PLANNING

YEAR PLAN

GRID LAYOUT
In the Spring, as soon as you get the calendar for next year, and your teaching assignments, you should map out the entire year as a School Calendar. This should enable you to order needed supplies early enough so your district can purchase them and have them delivered before school starts in the Fall.

Create a simple Table grid with 5 columns and as many rows as there are weeks in your school year, minus 2 weeks for the Winter holidays and a week for the Spring Break (usually around 38 weeks total). Expand the rows vertically to about 17 mm each, until you have 14 rows per page (to print out), and use two pages per semester. [See PlanYearForm]. This is for a regular daily class schedule. Modify for block scheduling.

Enter the dates, in ink, from first day of school to the last, following the school calendar closely. Leave a blank row for breaks of one or more weeks. Next, place Xs in each day school is not in session, and draw a short horizontal line in middle of all days that are half-days (usually test days). For all known school test days that would affect your classes, put a big T in those boxes. If not indicated, check with your school counselor or principal. Find out as early as you can so you can plan ahead for them. Otherwise, they can really disrupt the flow of your unit. Make as many copies of these School Year Calendars as you have subjects to teach, plus an extra set or two in case you need to make a new calendar (assignment change, etc.).

BLOCKING OUT UNITS: For each subject:
1. List the standards for your course (do this on PowerPoint, if you can, for its great flexible outlining capabilities). Include CCSS, NGSS (including NOS in Append. H)
2. Choose criteria for deciding on unit topics, their sequence, and rough time allocation for each. If units not specified by district curriculum outline, use these criteria:
   - Pick a theme or two (nature of science, + evolution, change, energy, ...), and build sequence around those themes; Plan periodic overviews ("Big Picture") as you move through the units.
   - Your Experience (high school, college)
   - Standards sequence
   - Textbook sequence
   - Sequence used by colleague
   - Mix of the above
3. List major unit topics of your course(s), and place specific standards under each unit where they could be included. Be sure all standards are included somewhere.
4. Using pencil, fill in a blank School Calendar to block out your units, their topics and time allocations. [See Grid Layout instructions, above]
5. Try to begin and end units so as not to extend over long (3-4 day) weekends, or certainly 1-week or 2-week breaks. Try to end units in time for unit exam and end-of-semester or end-of-year finals.
6. After your initial blocking out, you may discover that you need to shorten a unit or two in order to cover material for all standards expected. Or, you may find that you have space to expand a unit or two, or maybe even add a unit or two. Make the adjustments.

What to do with desired topics that are not in the standards, or not in your text (but you feel are important):
1. Embed them into the units you do teach, wherever appropriate.
2. Tack it/them on to the end of your course, to do after the standards-assessment test.
3. Assign them for extra credit during the year (or for honor credit); students can complete a worksheet you've prepared for such assignments, generic or topic-specific, or can work on assignments at the end of the chapter, and/or can take a test upon completing the assignment.
UNIT PLANS

1. For the first unit, be sure to include logistics for:
   - Seating arrangement (student choice, or teacher assigned)
   - Taking roll
   - Learning names, getting acquainted
   - Rules and consequences, or contracts (to be taught, modeled and practiced)
   - Short (<26 Q) Pre-test for misconceptions in upcoming unit
   - Expectations
   - Overview of the course
   - Safety rules

2. Strongly recommended for first unit: Intro to the Nature of Science.

3. Try to allow 2-4 weeks for each unit.

4. Be sure to have the standards for the unit in front of you. These become your specific minimum objectives.

5. List the teaching resources you have that would be appropriate for this unit (text pages, activities/labs/demos, models, equipment, supplies, videos, useful websites, etc.)

6. Outline the sequence of topics within the unit. Seriously consider the following sequence of phases:
   - Engage, Explore, Explain, Elaborate, and Evaluate.

   **Engage**: Provide an engaging experience at the outset, something which intrigues, captures the imagination, enables discovery of new and interesting information, raises genuine questions that the unit will seek to resolve. Try doing dramatic demonstrations (often using illusions or discrepant events) or discovery lab experiences, which intrigue and raise questions leading into the unit topic. Bring out connections to previous units or courses or experiences.

   **Explore**: Provide lab experiences with the broad concepts of the unit. Provide opportunities for students to discover any related misconceptions they might have, to work with materials, concepts and few terms appropriate for the unit, developing useful skills and knowledge.

