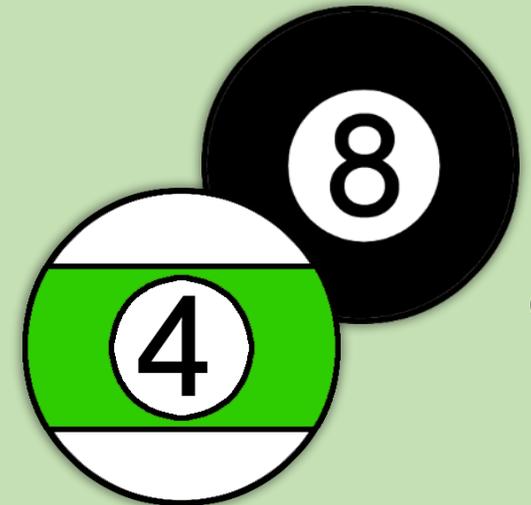


# Pythagorean Theorem

## Pool Table Activity



12 task cards!

Lots of fun!

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THANK YOU!!!



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Math in Demand

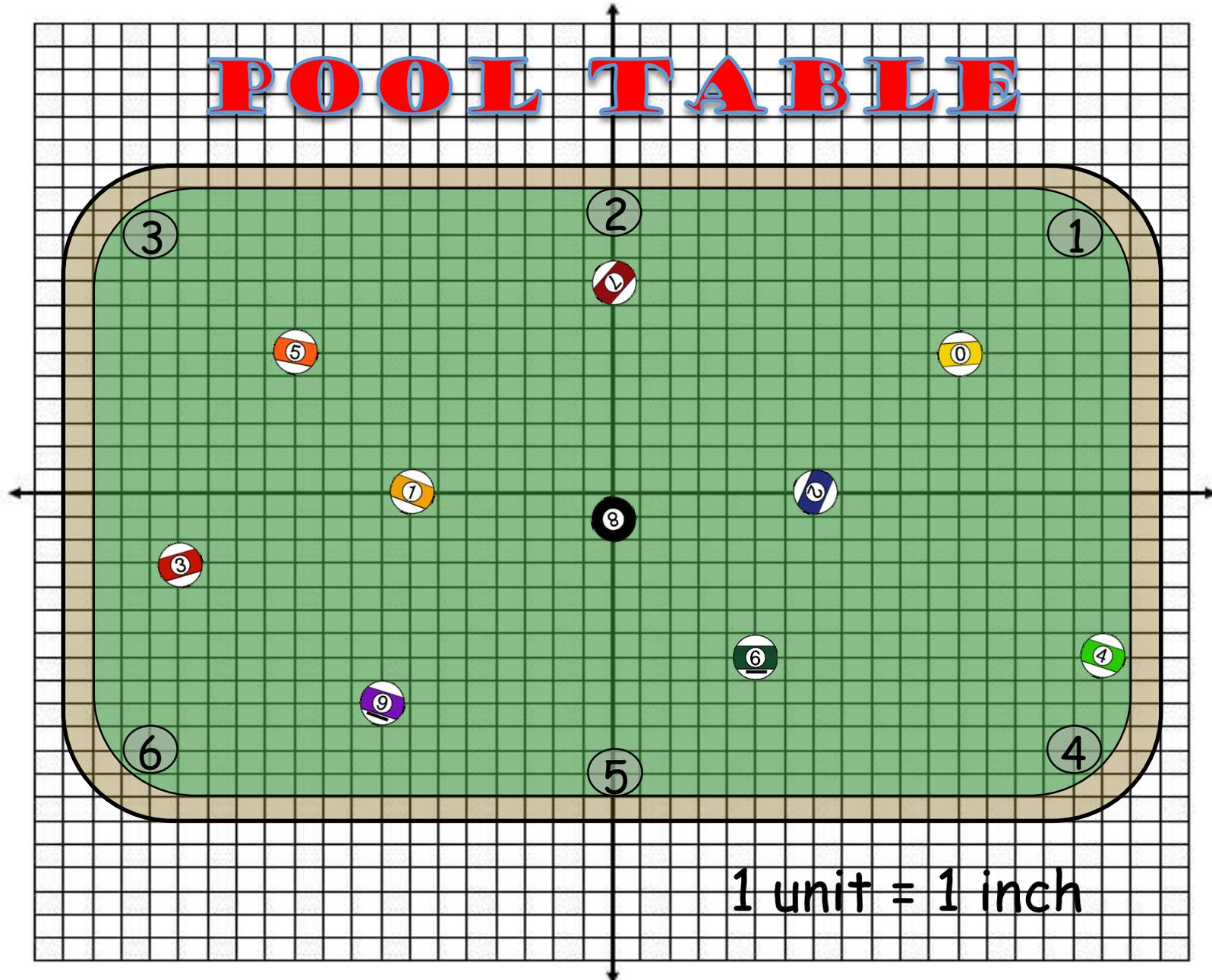
# Teacher Notes

- This activity can be laminated and used year after year!

