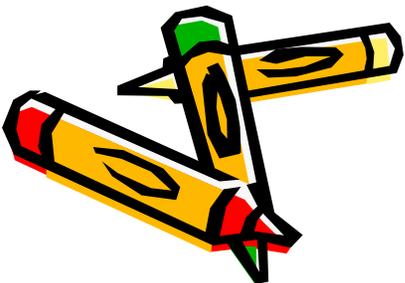
- **Suggest:** to cause you to think about something
  - Use when your results point to that direction, but you haven't totally proven it
  - *The genetic results **suggest** that CD103 is a candidate gene for the development of type 1 diabetes.*
- **Assess:** to evaluate, but in common speech usually refers to estimating a value for something.
  - Not a great word to use in science. Use **determine** instead.



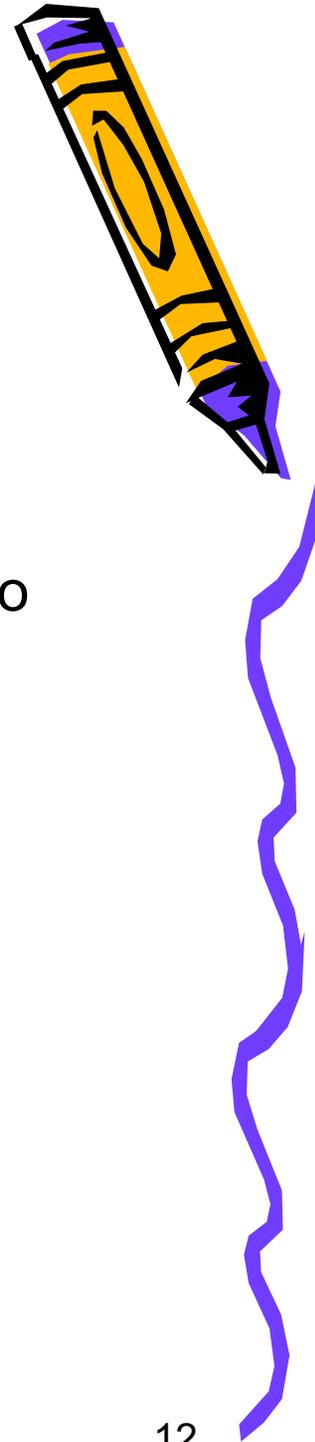
# Commonly Used Terms



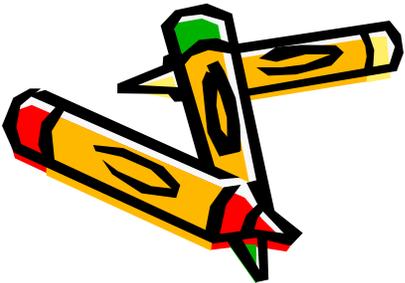
- **Determine:** to decide or settle, to reach a conclusion
  - *We wanted to **determine**.....*
  - For experiments that have not yet been done: *The actual binding constant remains to be **determined**.*
- **Investigate vs Examine**
  - **Investigate:** to observe or determine in detail
  - **Examine:** to analyze or carefully observe
  - **Investigate** is a little stronger and shows more action so is a better verb to use.



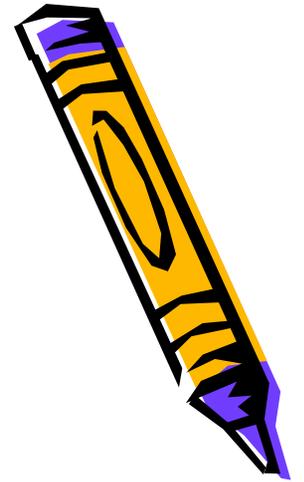
# Commonly Used Terms in Scientific Writing



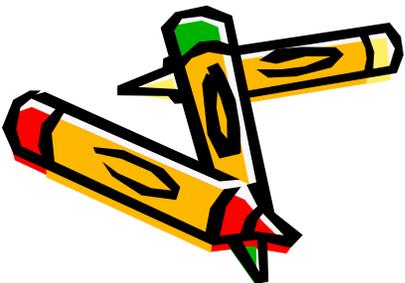
- **Demonstrate** vs **Show**
  - **Demonstrate**: to prove or make evident by reasoning, to describe by experiment
  - **Show**: to make visible, to present
  - Demonstrate is stronger for scientific writing
- But use **show** for:
  - As **shown** in Fig. 14
  - Not: As **showed** in Fig. 14



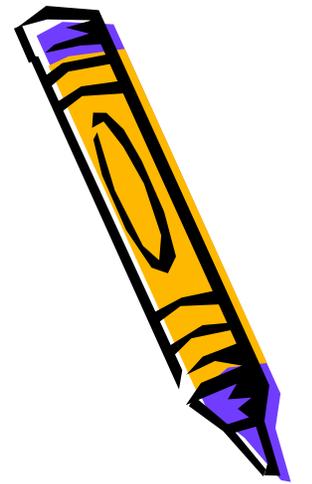
# Commonly Used Terms in Scientific Writing



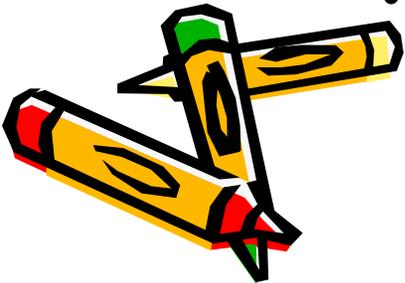
- **Imply** vs **Implicate**: frequently misused
  - **Implicate**: to connect or involve
    - *Our results **implicate** glucocorticoids as a cause for...*
  - **Imply**: to say or express indirectly
    - *The surgeon **implied** that the disease was fatal.*
- **Elucidate**: to make clear
  - Usually used with respect to something very complicated
  - *Our long-term goal is to **elucidate** the role of PPAR $\gamma$ 2 in the development of type I diabetes.*



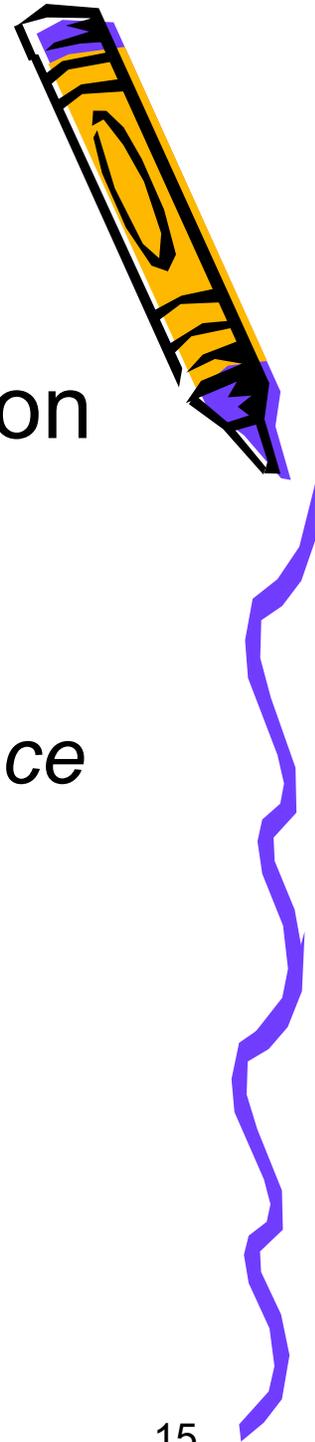
# Commonly Used Terms in Scientific Writing



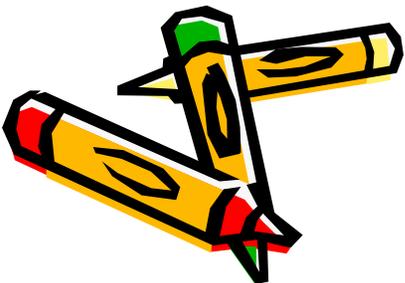
- Evidence
  - A body of facts or information
  - Always singular
  - There may be 3 pieces of evidence, but not 3 evidences.
- Similarly vs Similar
  - Use *similarly* if you mean in a similar way
    - *Similarly, the treated cells showed high levels of apoptosis.....*
    - *Both control and experimental cells behaved **similarly**.*
    - *The treated cells responded in a **similar** manner....*
    - *But: The treated cells were **similar** to the control cells.*



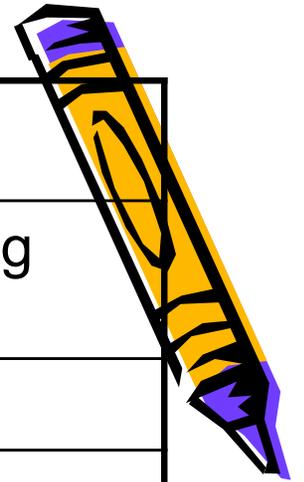
# Slang/Spoken Language



- Be careful not to use slang or common terms in scientific writing.
  - ~~get~~ *the DNA sequence*
  - Change to: *determine the DNA sequence*
- See the list in Lecture 1 for more examples.