   **Explain**: Focus more deeply on selected, more challenging aspects of the topic, seeking explanations. This is the time when formal terms and definitions can be introduced, in context, to provide labels for the experiences and concepts introduced thus far. Never start a unit asking students to memorize terms and definitions. These are NOT the main focus of any unit, only as labels for concepts, processes, skills, or behavior already experienced.

   **Elaborate**: Provide new experiences which enable students to apply, transfer and extend the concepts and skills learned, thereby practicing the use of them. This can include additional lab exercises and small group and class discussions. This should deepen, refine, reinforce and clarify concepts and skills. Be sure to use Active Learning strategies - very effective.

   **Evaluate**: Although you should use formative assessment strategies throughout the unit, eventually you must formally determine the extent of each student's new knowledge. This can be by tests, graded reports (oral or written), demonstration of proper skills, graded observations, or other means. Remember, make every effort to measure true understanding of the material, not just their rote memory of terms and their meanings. Carefully constructed multiple choice questions may be the most perceptive way to do this. Oral quizzes, with abundant use of projected diagrams and images, with students recording their answers on paper, may be one of the best ways to enable students with varying language constraints or learning modes to give their best responses. Be sure that such evaluation provides accurate evidence of learning the desired educational objectives for the unit. Seriously consider using "Retrieval Practices."

7. Try to confine your Unit Plan outline to one page, if possible. Use pencil to rough out your unit plan.
   See the PlanUnitForm (3-week form)
LESSON PLANS

1. Prepare detailed lesson plans for your first week (at least).
2. Choreograph your first day and first week, very much as a coach might plan the first plays for an NFL football game. Those first days are critical for establishing rapport, setting the tone, and teaching your rules of procedure and cooperation. Try to seamlessly integrate the logistics elements into your first topic unit. For excellent ideas and strategies for doing this, consult The First Days of School, by Wong and Wong.

3. For each lesson (usually for one period, one day, to be repeated for each class), indicate:
   A. The lesson topic
   B. Your warm-up or starter activity (required of all students for ~5', while roll is taken, papers collected or checked in place.
   C. The desired outcome for the period this day; what students will know and do (perhaps one of the standards).
   D. Evidence of learning: how will you know if each student has achieved the desired outcomes?
   E. Materials needed
   F. Lesson opener: what will you do to engage or motivate all students, get their attention and hold it?
   G. Lesson core: what will you tell your students, show them (on board/screen, demo, etc.)
   H. Student activity: What will your students do? How will they proceed (logistics); Cleanup?
   I. Guidance: What will you do while students are engaged? What if any are not engaged?
      Do you have a relevant "sponge" activity to engage students in case everyone finishes early?
   K. Homework: (post at beginning of period, so students can routinely copy into notebooks)

4. Try to confine your Lesson Plan outline to one page.
5. For each step of the lesson, indicate the approximate time it should take, and try to follow that timing.
6. For each step, consider how you will meet the needs of special students in class, e.g. ELL and fast learners.
7. How and when will you do formative assessments?
8. If something doesn't work or go well (e.g., a demo, or student lab), what is your "Plan B"?
9. If the overhead or LCD projector bulb burns out, what is your "Plan B"? Do you have extra bulb?
10. Are your boards clean (white)? Do you have fresh markers of different colors?
11. Is your homework clearly posted?
12. Are your handouts ready to go?
13. Are your overhead transparencies, videos, CD, internet and/or PowerPoint materials ready to go?
14. Are all the materials your students will need for their lab in place, easy for them to get without crowding or wasting lots of time? (Usually best to not have them at student desks/tables, but rather in tote trays at convenient "Materials Stations" off to the sides, each convenient to 2-4 teams. This avoids distractions during instruction, and crowding while accessing materials.
15. Are all the materials for your demo ready to go?
16. Have you planned how you will group students into collaborative working teams (of 2-4)?
17. Do you know how you will deal with students talking or not paying attention during instruction?
18. How will you deal with students not participating with team, or wandering to other teams during activity?
19. What will you do if one or more teams are having technical problems, or not getting expected results?
20. Is your "warm-up" posted, or ready to go?
21. For each lesson, try to follow the "5 Es" sequence in miniature.
22. For suggestions for much of the above, the Wong and Wong book is an excellent resource.