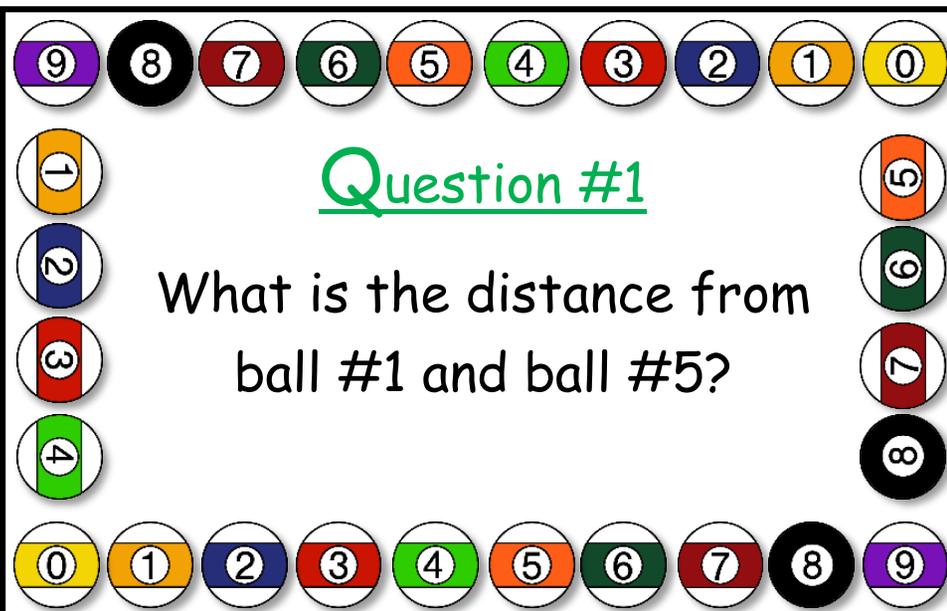


- This activity works great in groups of 3-4.
- The task cards get harder in order (#1 easiest to hardest).
- You can print page 8 and 9 back to back.
- If you have any questions or concerns, please email me at [mathindemand@hotmail.com](mailto:mathindemand@hotmail.com).

# POOL TABLE



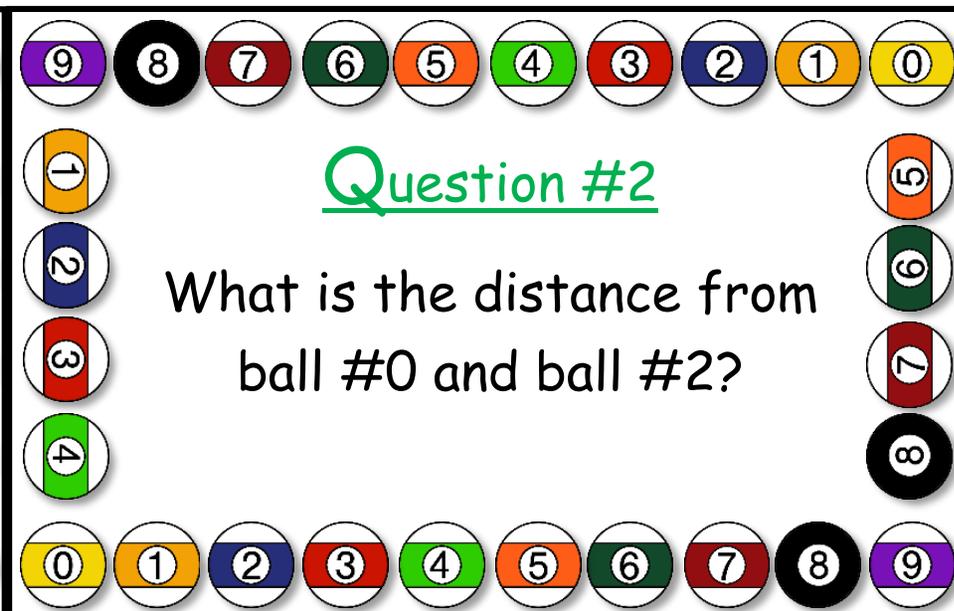
1 unit = 1 inch



A horizontal number line with 10 numbered circles from 0 to 9. The circles are colored as follows: 0 (yellow), 1 (orange), 2 (blue), 3 (red), 4 (green), 5 (orange), 6 (green), 7 (red), 8 (black), 9 (purple). Ball #1 is highlighted in orange and ball #5 is highlighted in orange.