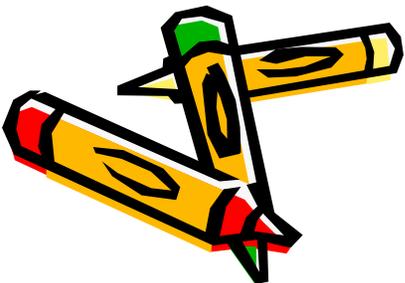
<u>Not</u>	<u>Use instead</u>
We <b>got</b> the following results	We <b>obtained</b> the following results
We <b>got to</b>	We <b>will have to</b>
We <b>can't</b> conclude	We <b>can not</b> conclude
<b>It's</b> still questionable	<b>It is</b> still questionable
Many organisms use sugars <b>like</b> trehalose	Many organisms use sugars <b>such as</b> trehalose
We observed <b>a lot of (great deal of)</b> cell death	We observed <b>much</b> cell death
We <b>plan to</b> confirm our results	We <b>will</b> confirm our results
We used a different antibody <b>as</b> we were unable to distinguish between...	We used a different antibody <b>since</b> we were unable to distinguish between...



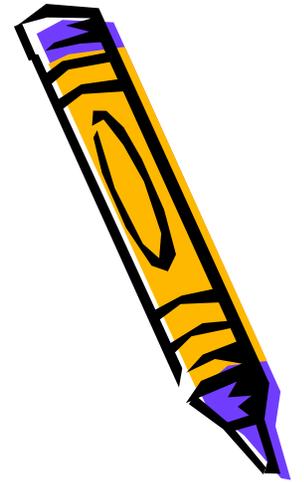
# There is/There are



- Try not to begin sentences with **There are**....
  - Sounds weak.
  - Too wordy.
- Examples:
  - *There are three areas that need to be changed.*
    - Change to: *Three areas need to be changed.*
  - *In rare cases, there can be a perforation of the colon.*
    - Change to: *In rare cases, the colon can be perforated.*
    - Or: *In rare cases, the surgeon can perforate the colon.*



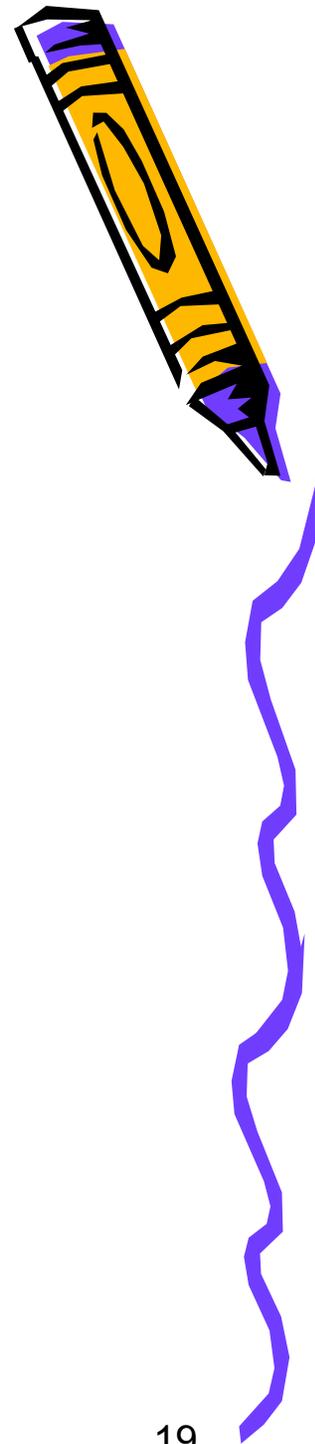
# Articles: A/An/The



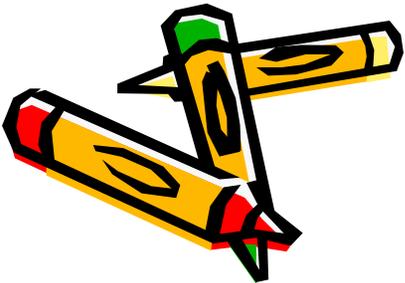
- Which to use: *a/an* or *the*?
- When to use them, when not to.
  - Often it takes an “ear” for the language, which takes time to develop.
- One of the most difficult concepts in writing for non-native English speakers, both European and Asian.



# Articles: A/An/The



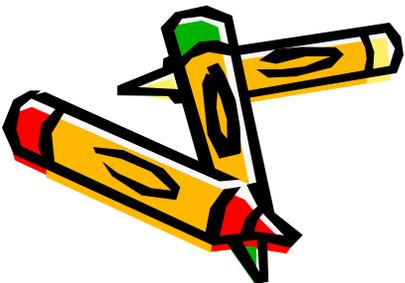
- A/An/The are “articles”
  - Articles are not adjectives
- Identify nouns as nouns
- Identify nouns as general (**a/an**) or specific (**the**)
- **A/An**: indefinite, evolved from the word one
  - Used only in singular
  - If a noun is plural, the *a/an* is usually omitted
- **The**: specifies the noun
  - *The picture* means a specific picture.
  - *A picture* could refer to any picture.



# Rules

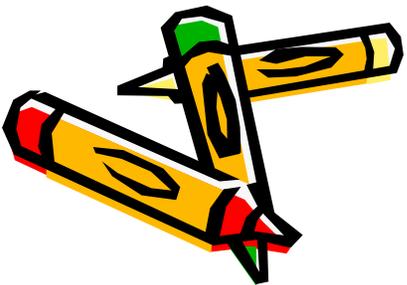
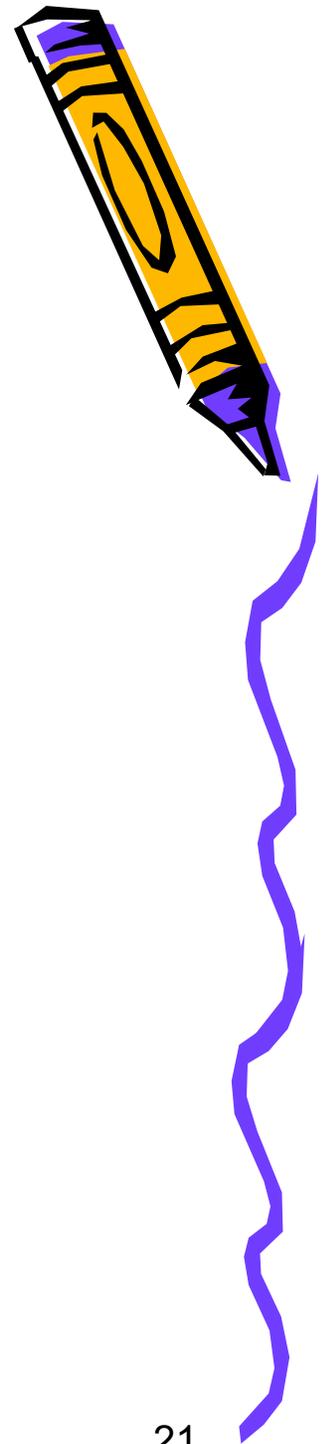


- Use **a** or **an** with singular nouns that name things that can be counted but whose specific identity is not known.
  - *A paper, an experiment*
  - **NOT**: *The nurse gave a water to the patient.*
    - Water cannot be counted. So it should read: *The nurse gave water to the patient.*
    - But, *The nurse gave a glass of water to the patient.* Glass can be counted.
- Use **the** with most nouns whose identity is known to the reader.
  - *The professor teaching this class...*
  - *The experiment that I just described...*

