

Name \_\_\_\_\_  
Partner \_\_\_\_\_

Period \_\_\_\_\_  
Date \_\_\_\_\_

## Molecular Shapes

### Pre-Lab Questions:

1. Identify which color ball is typically used in your model set to represent each of the following elements. Several exceptions are noted in the procedure.

C	_____	O	_____	B	_____
H	_____	Cl/I/Br	_____	P	_____
N	_____	S	_____	Xe	_____

Build the following molecules using the molecular models. Show them to the instructor for approval and get a rubber stamp on the numbered line. A small white peg should be used to indicate a lone pair.

1) I<sub>2</sub> Iodine

A<sub>2</sub> Linear

1) \_\_\_\_\_

2) BCl<sub>3</sub> Boron trichloride

AB<sub>3</sub> Trigonal Planar

Use only the equatorial holes

2) \_\_\_\_\_

3) CH<sub>4</sub> methane

AB<sub>4</sub> Tetrahedral

3) \_\_\_\_\_

4) NH<sub>3</sub> Ammonia

AB<sub>3</sub>E Triangular Pyramidal

4) \_\_\_\_\_

5) H<sub>2</sub>O Water

AB<sub>2</sub>E<sub>2</sub> Angular or Bent

5) \_\_\_\_\_

6) PCl<sub>5</sub> Phosphorus pentachloride

AB<sub>5</sub> Triangular bi pyramidal

6) \_\_\_\_\_

7) SF<sub>4</sub> Sulfur tetrafluoride  
AB<sub>4</sub>E Sea Saw  
(S Brown 5 hole)

7) \_\_\_\_\_

8) ClF<sub>3</sub> Chlorine trifluoride  
AB<sub>3</sub>E<sub>2</sub> T-shaped  
(Cl Brown 5 hole)

8) \_\_\_\_\_

9) XeF<sub>2</sub> Xenon difluoride  
AB<sub>2</sub>E<sub>3</sub> Linear  
(Xe Brown 5 hole)

9) \_\_\_\_\_

10) SF<sub>6</sub> Sulfur hexafluoride  
AB<sub>6</sub> Octahedral  
(S Gray 6 hole)

10) \_\_\_\_\_

11) ClF<sub>5</sub> Chlorine pentafluoride  
AB<sub>5</sub>E Square pyramidal  
(Cl Gray 6 hole)

11) \_\_\_\_\_

12) XeF<sub>4</sub> Xenon tetrafluoride  
AB<sub>4</sub>E<sub>2</sub> Square planar  
(Xe Gray 6 hole)

12) \_\_\_\_\_

13) O<sub>2</sub> Oxygen gas  
(Double bond)

13) \_\_\_\_\_