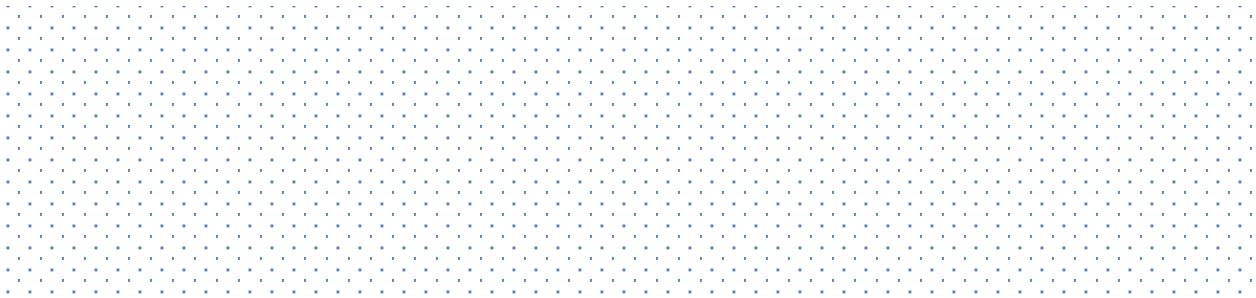
Student Worksheet

Modeling Silicates

1. Use the dots below to draw a single tetrahedron of silicate



What is the charge of the tetrahedron? _____

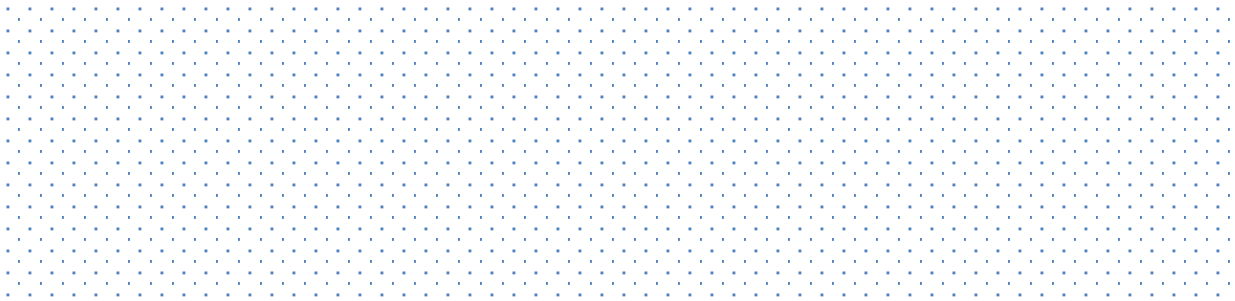
If Iron has a charge of +2, how many Fe^{+2} cations are needed to balance the charge?

_____

Write out the formula, including Iron: _____

What is the name of this mineral? _____

2. Use the dots below to draw a single chain silicate



What is the charge of each tetrahedron? _____

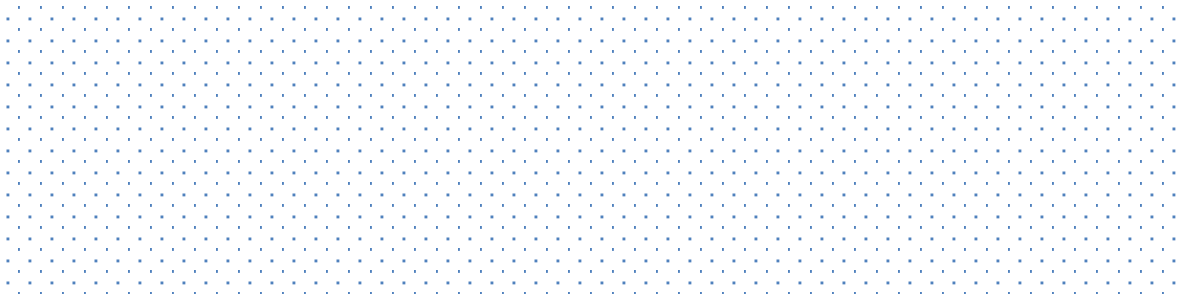
If Iron has a charge of +2, how many Fe^{+2} cations are needed to balance the charge?

_____

Write out the formula, including Iron: _____

What is the name of this mineral? _____

3. Use the dots below to draw a double chain silicate



What is the charge of each tetrahedron? _____

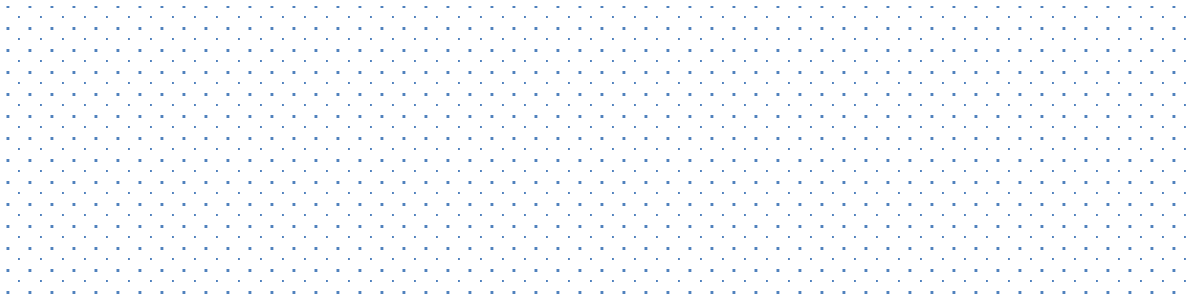
If Iron has a charge of +2, how many Fe^{+2} cations are needed to balance the charge?

_____

Write out the formula, including Iron: _____

What is the name of this mineral? _____

4. Use the dots below to draw a sheet silicate:



What is the charge of each tetrahedron? _____

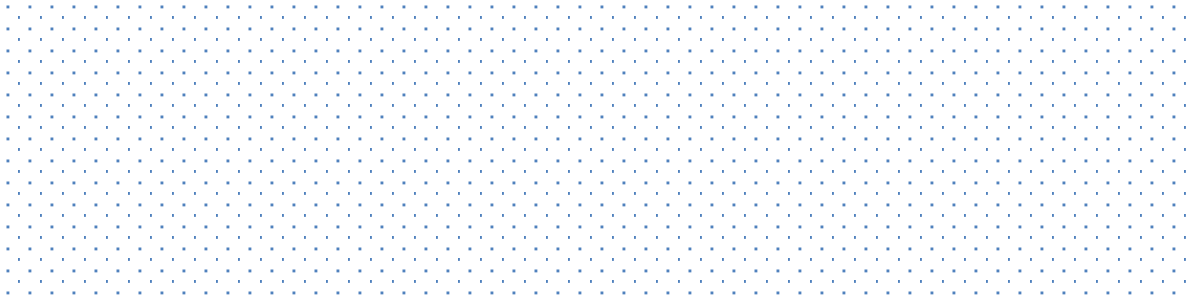
If Iron has a charge of +2, how many Fe^{+2} cations are needed to balance the charge?

_____

Write out the formula, including Iron: _____

What is the name of this mineral? _____

Challenge: Use the dots to draw a framework silicate (Hint: You can still build upward)



What is the charge of each tetrahedron? _____

If Iron has a charge of +2, how many Fe^{+2} cations are needed to balance the charge? _____

Write out the formula, including Iron: _____

What is the name of this mineral? _____