

RULEBOOK

ION

A COMPOUND BUILDING GAME





A Compound Building Game

For 2 to 7 players

GAME SUMMARY

Ion is a fast-paced card game in which players compete to build compounds using positively and negatively charged ions.

At the beginning of the round, each player is dealt a hand of Element Cards, from which they'll pick just 1 to play. They'll then pass the remaining cards to the player on their left. Players will repeat this "pick and pass" process, using these Element Cards to form neutrally-charged compounds, until they have 2 cards left, marking the end of the round.

Points are scored for successful compounds, Noble Gases, and achieving Goal Cards. After 3 rounds, the player with the most points wins!



COMPONENTS

81 STANDARD ELEMENT CARDS



9 COMPOUND GOAL CARDS



21 ACTION TILES



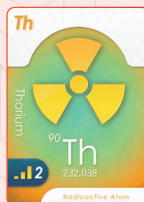
1 SCORE PAD

ION	
Round 1	
Round 2	
Round 3	
Action Tiles	
Radioactive	
Advanced Game	
Final Score	

Radioactive Cards (Advanced Game)	
Unused Action Tiles	
2 Points Each	

POINTS	Radioactive Cards (Advanced Game)	POINTS
Face-Up	4	1st
Rotated	2	2nd
Face-Down	0	3rd
		Least

14 RADIOACTIVE ELEMENT CARDS



The Radioactive Element Cards are only used in the Advanced Game (p. 13). Set these aside for a Standard Game.

STANDARD GAME SETUP

Step 1: Separate the **Compound Goal Cards** from the **Element Cards**.



Return the **Radioactive Cards** to the box unless playing the Advanced Game (see p. 13).

Some additional Cards are removed for the Beginner Game (p. 16).

Step 2: Shuffle the Compound Goal Cards. Then, randomly place **3 face-up Goal Cards** in the center of the table. These are the active Goals for this round.



Step 3: Shuffle the **Element Cards** and deal **10** to each player. These make up a player's hand. Place the remaining Element Cards face-down as a deck to the side of the play area.



Step 4: Flip 4 **Element Cards** face up in the center of the table. There should be no duplicate cards. Replace any duplicates with new Element Cards until all 4 cards are unique.



Step 5: Give each player a set of 3 different **Action Tiles**. Each player should place their Action Tiles face up in front of them. Place any unused Action Tiles back into the box.



HOW TO PLAY ION

In each round of *Ion*, players are dealt 10 Element Cards to choose from. Players will simultaneously choose 1 of these cards to keep, then pass the remaining cards to the player on their left. Once all players have made their selection, players reveal and play their choices in front of them. The players then take their new hands, and repeat this “**pick and pass**” process until each player has only 2 cards remaining in their hand. These remaining Element Cards are placed in a shared Discard Pile.

PLAYING ELEMENT CARDS (PP. 6-7)

As players reveal and play their Element Cards, they will either be played alone as **unbonded cards** or will be combined with other cards to form **bonds** in **neutrally-charged compounds**. Planning how to form these compounds is the key to *Ion*.

END OF THE ROUND (PP. 11-12)

Players will continue to pick and pass the hands, playing Element Cards and forming compounds. Note that all the hands should always be the same size. When only 2 cards remain in each hand, place these in a shared Discard Pile: the round is over.

Players will then count their points and record them on the Score Pad. If this is the 1st or 2nd round, collect and reshuffle all the cards, then set up for the next round in the same way (as in steps 2-4 of setup). After 3 rounds, the game ends.

BONDING ELEMENT CARDS

The goal of **ion** is to create neutrally-charged compounds. Some Element Cards have a positive charge (indicated by a "+" after their symbol) and some others have a negative charge.



When a card with a positive charge is bonded to a card with a negative charge of the same strength, it forms a neutrally-charged compound as the positive and negative charges balance out.

When taking a new card, you may play it **unbonded** (by itself, "waiting" for a card to bond with), or you may use the card to form a **new bond** using your other previously unbonded Element Cards. To form a bond, simply place the new charged card together with the card or cards that form a valid chemical bond (see below).

Note that playing an Element Card is your chance to form bonds: you cannot initially create a bond and then break it later, or initially decide not to form a possible bond and subsequently create one.