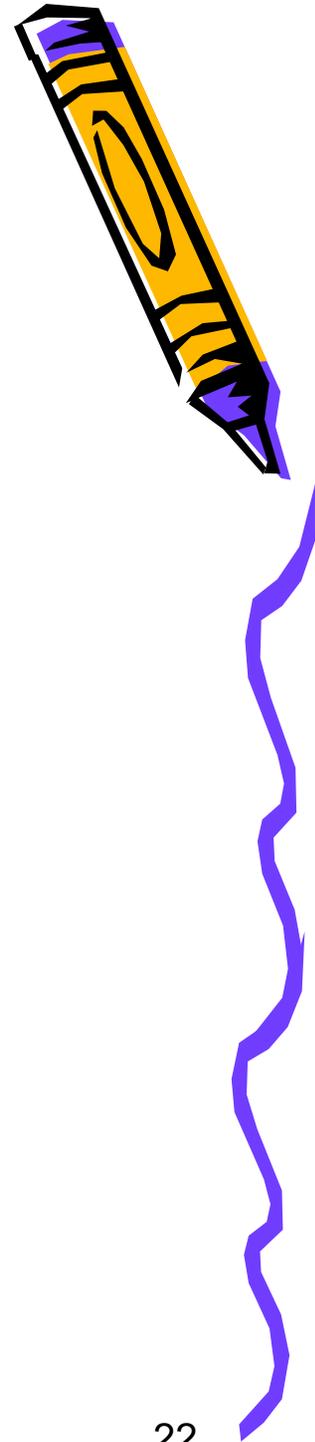


# Rules

- Do not use **the** with most singular proper nouns.
  - **NOT:** **the** Professor Smith
  - **NOT:** **the** China
- But there are many exceptions:
  - *The United States of America*
  - *The People's Republic of China*
  - *The Georgia Cancer Center*



# Articles: A/An/The



- British and American writing differ somewhat.
- British omit the article before singular nouns that refer to places or times
  - British: *He attends university.*
  - American: *He attends **a** university.*
- But there are some nouns in American English where the article is also omitted.
  - *On Sunday, she always goes to church.*



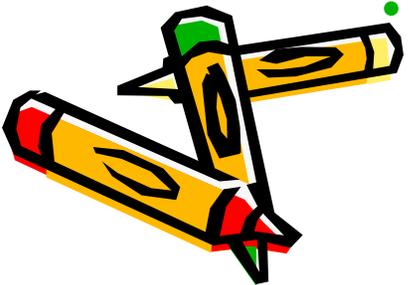
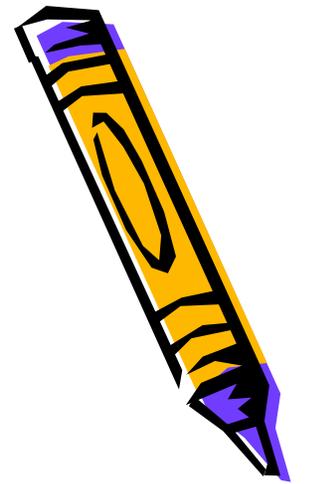
# A or An?

## Rule

- Use *a* before a word that starts with a consonant.
- Use *an* before a word that starts with a vowel (a, e, i, o, u).

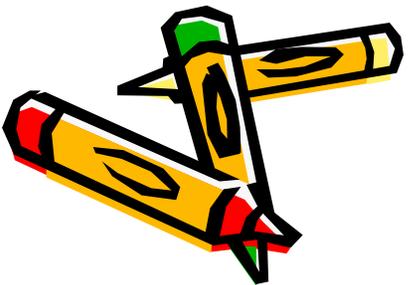
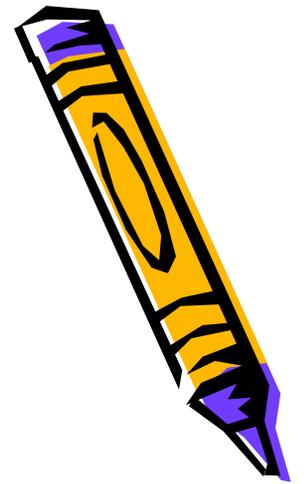
## But

- It is the **sound** at the beginning of the word, not necessarily the letter
  - *A* university/*an* umbrella
  - *A* hero/*an* honest person
- With acronyms, it is how the first letter sounds:
  - f, h, l, m, n, r, s, x: they sound like vowels, so take *an*
    - *An* MRI; *a* CAT scan

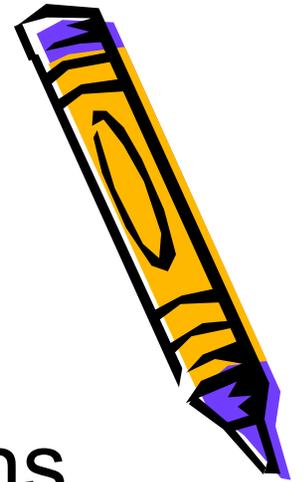


# A/An/The

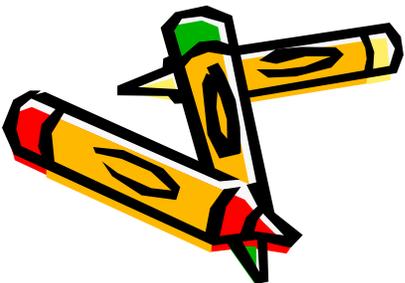
Yes, it is confusing....but don't worry.  
**You will get the hang of it  
with practice!!**



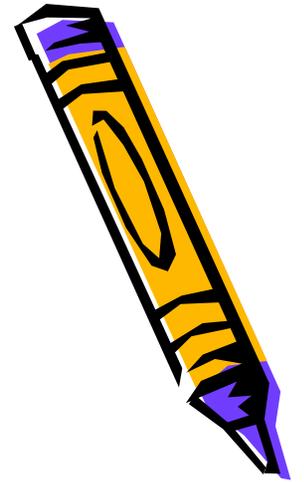
# Whether



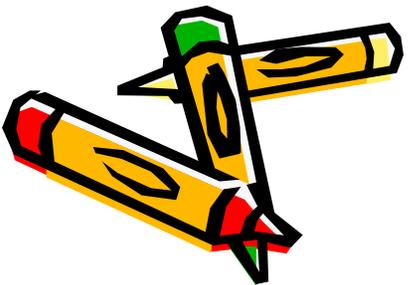
- Conjunction used in **indirect** questions to introduce an alternative
  - Sentence does **not** take a **?** because the question is indirect
  - *These experiments will tell us **whether** *GILZ* inhibits marker gene expression indirectly through down-regulation of *PPAR $\gamma$ 2*.*



# Whether



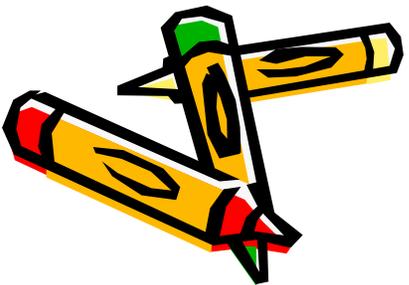
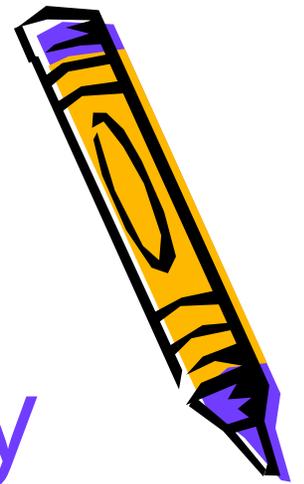
- Do not use *whether or not*. Or not is redundant.
  - **NO:** *These experiments will tell us **whether or not** GLZ inhibits marker gene expression indirectly through down-regulation of PPAR $\gamma$ 2.*
- Do not use *as to whether*. Change to *whether*.



# Which/That: A Pair of Words with Many Functions

And two words that cause a lot  
of problems!