Question #1

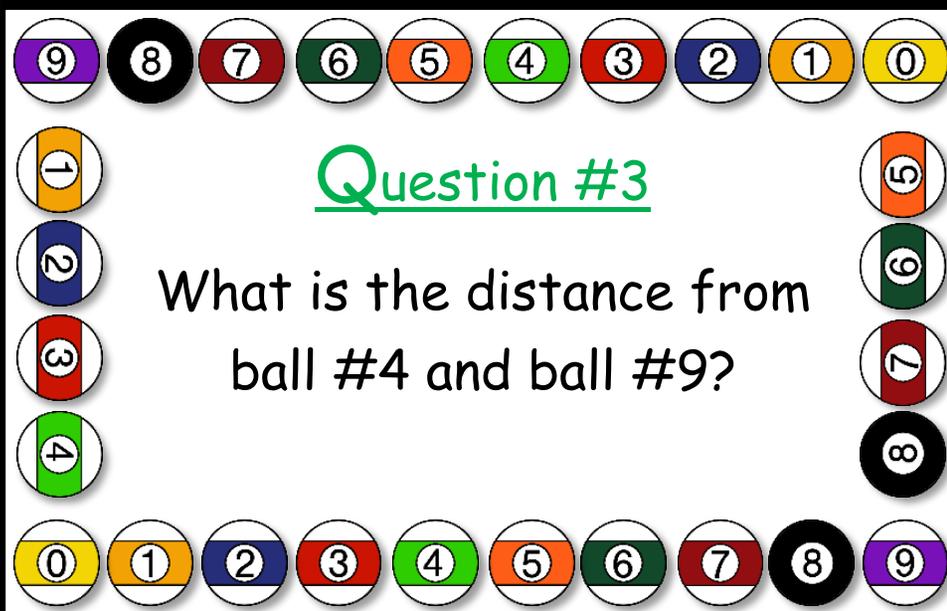
What is the distance from ball #1 and ball #5?



A horizontal number line with 10 numbered circles from 0 to 9. The circles are colored as follows: 0 (yellow), 1 (orange), 2 (blue), 3 (red), 4 (green), 5 (orange), 6 (green), 7 (red), 8 (black), 9 (purple). Ball #0 is highlighted in yellow and ball #2 is highlighted in blue.

Question #2

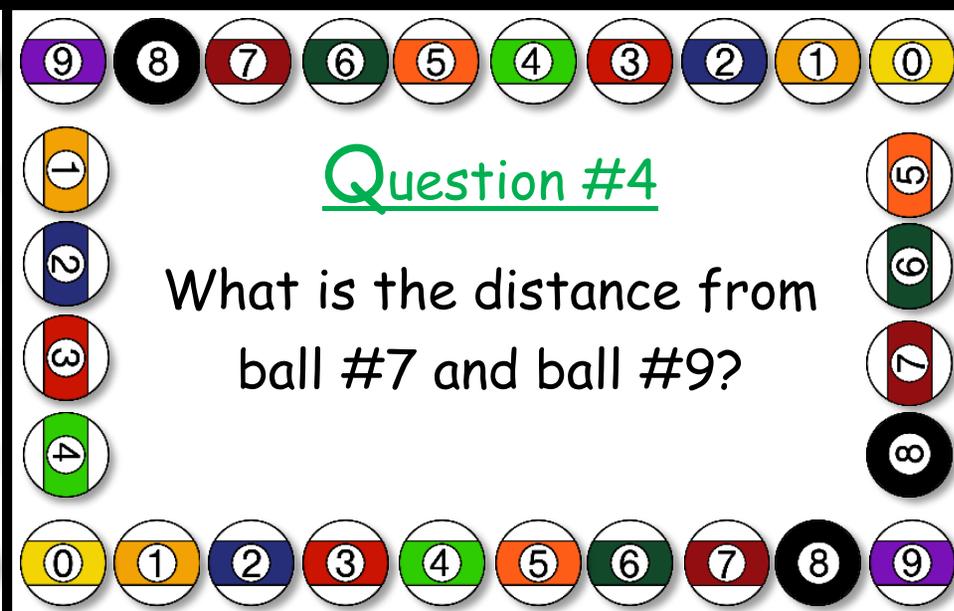
What is the distance from ball #0 and ball #2?



