23. scoured again
24. pertaining to looking
25. pertaining to (things) against rotting
26. pertaining to being alive
w. heresiarch
x. anabaptist
y. palimpsest
z. psoriasis

Lesson 6

NUMERALS

Many kinds of numbers exist. In Greek, the main groups of numbers are 'cardinal' numbers (1, 2, 3, 4, ...) and 'ordinal' numbers (first, second, third, ...). Other sorts of numbers include fractions, unities (e.g. 'threesome,' 'foursome'), and multiplicatives (e.g. 'twofold,' 'tenfold').

Chemistry uses Greek numbers extensively, both in names for compounds and in crystallography. In fact, many Greek numbers found nowhere else in English occur in chemical terms, but only a few are included in the exercises below.

While these are quite, different from a previous lesson's prefixes, they occur by far most frequently before roots.

<table>
<thead>
<tr>
<th>Greek Root</th>
<th>Meaning</th>
<th>Examples in English (please fill in at least two examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>arithm(e)-</td>
<td>number, to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>count</td>
<td></td>
</tr>
<tr>
<td>olig-</td>
<td>few</td>
<td></td>
</tr>
<tr>
<td>poly-</td>
<td>many</td>
<td></td>
</tr>
<tr>
<td>ochl-</td>
<td>crowd, mob</td>
<td></td>
</tr>
<tr>
<td>hemi-</td>
<td>half</td>
<td></td>
</tr>
<tr>
<td>hen-</td>
<td>one (among</td>
<td></td>
</tr>
<tr>
<td></td>
<td>others)</td>
<td></td>
</tr>
<tr>
<td>mon-</td>
<td>one only, alone</td>
<td></td>
</tr>
<tr>
<td>hapl-</td>
<td>single</td>
<td></td>
</tr>
<tr>
<td>prot-</td>
<td>first</td>
<td></td>
</tr>
<tr>
<td>proter-</td>
<td>former, &quot;firster&quot;</td>
<td>(an illogical comparative)</td>
</tr>
<tr>
<td>Prefix</td>
<td>Meaning</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>dy-</td>
<td>two</td>
<td></td>
</tr>
<tr>
<td>dipl-</td>
<td>double</td>
<td></td>
</tr>
<tr>
<td>di-</td>
<td>twice</td>
<td></td>
</tr>
<tr>
<td>dich-</td>
<td>in two</td>
<td></td>
</tr>
<tr>
<td>tri-</td>
<td>three</td>
<td></td>
</tr>
<tr>
<td>tetra-</td>
<td>four</td>
<td></td>
</tr>
<tr>
<td>penta-</td>
<td>five</td>
<td></td>
</tr>
<tr>
<td>hexa-</td>
<td>six</td>
<td></td>
</tr>
<tr>
<td>hepta-</td>
<td>seven</td>
<td></td>
</tr>
<tr>
<td>octo-/octa-</td>
<td>eight</td>
<td></td>
</tr>
<tr>
<td>ennea-</td>
<td>nine</td>
<td></td>
</tr>
<tr>
<td>deca-/deka-</td>
<td>ten</td>
<td></td>
</tr>
<tr>
<td>hendeca-</td>
<td>eleven</td>
<td></td>
</tr>
<tr>
<td>dodeca-</td>
<td>twelve</td>
<td></td>
</tr>
<tr>
<td>tris-kai-deka-</td>
<td>thirteen</td>
<td></td>
</tr>
<tr>
<td>icos-</td>
<td>twenty</td>
<td></td>
</tr>
<tr>
<td>hecaton-/hect-</td>
<td>hundred</td>
<td></td>
</tr>
<tr>
<td>kil-</td>
<td>thousand</td>
<td></td>
</tr>
<tr>
<td>myria-</td>
<td>ten thousand, countless</td>
<td></td>
</tr>
</tbody>
</table>

Exercises:

1. Why are the 'cardinal' and 'ordinal' numbers so called?

2. Hints for filling in the right-hand column above:
   - Have fun: try to find out-of-the-way derivatives.
   - Feel free to use words in the exercises below!
   - -ad, -arch(y), -gon, -hedr-, and -meter are often combined with numbers.

3. Look up and differentiate between the following:
   - monotheism
   - polytheism
   - henotheist
4. Why is there no Greek word for "zero"? Look up the etymologies of the following words:

- zero
- cipher
- algebra
- average
- algol
- algorithm

4. Why do we have "Arabic numerals"?
4. Does Arabic currently use "Arabic numerals"?

5. Identify the etymological elements of hecatomb, polyp, and ink. What is the phenomenon those words share called? Can you think of further examples of it?

6. Investigate the etymologies of the following:

<table>
<thead>
<tr>
<th>diatom</th>
<th>migraine</th>
<th>monolith</th>
</tr>
</thead>
<tbody>
<tr>
<td>pentathlon</td>
<td>decathlete</td>
<td>octagon</td>
</tr>
<tr>
<td>diphyerceral</td>
<td>protocol</td>
<td>triglyph</td>
</tr>
<tr>
<td>decade</td>
<td>heptahedron</td>
<td>myriapod</td>
</tr>
<tr>
<td>pentecost</td>
<td>tesseract</td>
<td>kilogram</td>
</tr>
<tr>
<td>hyphen</td>
<td>diatessaron</td>
<td>chiliad</td>
</tr>
<tr>
<td>Hendiadys</td>
<td>trapeze</td>
<td>deuterium</td>
</tr>
<tr>
<td>triskaidekaphobia</td>
<td>adelphic</td>
<td>hectare</td>
</tr>
<tr>
<td>hendriacontane</td>
<td>unnilpentium</td>
<td>icosasphere</td>
</tr>
</tbody>
</table>


| heneicosane | dean | deuteranopia |
| triakisoctahedron | epitrite | hapax |
| trichotomy | hemiola | dilemma |
| tetra | tetrapla | proterozoic |
| penteconter | trireme | protozoic |
| eicosapentaenoic | docosahexaenoic | alpha-linolenic |

7. What's in a name? Find the meaning of the following and say how it developed (these have nothing to do with numbers):

| 1. huguenot | 8. lesbian |
| 3. vulcanize | 10. lynch |
| 4. magnet | 11. sandwich |
| 5. maudlin | 12. gerrymander |
| 6. meander | 13. masochist |
| 7. solon | 14. draconian |

8. What's the difference between a perissodactylous animal and an artiodactylous animal?

Lesson 7

Colors and Metals

<table>
<thead>
<tr>
<th>Greek Root</th>
<th>English meaning</th>
<th>Examples (fill in a few examples for each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chrom-, chromat-</td>
<td>color</td>
<td></td>
</tr>
<tr>
<td>chro-</td>
<td>color (of skin)</td>
<td></td>
</tr>
<tr>
<td>chlor-</td>
<td>yellowish green</td>
<td></td>
</tr>
<tr>
<td>cirrh-</td>
<td>orange</td>
<td></td>
</tr>
<tr>
<td>cyan-</td>
<td>blue</td>
<td></td>
</tr>
<tr>
<td>erythr-</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td>glauc-</td>
<td>bluish green</td>
<td></td>
</tr>
<tr>
<td>iod-</td>
<td>violet</td>
<td></td>
</tr>
</tbody>
</table>