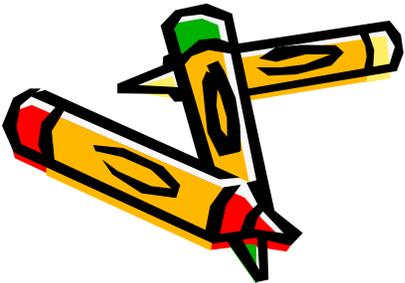
Which/That are Pronouns



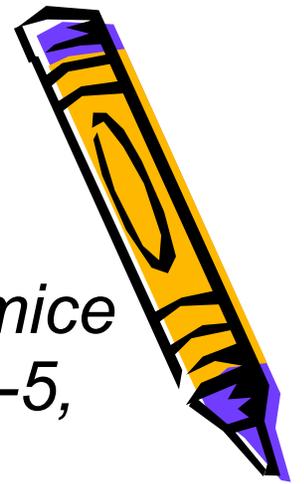
# Which/That: Can Introduce Adjectival Clauses



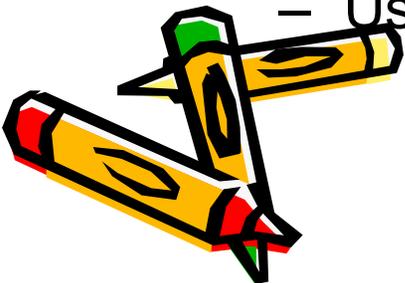
- Pronouns that introduce adjectival clauses (clauses that modify nouns in the sentence)
- **Restrictive** clauses define the noun
  - Use *that*
  - No commas
- **Non-restrictive** clauses are extra and the sentence is meaningful without them
  - Use *which*
  - Set the phrase off by commas



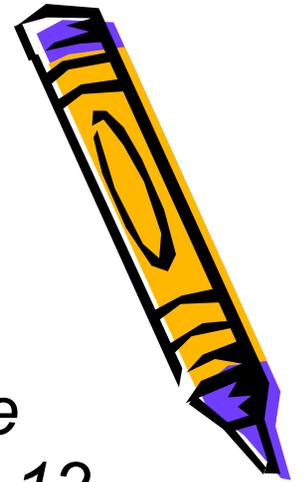
# Which/That: Examples



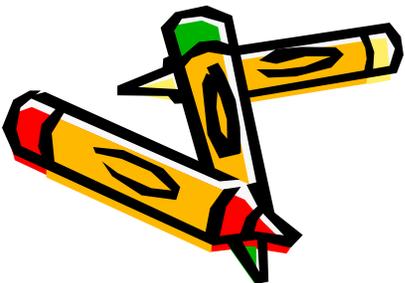
- *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells (which/that) secrete Il-4, Il-5, Il-6, Il-10, and Il-30.*
- **Answer:** *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells, which secrete Il-4, Il-5, Il-6, Il-10, and Il-30.*
- The clause about the cytokines is **non-restrictive**, because it is extra information. The sentence has meaning without the final clause: *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells.*
  - Which
  - Use commas



# Which/That: Examples



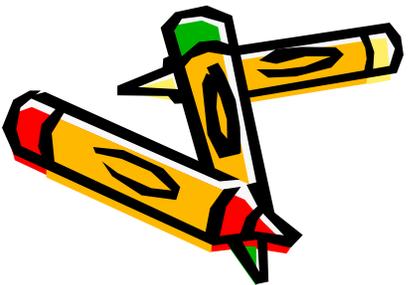
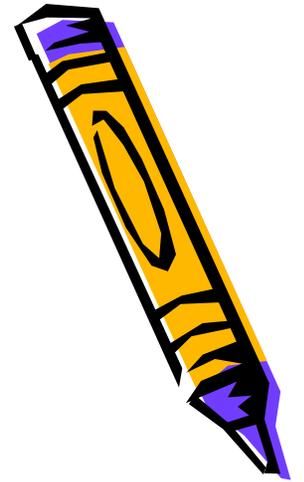
- *Effector CD4+ T cells in non-obese diabetic mice may include cells (which/that) secrete Il-2, Il-3, Il-12, IFN- $\gamma$  and TNF- $\gamma$ .*
- **Answer:** *Effector CD4+ T cells in non-obese diabetic mice may include cells that secrete Il-2, Il-3, Il-12, IFN- $\gamma$  and TNF- $\gamma$ .*
- The clause is restrictive, defines the cells, is needed for the meaning of the sentence.
  - That
  - No commas



# Which/That

## Note

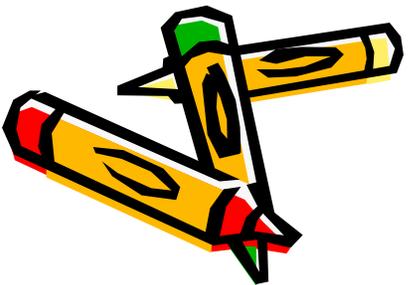
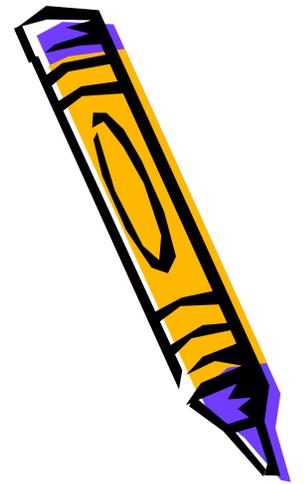
The “**which/that**” problem is probably one of the most common mistakes that I find among all scientists, including native English speakers!



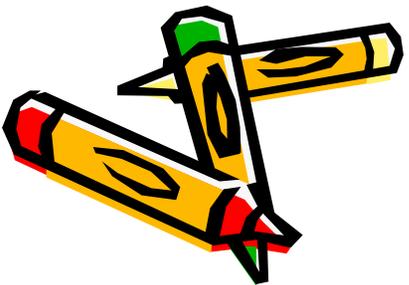
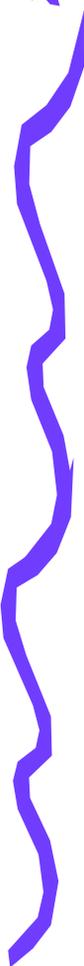
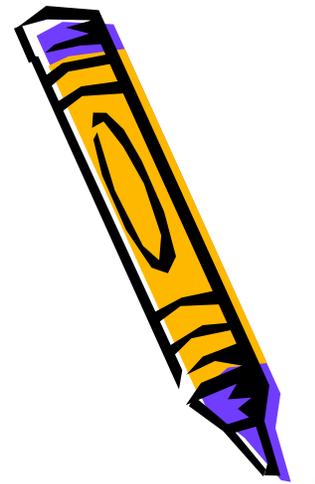
# This/That: Demonstrative Pronouns or Adjectives

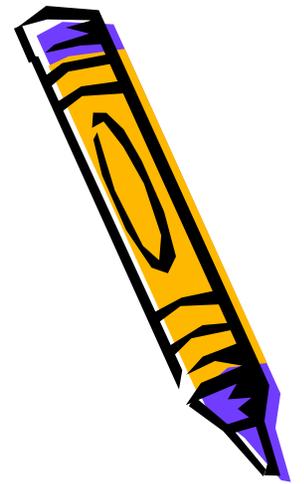
- **This/That** can be a pronoun or an adjective.
  - Pronoun acting as a subject:
    - *That is the reason why you can't go out tonight.*
    - *This is a good place to eat.*
  - Pronoun acting as an adjective:
    - *That dog bit me.*
  - Pronoun acting as the subject (or object) of a clause.
    - The dog **that** bit me was mean.