A horizontal number line with 10 numbered circles from 0 to 9. The circles are colored as follows: 0 (yellow), 1 (orange), 2 (blue), 3 (red), 4 (green), 5 (orange), 6 (green), 7 (red), 8 (black), 9 (purple). Ball #4 is highlighted in green and ball #9 is highlighted in purple.

Question #3

What is the distance from ball #4 and ball #9?



A horizontal number line with 10 numbered circles from 0 to 9. The circles are colored as follows: 0 (yellow), 1 (orange), 2 (blue), 3 (red), 4 (green), 5 (orange), 6 (green), 7 (red), 8 (black), 9 (purple). Ball #7 is highlighted in red and ball #9 is highlighted in purple.

Question #4

What is the distance from ball #7 and ball #9?

Question #5

What is the distance from ball #8 to pocket #6?

Question #6

What is the distance from ball #1 to pocket #1?

Question #7

How far would you need to hit ball #4 to make it into pocket #4?

Question #8

How far would you need to hit ball #3 to make it into pocket #6?

**Question #9**

You want to make ball #0 into pocket #4. If you hit the ball a distance of 17 in, would it go into the pocket?

**Question #10**

You want to make ball #9 into pocket #3. If you hit the ball a distance of 22 in, would it go into the pocket?

**Question #11**

You want to make ball #2 into pocket #4. If you hit the ball a distance of 16 in, would it go into the pocket?

**Question #12 (CHALLENGE)**

You want to make ball #2 into pocket #1. However, ball #0 is in the way. In order to make ball #2 into the pocket you will need to first hit the ball against the edge at (11,-13). What is the total distance needed to make the ball in the pocket?

Score ( \_\_\_ / \_\_\_ )

Name: \_\_\_\_\_

# Pythagorean Theorem Pool Table Activity

Date: \_\_\_\_\_

Period: \_\_\_\_\_

Directions: Solve problems #1-12 on the following assigned spots using the Pythagorean Theorem. Show all of your work!



#1	#2	#3	#4
----	----	----	----

#5	#6	#7	#8
----	----	----	----

#9

#10

#11

#12



From this activity, I learned...

Score ( \_\_\_ / \_\_\_ )

# Pythagorean Theorem Pool Table Activity

ANSWER KEY

Directions: Solve problems #1-12 on the following assigned spots using the Pythagorean Theorem. Show all of your work!

