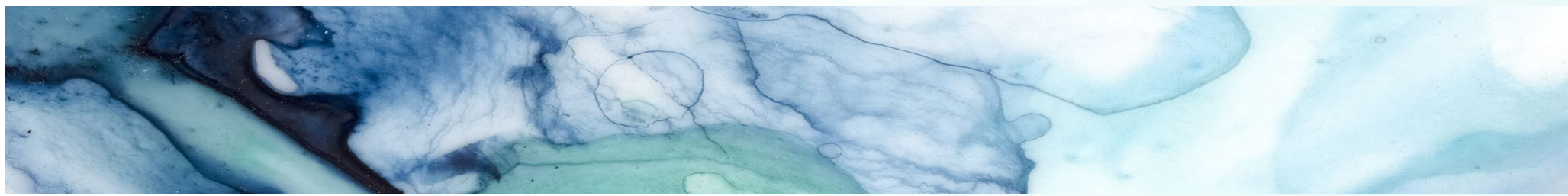


# Mastering Multiplication and Division Facts: New Ways of Learning the Facts with Card Games and the Short Multiplication Table



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# Introduction



- We know more now than we did 20 years ago about how children learn and how to teach more effectively. Yet, we have failed to modify our methods. **We need to make a change.**
- Worksheets are not the answer. We have tried various forms; with paper, computers, and apps.
- Worksheets are an exercise in frustration for all involved: students, teacher, and parents.

# Emotions and Learning



- The emotions we experience when we learn new information are recorded in our memories.
- Information stored with negative feelings tends to be dismissed or forgotten.
- If we associate math with feelings of failure and anxiety, learning will be difficult.
- This limits our children's future careers.
- This limits the future of our world!

# Emotions and Learning



- If there is an enjoyable time learning, then positive emotions will replace past negative emotions.
- When children recall feelings of discovery and success, they will want to continue learning and will apply that knowledge to other areas.
- Therefore, it is important that learning be a pleasant experience.
- Card games combine practice with pleasure.

# Games



- Most people have fond memories of playing games with family and friends.
- Games bring positive emotions into the learning arena. Now we have an environment ripe for success.
- The more games are played, the more students learn, and the more confident they become.

# Games

- A good math game includes a method to find the facts while playing, rather than relying on prior knowledge to play.
- Games are so much more than a reward; games are essential for practice time so that fact mastery occurs.
- Helps the children learn social skills: taking turns, winning and losing graciously, and helping others.
- The children will be equals without concerns for equity, gender, race, or disability.



# Games



- Games do away with anxiety-producing flash cards and timed tests.
- Teachers and parents become partners in the learning process.
- Games provide interesting repetition needed for automatic responses in a social setting.
- More importantly, games provide an application for the new information.

# Short Multiplication Table

1									
2	4								
3	6	9							
4	8	12	16						
5	10	15	20	25					
6	12	18	24	30	36				
7	14	21	28	35	42	49			
8	16	24	32	40	48	56	64		
9	18	27	36	45	54	63	72	81	
10	20	30	40	50	60	70	80	90	100

$$4 \times 8 = 32$$



# Ring Around the Product

1									
2	4								
3	6	9							
4	8	12	16						
5	10	15	20	25					
6	12	18	24	30	36				
7	14	21	28	35	42	49			
8	16	24	32	40	48	56	64		
9	18	27	36	45	54	63	72	81	
10	20	30	40	50	60	70	80	90	100

6	5	3	4	1
8	81	21	42	7
5	50	48	9	8
6	1	9	8	3

# Short Multiplication Table

1										
2	4									
3	6	9								
4	8	12	16							
5	10	15	20	25						
6	12	18	24	30	36					
7	14	21	28	35	42	49				
8	16	24	32	40	48	56	64			
9	18	27	36	45	54	63	72	81		
10	20	30	40	50	60	70	80	90	100	

$32 \div 5$  is 6 r2

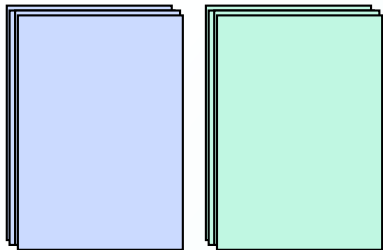
# Division War

1									
2	4								
3	6	9							
4	8	12	16						
5	10	15	20	25					
6	12	18	24	30	36				
7	14	21	28	35	42	49			
8	16	24	32	40	48	56	64		
9	18	27	36	45	54	63	72	81	
10	20	30	40	50	60	70	80	90	100

25

3

$$25 \div 3 \text{ is } 6 \text{ r}1$$

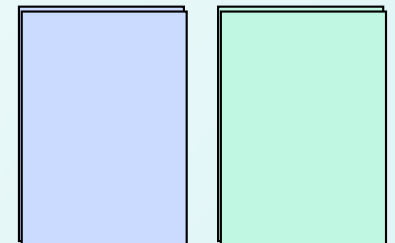


1									
2	4								
3	6	9							
4	8	12	16						
5	10	15	20	25					
6	12	18	24	30	36				
7	14	21	28	35	42	49			
8	16	24	32	40	48	56	64		
9	18	27	36	45	54	63	72	81	
10	20	30	40	50	60	70	80	90	100

36

8

$$36 \div 8 \text{ is } 4 \text{ r}4$$



# Division Remainder War

1										
2	4									
3	6	9								
4	8	12	16							
5	10	15	20	25						
6	12	18	24	30	36					
7	14	21	28	35	42	49				
8	16	24	32	40	48	56	64			
9	18	27	36	45	54	63	72	81		
10	20	30	40	50	60	70	80	90	100	

28

5

$$28 \div 5 \text{ is } 5 \text{ r}3$$

1										
2	4									
3	6	9								
4	8	12	16							
5	10	15	20	25						
6	12	18	24	30	36					
7	14	21	28	35	42	49				
8	16	24	32	40	48	56	64			
9	18	27	36	45	54	63	72	81		
10	20	30	40	50	60	70	80	90	100	

45

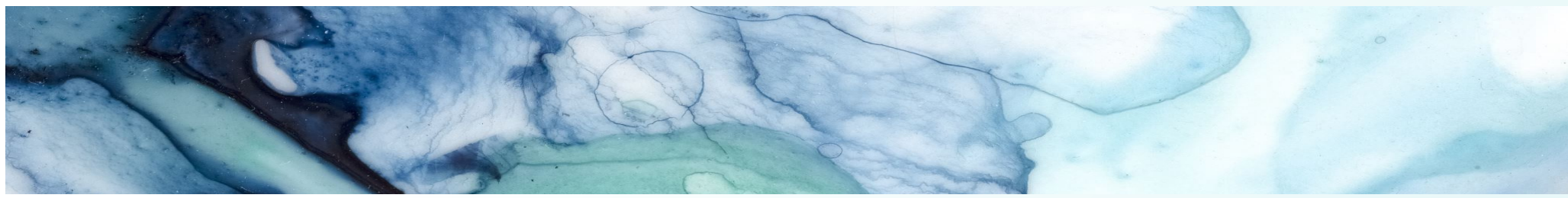
7

$$45 \div 7 \text{ is } 6 \text{ r}3$$

# In Conclusion

- The Short Multiplication table is a resource to rely upon until the facts are mastered.
- Math card games provide repetition needed for automatic responses in a social setting.
- More importantly, games provide an application for the new information.
- Maya Angelou says “Do the best you can until you know better. Then when you know better, do better.” **We know better now. Let’s do this!**

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