**NEVER USE COMMAS with Demonstrative Pronouns or Adjectives!**



# Some improper uses of That





**That** can introduce a noun clause that is the subject or object of a verb, but make sure **it** has a verb!

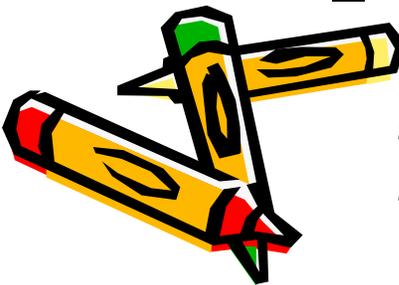
- *The observation of disease protection in these NOD congenic mice demonstrates **that** the existence of over 20 individual MHC and non-MHC-associated Idd loci on 12 chromosomes.*
  - **But there is no verb in that clause!!!! Needs a verb. Or does it?**

*Should it be (?):*

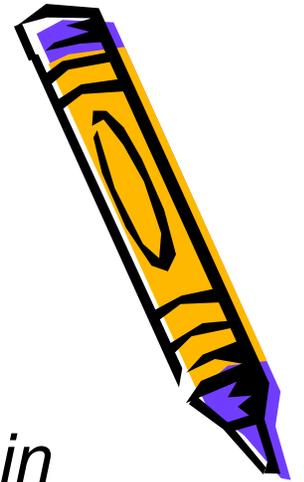
- *The observation of disease protection in these NOD congenic mice demonstrates the existence of over 20 individual MHC and non-MHC-associated Idd loci on 12 chromosomes. (no **that** needed)*

*Or (?):*

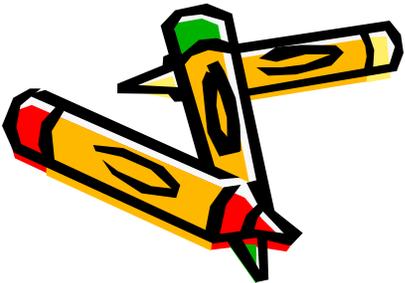
- *The observation of disease protection in these NOD congenic mice demonstrates **that** the existence of over 20 individual MHC and non-MHC-associated Idd loci must be involved in disease pathogenesis.*



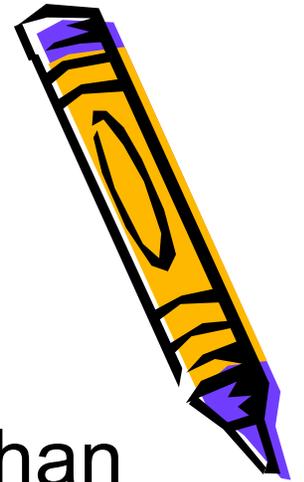
# Another example



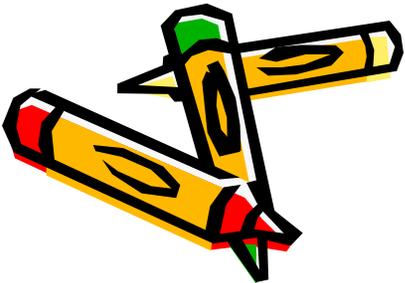
- We found *that* lower expression of CCR6/CCR7 in bone marrow dendritic cells from NOD mice using GE Chemokine cDNA arrays.
  - not a dependent clause, there is not another verb
- **Change to:** We found lower expression of CCR6/CCR7 in bone marrow dendritic cells from NOD mice using GE Chemokine cDNA arrays.
  - expression is object of verb found; all the rest are adjectival, prepositional phrases. **That** does not belong in the sentence!



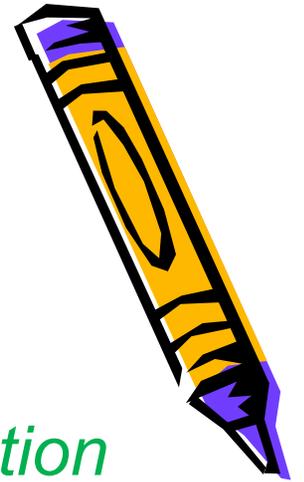
# Different from....



- Always use **different from**, not different than
  - *Zebrafish embryos are **different from** mouse embryos because they are fertilized externally and are transparent.*
- **Exception: different than** is acceptable when followed by a clause
  - *The experiment that she actually did was **different than** the one she planned to do.*

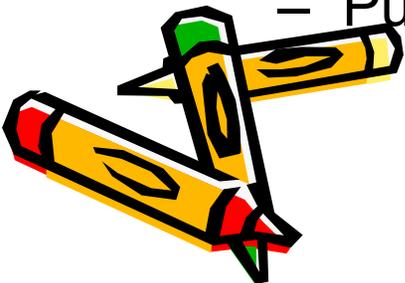


# Misplaced Modifiers

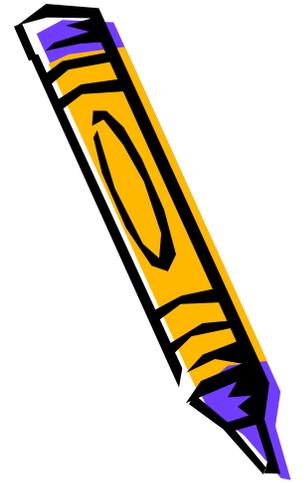


*The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced in rodent tumorigenesis.*

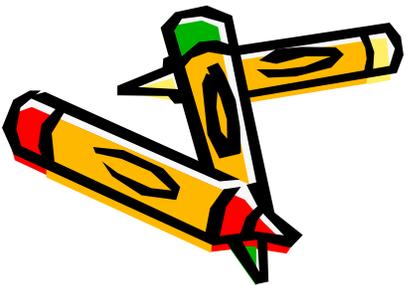
- *Carcinogen-induced* modifies *tumorigenesis* (acts as an adjective)
  - What kind of tumorigenesis? Carcinogen-induced.
    - Put it next to tumorigenesis.
- *In rodent* modifies *tumorigenesis* (a prepositional, adjectival phrase)
  - Answers where
  - Put it after tumorigenesis (because it is a phrase)



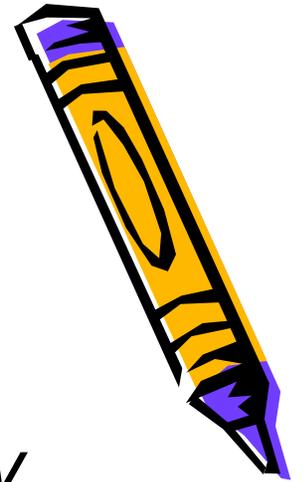
# Misplaced Modifiers



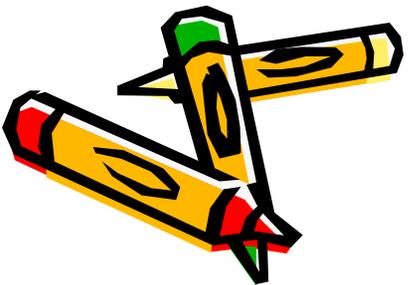
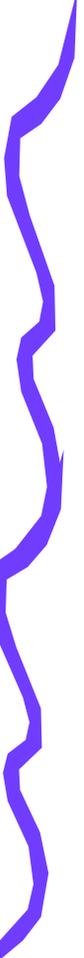
- **Original:** *The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced **in rodent** tumorigenesis.*
- **Change to:** *The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced tumorigenesis **in rodents**.*



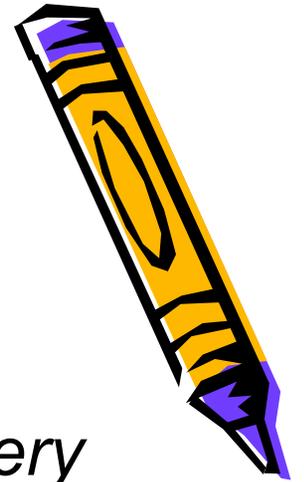
# Misplaced Modifiers



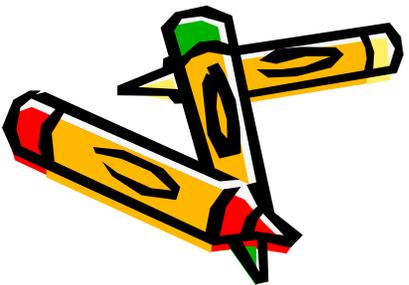
- *Gastroesophageal reflux disease is a very common complaint that may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma.*
- What does the phrase *that may be complicated* describe?
  - In this sentence, it describes complaint. But it is meant to describe the disease.



