

Rules for Game Play

Go Fish for an Ion

Players—4 to 5 players are recommended.

Duration of Game—Game length can be set based on a time; 20–30 minutes is reasonable. Consider setting a timer and when the timer goes off, the game is called. The winner is the player with the most points at that point—no last minute matches can be laid down. Game length can also be set based on reaching a certain point level (such as 100 pts), although this may be more difficult in a school setting in which classes are a certain length of time.

Game Options

Game A—Writing Formulas

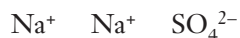
Game B—Writing Formulas and Naming Compounds

Getting Started—Choose a dealer and a game (A or B). Dealer deals out 7 cards to each player and places the remaining cards face down in the middle of the table, perhaps scattered around in the center. This is the “Fishing Pond.” Each player should have his or her own *Score Sheet* for either Game A or B which can be saved and used each time the game is played throughout the unit. There should be at least one *List of Ion Cards* sheet setting out for players to see what ions are available.

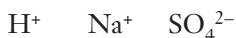
Matches—Game play begins clockwise from the dealer. Player 1 lays down (face up) any matches that he/she has at this time to make a compound (See section on *How to Make a Match*). The player writes on the score sheet the cation, the anion, and the number of each ion needed to make a correct neutral compound. Then the player writes the chemical formula (Game A), or both the formula and the name (Game B). Other players check Player 1’s match (Is it an appropriate match?) and the chemical name or formula. The teacher should be available to help check matches and formulas and to arbitrate disputes.

How to Make a Match—Each match must have the correct number of cations (+) and anions (–) to balance the charge on the neutral compound that is formed. For game simplification, the formula should consist of only one type of cation and one type of anion per match.

Acceptable Matches



Unacceptable Matches



Trading—Going clockwise from the dealer, after laying down all matches currently in the hand, Player 1 determines which card(s) is needed to make a match. To do this, Player 1 can examine the *List of Ion Cards* to see which ions are available in the deck and which are already laid down (face up) on the table. Player 1 can ask of another specific player “Do you have a Ca^{2+} (or calcium) ion?” (*Note*: Player 1 can ask any other player.)

If Player 2 has one or more of the requested ions, they ALL must be given to Player 1. Player 2 then replenishes his/her hand by drawing cards (fishing) from the “Fishing Pond”. Player 1 may now lay down a match, if possible, and Player 1’s turn is over.

If Player 2 does not have the requested ion, he tells Player 1 to “Go Fish” for another ion. Player 1 draws a card from the “Fishing Pond” and the turn is over. A match may not be laid down until next turn.

Points—Each card is worth a specified point value, which is found in the upper right corner of each card. To determine points for a correctly matched compound, the player adds up the points of all cards in the match and records the score on the score sheet. (*Note*: Point values are based on the frequency of card appearance in the deck.)

- *Full points* are awarded if the match and the formula (or name) are both correct.
- *Half points* are awarded if the match is correct, but the formula (or name) is wrong.
- *No points* are awarded if the match is wrong. (Even if a correct formula or name is written.)
- *Bonus points* are awarded if a player matches up all of his/her cards—a good incentive. (*Note*: This can be a fairly frequent occurrence). That player earns 10 bonus points, may draw 7 new cards from the “Fishing Pond”, and the turn is over. Play continues as usual. In Game B, bonus points are awarded if acids are named correctly. For example, if H_2SO_4 is named hydrogen sulfate, full points are given. If the compound is additionally named sulfuric acid, double points are earned.

Na^+ 1 Point

1 Point Na^+

Na^+ 1 Point

1 Point Na^+

Na^+ 1 Point

1 Point Na^+

Ca^{2+} 3 Points

3 Points Ca^{2+}

Ca^{2+} 3 Points

3 Points Ca^{2+}

Ca^{2+} 3 Points

3 Points Ca^{2+}

SO_4^{2-} 4 Points

4 Points SO_4^{2-}

SO_4^{2-} 4 Points

4 Points SO_4^{2-}

PO_4^{3-} 6 Points

6 Points PO_4^{3-}

PO_4^{3-} 6 Points

6 Points PO_4^{3-}

Cl^- 1 Point

1 Point Cl^-

Cl^- 1 Point

1 Point Cl^-

List of Ion Cards

Go Fish for an Ion

Cations			
<i>Symbol</i>	<i>Name</i>	<i>Points</i>	<i># of Cards</i>
H ⁺	Hydrogen	1	6
K ⁺	Potassium	1	6
Na ⁺	Sodium	1	6
NH ₄ ⁺	Ammonium	2	4
Cu ⁺	Cuprous	2	2
Fe ²⁺	Ferrous	2	2
Ca ²⁺	Calcium	3	4
Cu ²⁺	Cupric	3	2
Fe ³⁺	Ferric	4	2
Al ³⁺	Aluminum	6	2

Anions			
<i>Symbol</i>	<i>Name</i>	<i>Points</i>	<i># of Cards</i>
Cl ⁻	Chloride	1	2
OH ⁻	Hydroxide	2	2
NO ₃ ⁻	Nitrate	2	3
NO ₂ ⁻	Nitrite	2	3
O ²⁻	Oxide	3	3
S ²⁻	Sulfide	3	3
CO ₃ ²⁻	Carbonate	4	3
SO ₄ ²⁻	Sulfate	4	3
SO ₃ ²⁻	Sulfite	4	3
PO ₄ ³⁻	Phosphate	6	3