VSEPR Theory: Molecules with lone pairs

Gather together the following equipment: 6 small white Styrofoam balls, one large coloured ball, 6 toothpicks, and three pipe cleaners (to represent lone pairs). Complete the chart. Note: when building molecules use pipe cleaner bent into a horseshoe shape to represent a lone pair of electrons. If the molecule has resonance structures, draw these in the "Lewis structure" box (C), but build only one resonance structure for the "Build molecule" box (D). The bond angle for a tetrahedral molecule is 109.5°. Other bond angles can be calculated by correctly dividing the 360 degrees of a circle (look at your structure).

A. Molecule	B. # of valence electrons	C. Lewis structure (use rules for drawing Lewis structures)	D. Build molecule (see pg. 249 -252). Sketch. Show bond angles	E. # of peripheral atoms	F. # of lone pairs	G. Design-ation	H. Bond angles	I. Name (see pg. 249 - 252)
1. H_2O	1x2 + 6 = 8		109.5	2	2	AX_2E_2	109.5°	Bent or non-linear
2. H_3O^+								
3. ClF_3								
4. BrF_5								
5. ClO_4^-								

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6. $TeCl_4$								
7. ICl_4^-								
8. CO_2								
9. I_3^-								
10. OF_2								
11. SO_2								
12. CO_3^{2-}								