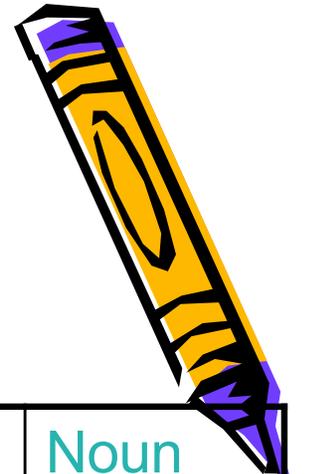
# Misplaced Modifiers



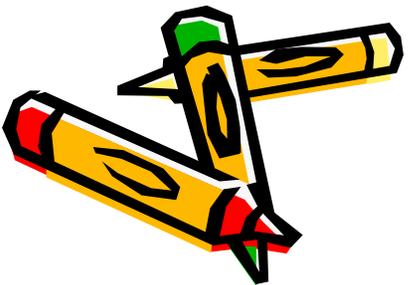
- **Original:** *Gastroesophageal reflux disease is a very common complaint that may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma.*
- **Change to:** *Gastroesophageal reflux disease, which may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma, is a very common complaint.*



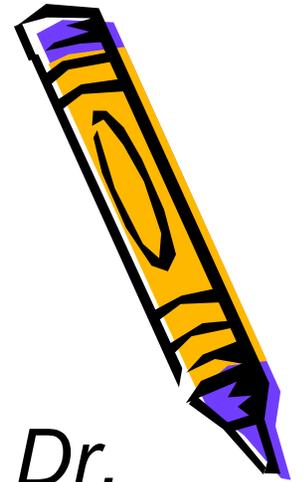
# Order of Adjectives



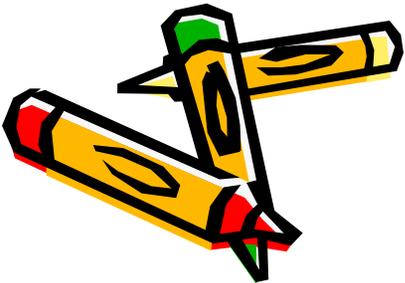
Determiner	Quality	Size	Age	Color	Origin	Material	Noun
21		large		green			tables
A	pretty		new			silk	scarf
An	energetic		young		Chinese		post- doc
A	smart, exciting						professor



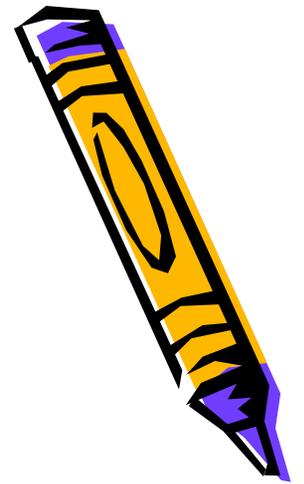
# Be careful of Spellcheck!



- *Dr. Michael ShROUT presented a **plague** to Dr. Lloyd Cook as Past Chair of the MCG Faculty Senate..... Drs. Campbell and Potter were presented a **plague** in appreciation of their service.....*
- Spellcheck did not catch the gross error here.....should be **plaque**, not **plague**.
  - **Big difference!!!**



# Parallel Construction

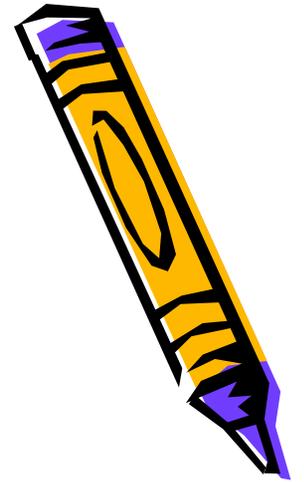


All components of a list should be in the **same grammatical form**.

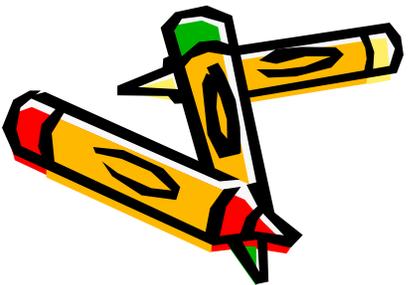
- *Mutations in RLF2 are associated with severe mycobacterial, staphylococcal infection and leprosy.*
  - 3 items in the series but nonparallel
    - mycobacterial
    - staphylococcal infection
    - leprosy
- **Change to:** *Mutations in RLF2 are associated with severe mycobacterial and staphylococcal infections and leprosy.*
  - 2 items in the series: infections (2 types) and leprosy, in parallel



# Use of Hyphens

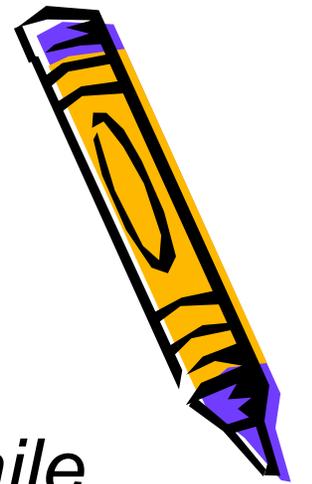


- Compound nouns do not take a hyphen (dash)
  - *What was the **dose response** of glucocorticoids in bone marrow cells?*
- Compound adjectives take a hyphen
  - *We carried out glucocorticoid **dose-response** experiments in bone marrow.*

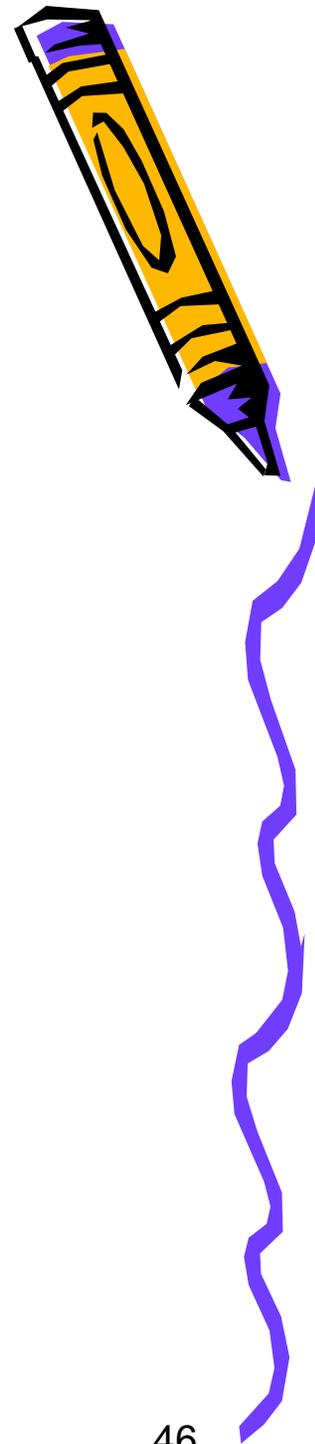


## Other examples.....

- DNA is a *double-stranded* molecule while RNA is usually a *single-stranded* molecule.
- DNA consists of *double strands* of the sugar- phosphate backbone.
- DNA is a *double helix*.



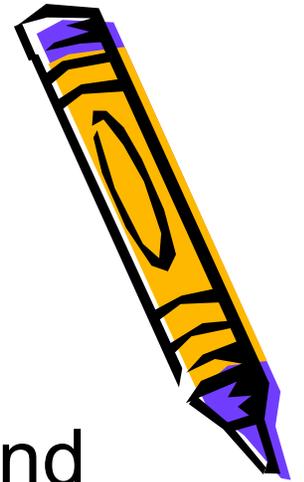
# Use hyphens in the following common adjectival phrases



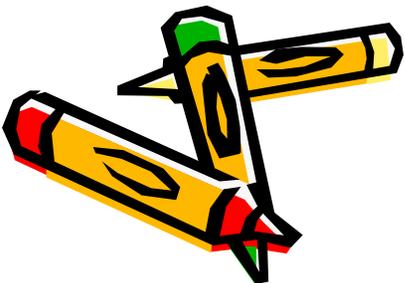
- *Insulin-mediated effect*
- *DNA-binding protein*
- *Antibody-specific reaction*
- *Heat-induced effects*
- *12-week-old mice*
  - Not 12 week-old mice (unless you are talking about a dozen mice that are one week old!)
- *Well-known markers*



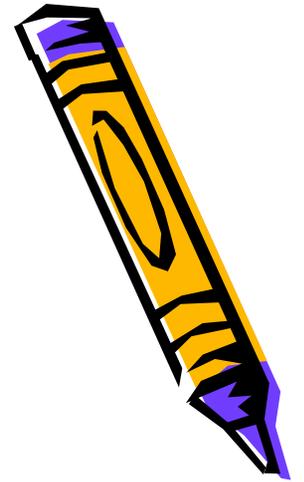
# Upper Case (Capital) Letters



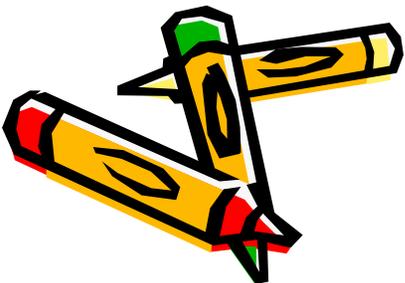
- Chinese language does not have upper and lower case letters.
- General rule is to use upper case for the first letter in all words of a title except for articles (a/an/the), prepositions, and other minor words.
- However.....things are a little different in science.