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

#1

B#1 → B#5

$$a^2 + b^2 = c^2$$

$$4^2 + 6^2 = c^2$$

$$16 + 36 = c^2$$

$$52 = c^2$$

$$c = \sqrt{52}$$

$$c \approx 7.2 \text{ in}$$

#2

B#0 → B#2

$$a^2 + b^2 = c^2$$

$$5^2 + 6^2 = c^2$$

$$25 + 36 = c^2$$

$$61 = c^2$$

$$c = \sqrt{61}$$

$$c \approx 7.8 \text{ in}$$

#3

B#4 → B#9

$$a^2 + b^2 = c^2$$

$$2^2 + 25^2 = c^2$$

$$4 + 625 = c^2$$

$$629 = c^2$$

$$c = \sqrt{629}$$

$$c \approx 25.1 \text{ in}$$

#4

B#7 → B#9

$$a^2 + b^2 = c^2$$

$$8^2 + 18^2 = c^2$$

$$64 + 324 = c^2$$

$$388 = c^2$$

$$c = \sqrt{388}$$

$$c \approx 19.7 \text{ in}$$

#5

B#8 → P#6

$$a^2 + b^2 = c^2$$

$$10^2 + 16^2 = c^2$$

$$100 + 256 = c^2$$

$$356 = c^2$$

$$c = \sqrt{356}$$

$$c \approx 18.9 \text{ in}$$

#6

B#1 → P#1

$$a^2 + b^2 = c^2$$

$$11^2 + 23^2 = c^2$$

$$121 + 529 = c^2$$

$$650 = c^2$$

$$c = \sqrt{650}$$

$$c \approx 25.5 \text{ in}$$

#7

B#4 → P#4

$$a^2 + b^2 = c^2$$

$$1^2 + 4^2 = c^2$$

$$1 + 16 = c^2$$

$$17 = c^2$$

$$c = \sqrt{17}$$

$$c \approx 4.1 \text{ in}$$

#8

B#3 → P#6

$$a^2 + b^2 = c^2$$

$$8^2 + 1^2 = c^2$$

$$64 + 1 = c^2$$

$$65 = c^2$$

$$c = \sqrt{65}$$

$$c \approx 8.1 \text{ in}$$

#9

B#0 → P#4

$$a^2 + b^2 = c^2$$

$$4^2 + 17^2 = c^2$$

$$16 + 289 = c^2$$

$$305 = c^2$$

$$c = \sqrt{305}$$

$$c \approx 17.5 \text{ in}$$

No, the distance from the ball and pocket is 17.5 in.

Hence, you will be 0.5 in short if you hit the ball only 17 in.

#10

B#9 → P#3

$$a^2 + b^2 = c^2$$

$$20^2 + 8^2 = c^2$$

$$400 + 64 = c^2$$

$$464 = c^2$$

$$c = \sqrt{464}$$

$$c \approx 21.5 \text{ in}$$

Yes, you would make the ball in the pocket because you hit the ball a distance of 22 in and the pocket is only 21.5 in away.

#11

B#2 → P#4

$$a^2 + b^2 = c^2$$

$$11^2 + 9^2 = c^2$$

$$121 + 81 = c^2$$

$$202 = c^2$$

$$c = \sqrt{202}$$

$$c \approx 14.2 \text{ in}$$

Yes, you would make the ball in the pocket because you hit the ball a distance of 16 in and the pocket is only 14.2 in away.

#12

B#2 → P#1

$$a^2 + b^2 = c^2$$

$$13^2 + 5^2 = c^2$$

$$169 + 25 = c^2$$

$$194 = c^2$$

$$c = \sqrt{194}$$

$$c \approx 13.9 \text{ in}$$

$$a^2 + b^2 = c^2$$

$$4^2 + 24^2 = c^2$$

$$16 + 576 = c^2$$

$$592 = c^2$$

$$c = \sqrt{592}$$

$$c \approx 24.3 \text{ in}$$

$$\begin{aligned} \text{Total distance} \\ 13.9 \text{ in} + 24.3 \text{ in} \\ = 38.2 \text{ in} \end{aligned}$$

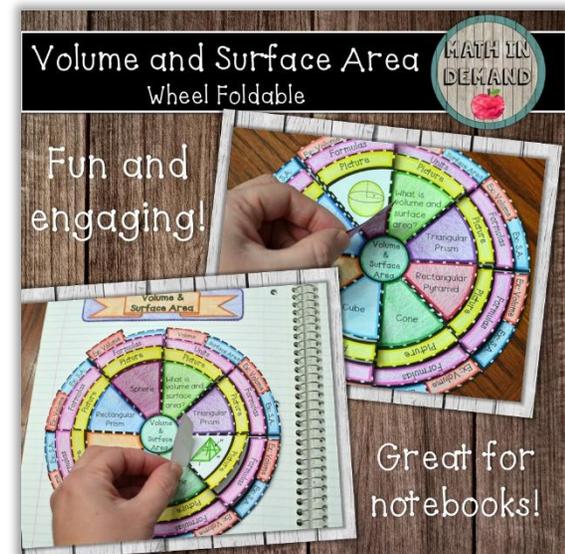
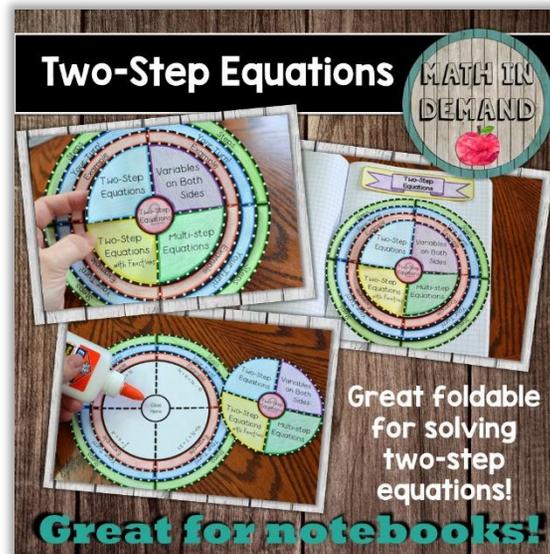
Reflection:

From this activity, I learned...

Answers will vary

# Recommendations

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