BONDED



UNBONDED



Bonds are formed between Element Cards with opposite charges that balance out. For example, after picking a Chloride (Cl^- , indicating a charge of -1), you may bond it to an unbonded Hydrogen (charge of +1). The positive and negative charges are equal, so the compound is neutrally-charged and will score points at the end of the round.



Any charges greater than 1 must still balance to 0, using multiple cards if needed. If there are multiple positive or negative ions in the same compound, they must be identical. For example, Magnesium (Mg^{2+}) has a charge of +2. To use it in a compound, you could bond it with 2 of **the same** -1 Element Card. Since a bond can only be formed with all Element Cards present together, you would only create the bond as you play the 3rd card.



See additional bonding examples on p. 8.



Noble Gas Cards are already neutrally-charged, and do not bond. Leave them among your unbonded cards. You will score points for the sets of different types you collect.

SAMPLE BONDS



✗ INCORRECT



Cards of the same charge must be identical.

✗ INCORRECT



Charges must cancel out to 0.

✗ INCORRECT



Noble Gases are neutral and don't form bonds.

TRANSITION METAL CARDS

Transition Metal Cards are played and bonded the same way as all the other cards with a charge, except that each Transition Metal Card has 2 different charges listed. Simply rotate the card to see the other charge. When forming a bond, rotate the card so the charge of your choosing is in the upper left (and points for that configuration in the bottom left).

While unbonded, a player may rotate the orientation of their Transition Metal Card to change the charge. Once a player has formed a compound with a transition metal, its charge is fixed for the round.



POLYATOMIC ION CARDS

The green Polyatomic Ion Cards are played and bonded the same way as all other cards with a charge. Creating a neutrally-charged compound with these cards allows a player to flip 1 of their used face-down Action Tiles back to its face-up side at the end of the round, to be used again later.



Note: Some Polyatomic Ions have subscripted numbers in the chemical formula ("4", in the example). These have no effect on gameplay (the charge shown is -2).

ACTION TILES

At any point during the round, a player may choose to use any of their Action Tiles by flipping them face-down. Action Tiles may be used only once per game, unless refreshed by bonding a Polyatomic Ion Card (see **Polyatomic Ion Cards** for more details).

Each Action Tile has a different ability that lets you gain an extra Card:



Play Two – Flip this Tile to choose 2 Element Cards to play from your hand, instead of 1. Before passing to the next player, add 1 new Element Card from the top of the Element Deck back into that hand.



Play From Center – Flip this Tile to immediately take and play 1 Element Card from the face-up cards in the center of the table. This is in addition to the Element Cards played from your hand.

Important: Element Cards in the center are NOT replaced with new cards until resetting for a new round.



RXN (Reaction)– Flipping the Reaction tile allows you to freely rearrange any or all of your Element Cards throughout the round, re-bonding them to form new compounds however you choose (Transition Metals may be used in either orientation). This provides extra flexibility in forming bonds.

Additionally, at the end of round you may take any 1 Element Card from the center of the table or Discard Pile to use in forming your compounds. If multiple players flip RXN Tiles in the same round, then the effects are resolved in the order they were flipped.

Action Tile Scoring: At the **end of the game**, you will score 2 points for each of your Action Tiles that is still face up.

END OF ROUND SCORING

At the end of the round, players score points for their bonded compounds and Noble Gas cards. Any unbonded *charged* Cards score zero points.

(If playing with the Advanced Game, see p. 13 for modifications to scoring).

1. SCORING NEUTRALLY-CHARGED COMPOUNDS

A neutral compound consists of bonded cards which have an equal number of positive and negative charges (see pp. 6-7).

To count the points for a neutral compound, simply add the point values (as listed in the bottom left of each card) within that neutral compound.

For example, a Hydrogen bonded with a Chloride will score a player 7 points.



If a player has completed a compound using a Polyatomic Ion showing the Action Tile icon, they may flip 1 of their face-down Action Tiles back to its face-up side (during scoring), to be used again later during a future round.

2. SCORING NOBLE GASES

Noble Gases do not bond. Instead, they score points in sets with other different Noble Gas Cards. Any single Noble Gas Card scores **2 points**, 2 different Noble Gas Cards score **5 points**, and all 3 different Noble Gas Cards score **9 points**. You may score multiple sets.



= 2
POINTS



= 9
POINTS

3. SCORING COMPOUND GOAL CARDS

A player scores bonus points for any compound(s) they've built that are listed on any of the Compound Goal Cards for the round.