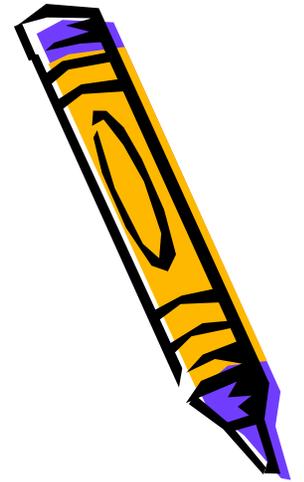
# Upper Case (Capital) Letters



- Some journals use upper and lower case letters in the title of a paper, but some just upper case the first word
  - *Apoptosis Associated with Deregulated E2F Activity is Dependent on E2F1 and Atm/Nbs/Chk2* (Molecular & Cell Biology)
  - *A draft genome of Yersinia pestis from victims of the Black Plague* (Nature)

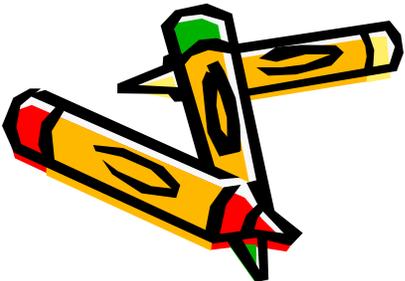


# Words in a Series

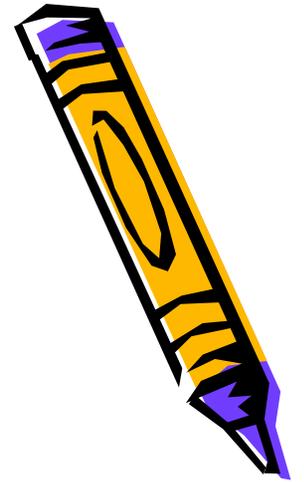


- *The use of animals is justified by the importance of the disease under study, osteoporosis, and the impossibility of performing a comparable study in humans.*
  - How many reasons are there? Looks like 3?
    - importance of disease
    - osteoporosis
    - impossibility

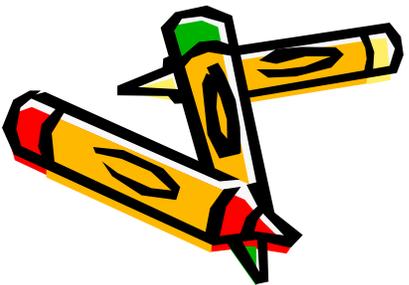
**But that is not what was meant!!**



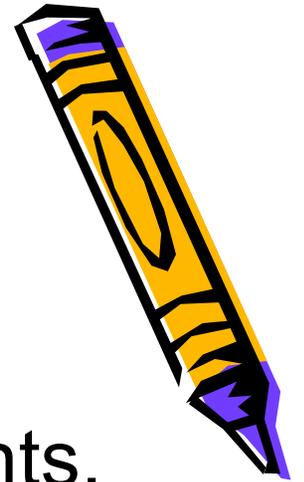
# In a Series



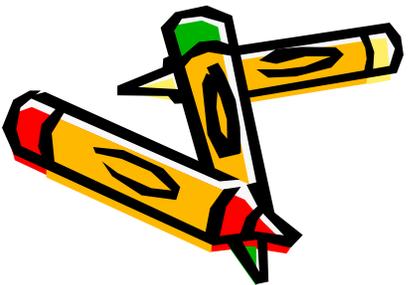
- **Change to:** *The use of animals is justified by the importance of osteoporosis and the impossibility of performing a comparable study in humans.*
  - Removed *the disease under study*. It is redundant, anyway.
- An alternative might be to leave the sentence as it was but to put *osteoporosis* in parentheses.
  - *The use of animals is justified by the importance of the disease under study (osteoporosis) and the impossibility of performing a comparable study in humans.*



# Serial (Oxford) Comma Rule

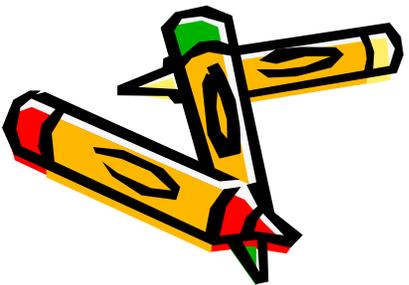
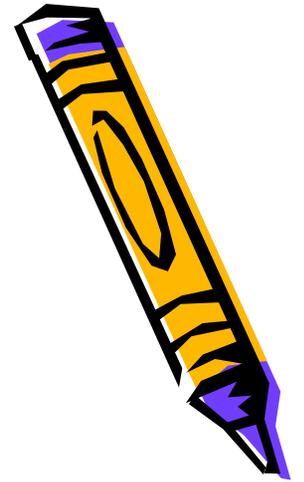


- In a series consisting of 3 or more elements, separate **all** the elements with commas. Use a comma before the conjunction that joins the last two elements.
- Prevents confusion.
- However, American newspapers and the British usually do not use that final comma!



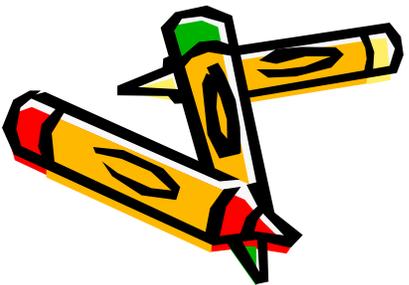
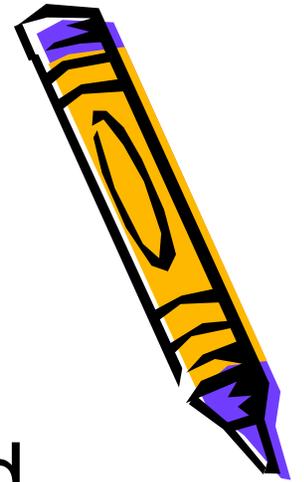
# Example

*The lecture series will cover essentials of grammar, how to write a manuscript, and problems common to non-native speakers of English.*



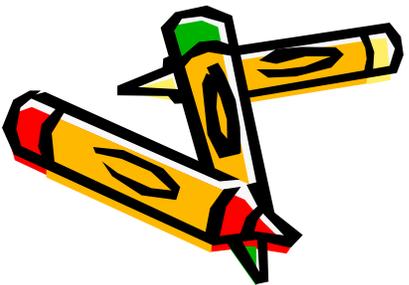
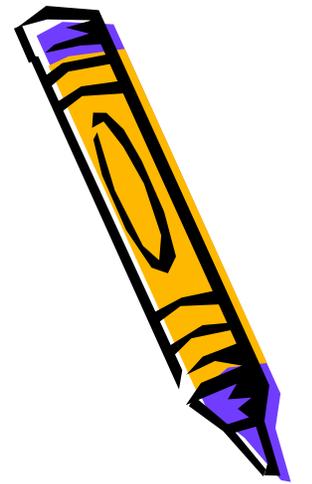
# Commas & Semi-colons

- If the items in the series are long and contain commas within them, then use a semi-colon to separate the items instead of commas.

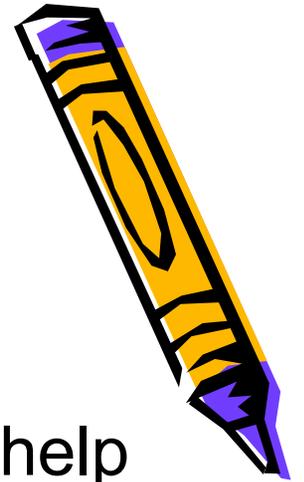


# Example

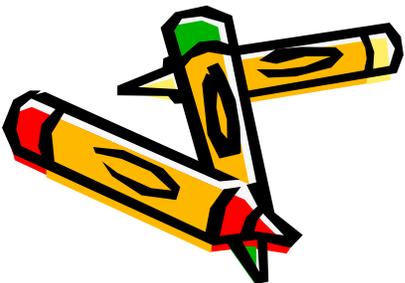
The cellular restitutive response of the liver to different injuries and to different hepatocarcinogenic regimens involves cells at different levels in the liver cell lineage. These cell types are: the 'mature' hepatocyte; the mature bile duct cell; the *in situ* tissue-determined stem cell, represented in the adult organ by cells in the terminal bile ductules (canals of Hering); and multipotent stem cells in the liver derived from circulating bone marrow stem cells.



