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## It's All in the Cards



## Strategies toward achievement of:

Understanding Absolute Value and Operations with Integers
GSE Standards Addressed:
MGSE6.NS. 5
MGSE6.NS.6a
MGSE6.NS. 7
MGSE6.NS.7c
MGSE7.NS. 1

## Game for Operations with Integers and Absolute Value

Supplies needed:

- Game Sheet for each player (game sheets provided)
- 1 deck of cards per group of students (3 to 4 students per group). It doesn't matter if the decks are missing cards or mixed up. Deck of cards does not have to be a complete deck.


## Determining the winners:

- Object of each HAND - Getting each hand closest to Zero!
- Game can be extended by having students determine the overall winner of the class by determining the absolute value of the score being closest to zero.


## How to Play:

- Red cards are negative, black cards are positive Jacks $=11$, Queens $=12$, Kings $=13$, Aces 1 or 14 (depending on what you need)
The suit will determine if the Jacks, Queens, or Kings are negative. (Red for negative, Black for positive)
- Deal each player 2 cards. One card facing up and one card facing down.
- Each player adds up their cards to see if they are close to zero. If needed, players can ask to get another card. They can get up to FOUR cards but must use all cards dealt for that hand in their final total. They can also HOLD at two cards.
- Students must look at their two cards and determine the value by adding/subtracting. Students can ask for up to 4 cards to reach an overall sum of closest to zero.
- Once all players are finished asking for cards in that round, all cards are turned over. Starting with the face-down card value first, each player writes all their cards down and adds up their total in the total box in the last column of the table.
- The player with the closest value to ZERO wins the hand and gets to be the dealer!


## Incorporating Absolute Value (Student game sheet provided)

- Have each player find the absolute value of their total in the absolute value column.
- When time is up, each player adds up the absolute value column. The person closest to ZERO wins the game!


## Different Variations:

- Have students choose the operation (addition or subtraction) that they would like to use for each round.
- Assign students rounds 1-5 addition and rounds 5-10 subtraction.
- Use a +, - dice and have the dealer roll it each round to see if everyone at the table should do addition or subtraction of negative numbers (to make it more difficult).
- Students can also use this to practice multiplication and division with integers.




## Student Game Card Absolute Value

This is played like Blackjack.
BLACK cards are POSITIVE numbers.
RED cards are NEGATIVE numbers.
Jacks $=11$, Queens $=12$, Kings $=13$, Aces 1 or 14 (depending on what you need)
The suit will determine if the Jacks, Queens, or Kings are negative. (Red for negative, black for positive)

## GOAL: Get as close to ZERO as possible

## How to Play:

1. Each player is dealt two cards, one face up and one face down to start each hand.
2. All players at your table will see the face-up cards, but each player only gets to see their own face-down card.
3. Each player will start counting the total value using the face-down card first and then add the face-up card(s).
4. Each player may ask for more cards, one card at a time.
5. Each player may only have up to FOUR cards total (three face up, one face down) for that hand.
6. Each player must use ALL (count the total value) of the cards dealt to them for that hand!

Winning The Round: The person with the TOTAL closest to zero wins that round.
The winner of each round gets to be the dealer for the next hand!

## Winning The Game:

1. Take the absolute value of your TOTAL column each hand.
2. At the end of the game, add up the numbers in the absolute value column.
3. The person closest to ZERO of the Absolute Value column wins the game!

| Round | Cards (write your card's values here and the operations you used) | Total | Abs Value |
| :---: | :--- | :---: | :---: |
| Ex. | Face down Red 9 + Face Up Black 8 (-9 + 8 = -1) | -1 | 1 |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| Add up the numbers in the Absolute Value column! <br> The sum closest to ZERO wins the overall game!! |  |  |  |

## Student Game Card Operations with Integers

## This is played like Blackjack.

BLACK cards are POSITIVE numbers.
RED cards are NEGATIVE numbers.
Jacks = 11, Queens = 12, Kings = 13, Aces 1 or 14 (depending on what you need)
The suit will determine if the Jacks, Queens, or Kings are negative. (Red for negative, black for positive)

## GOAL: Get as close to ZERO as possible

## How to Play:

1. Each player is dealt two cards, one face up and one face down to start each hand.
2. All players at your table will see the face-up cards, but each player only gets to see their own face-down card.
3. Each player will start counting the total value using the face-down card first and then add the face-up card(s).
4. Each player may ask for more cards, one card at a time.
5. Each player may only have up to FOUR cards total (three face up, one face down) for that hand.
6. Each player must use ALL (count the total value) of the cards dealt to them for that hand!

Winning The Round: The person with the TOTAL VALUE closest to zero wins that round.
The winner of each round gets to be the dealer for the next hand!

| Round | Cards (write your card's values here and the operations you used) | Total |
| :---: | :--- | :--- |
| Ex. | Face down Red 9 + Face Up Black 8 $(-9+8=-1)$ | -1 |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |
| 12 |  |  |
| The player with the TOTAL VALUE closest to zero wins that round. |  |  |

## References