Compounds are listed as formulas that show which ions are used. If more than 1 of an ion is used in that compound, a subscripted number after the ion will show how many. For example: $\text{Mg}(\text{OH})_2$ is made of 1 Mg^{2+} ion and 2 OH^- ions.

A player earns the top number of points for building **1** compound listed on that Goal Card, or the bottom number of points for building **both** compounds listed.

Note: to receive bonus points from the Neutralization Reaction Goal Card, a player must build 2 compounds - one compound containing Hydrogen, and another containing Hydroxide. Bonding Hydrogen and Hydroxide (water) does not count toward this Goal Card's bonus points.

ONE
COMPOUND → 3
BOTH
COMPOUNDS → 7



END OF GAME SCORING

After playing and scoring 3 rounds, players receive 2 points for each unused Action Tile.

The player with the most total points wins! If players are tied, they share the victory.

ADVANCED GAME

Ideal for gamers or players already familiar with Ion, and only recommended with 4+ players.

In **Step 1** of Standard Game Setup, also shuffle in the 14 Radioactive Cards.

RADIOACTIVE ELEMENT CARDS

Radioactive Cards score points both at the end of the round and again at the end of the game. Radioactive Cards gained each round will stay in play over the game.



END OF ROUND SCORING

Radioactive Cards do not have charges and do not bond. When revealed, check how many total Radioactive Cards are revealed on that turn. This will affect how they score.

- If 1 Radioactive Card is revealed on that turn, leave that card face-up.
- If 2 Radioactive Cards are revealed on that turn, rotate them 90 degrees.
- If 3 or more Radioactive Cards are revealed on that turn, flip those cards face-down.



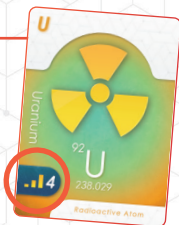
At the end of the round, score these as follows:

Each unrotated FACE-UP CARD	+ 4 points
Each Card Rotated 90 DEGREES	+ 2 points
Each FACE-DOWN CARD	+ 0 points

After scoring, set the Radioactive Cards to the side, face up. They are ignored in future turns and rounds, but will be counted again for end of game scoring. **Do NOT re-shuffle Radioactive Cards back into the Element Deck.**

END OF GAME SCORING

Radioactive Cards a player places each round will accumulate in their player area throughout the game. Each Radioactive Card has a number of Radioactive Decay (from 2 to 5) noted on the card. At the end of the game, each player will add up their total Radioactive Decay, and compare it to all other players, scoring a number of points according to the chart below.



MOST DECAY	+ 15 points
SECOND-MOST DECAY	+ 9 points
THIRD-MOST DECAY	+ 3 points
LEAST DECAY	-5 points

If 2 or more players tie for a Radioactive Decay position, they add the points together for the positions they held and the position below it. Then, they will divide the points equally among those players rounding up (receiving only whole numbers of points).

For Example: In a 4 player game, Ariel had 10 Radioactive Decay, Blake and Cara each had 7 Radioactive Decay, and Dan only had 2 Radioactive Decay.

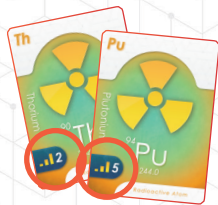
ARIEL: 10 DECAY



**+15
POINTS**

Ariel had the most, so she receives 15 points. Blake and Cara tied for second most, so they add together the points for the second (9) and third (3) positions, then divide those points equally (rounding up), receiving 6 points each.

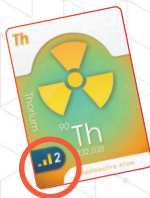
BLAKE & CARA: 7 DECAY EACH



**9 PTS + 3 PTS
DIVIDE BY 2 & ROUND UP
+6 POINTS EACH**

Since Dan had the least Radioactive Decay, he loses 5 points.

DAN: 2 DECAY



**-5
POINTS**

BEGINNER GAME

*Ideal for younger gamers
and the science classroom.*

The Beginner Game is a simpler version of Ion. To play the Basic Game, remove the green-bordered **Polyatomic Ion** and metallic-bordered **Transition Metal Cards** during setup, and do not give players a set of **Action Tiles**.

When preparing cards, do not deal cards to the center of the table (skip Setup **Step 4**). Players are dealt only 9 cards, instead of 10.

CREDITS

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