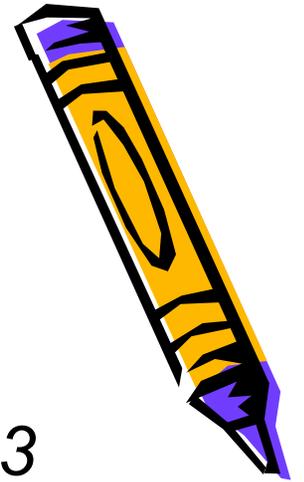
# Commas



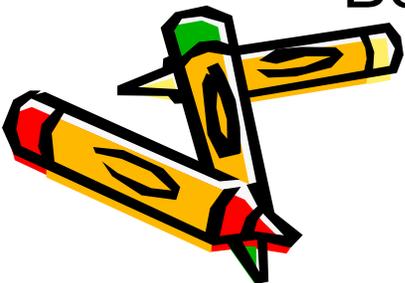
- I believe in using commas because they usually help to clarify and avoid confusion.
- However, I do find a lot of commas put where they do not belong.
  - *Just because you may pause when reading (perhaps because you need to take a breath), does not mean that a comma is needed.*
  - That comma does not belong there!!!
    - *Just because you may pause when reading* is the subject and should not be separated from the verb by a comma.



# Commas



- *We show high titers of anti-GM3, GD-3, and GT-3 antibodies, in the plasma exchange solution of these patients.*
  - Comma does not belong there!!
- Sometimes I find a comma incorrectly inserted after words such as
  - That
  - Whether
  - Because



Finally.....

## Why commas matter...

*A panda walks into a café. He orders a sandwich, eats it, then draws a gun and fires two shots into the air.*

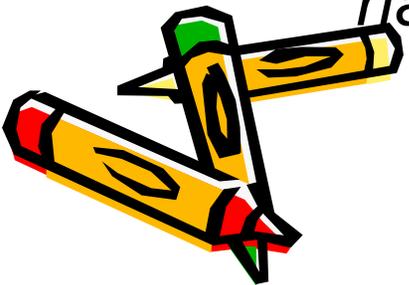
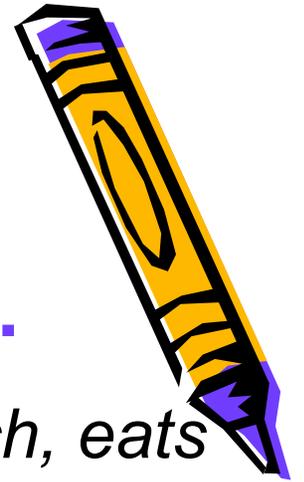
*“Why?” asks the confused waiter, as the panda walks through the door.*

*The panda tosses him a badly punctuated wildlife manual.*

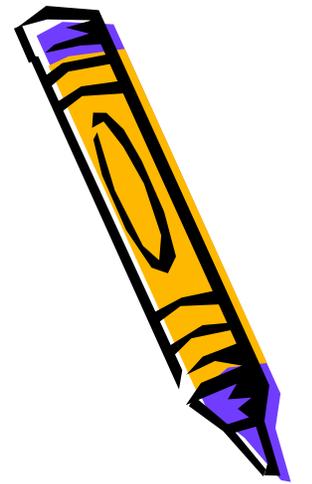
*“I’m a panda,” he says. “Look it up.”*

*The waiter looks up **panda** and finds the following:*

*“Panda. Large black-and-white bear-like mammal, native to China. Eats, shoots and leaves.”*



# Why commas matter...

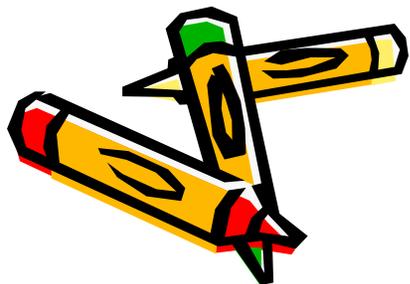
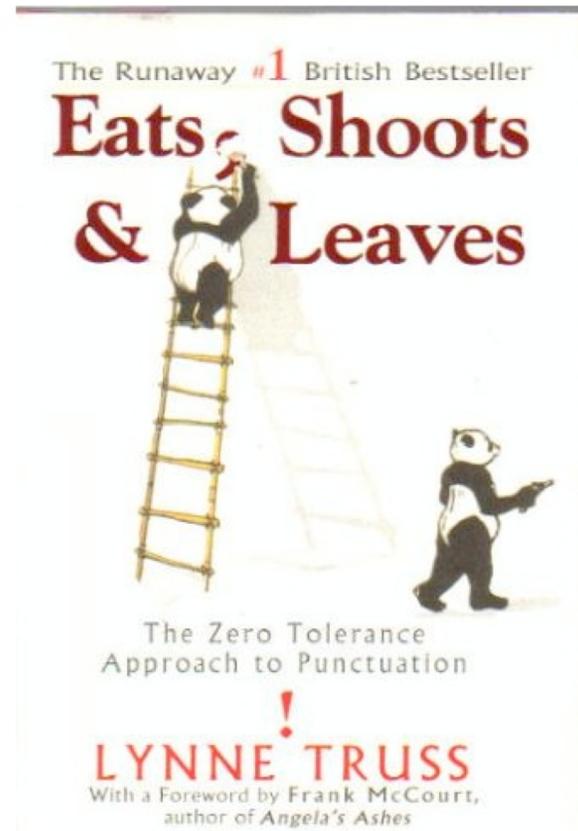


The correct definition of panda, of course, is:

*“Panda. Large black-and-white bear-like mammal, native to China. Eats shoots and leaves.”*

But the panda thought he needed to get a gun and shoot it!!!

Title of a British grammar book!



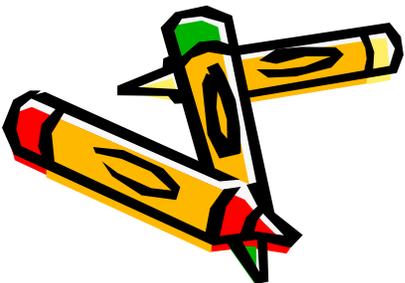
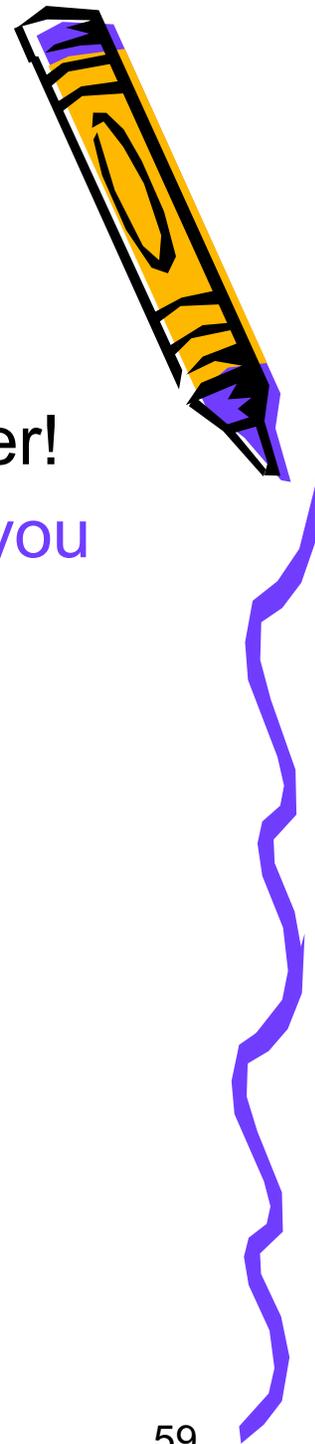
# Handout

Emails that editors and writers send to each other!  
Why you should proofread and think about what you write

These are (supposedly)

- real signs
- real newspaper headlines
- real notices in church bulletins

Enjoy and have a good laugh!



**Any Questions**  
**?**

