

NUMBER SQUARES

I like activities that encourage verbal communication between participants. If I were to give credit for this puzzle challenge, I would say it is inspired by the picture book activity, ZOOM. (You can find the historical reference and a number of delivery options for ZOOM in my latest book, *Portable Teambuilding Activities*, 2015.)

**Communication/Cooperation or
Challenge/Problem Solving (three levels)**

Activity Objective

The group is challenged to assemble the numbered squares in the correct configuration using only verbal communication – participants may not show their puzzle piece(s) to anyone during the process.

FACILITATED OBJECTIVES:

Explore behaviors related to communicating effectively, listening, and leadership. Explore concepts of “the big picture”, consensus, and success/failure.

NEEDS & NUMBERS:

You will need to print and cut out the Number Squares cards that are included with this activity description. For long-term play laminate the pages before cutting out the cards. There is a 16-card puzzle and two challenge levels of a 25-card puzzle (nine cards added to the 16-card puzzle). With the two puzzle choices (and three challenge levels) you can lead this activity with 8 to 25 participants.

TIME:

15 to 30 minutes depending on the size and challenge level of the puzzle in play.

CARD ORIENTATION:

First you'll want to orientate yourself to the Number Squares cards. Open up the PDF Print-N-Play (PNP) document and place it somewhere for easy access (e.g., on your desktop). It will be helpful to look at the document and follow along with this orientation of the cards. There are three different sets of cards (three different puzzles), each with a different degree of difficulty. Let's start with the two 25-card sets.

On the first page of your PDF PNP you will see the heading “25 Square Set (1 of 7)” – the “1 of 7” means there are seven pages to the document. Pages 1 through 4 include 24 cards of the 25-card set. You will notice the numbers on the cards are either a solid gray color or an “open” gray color. The open numbers can be significant to solving the puzzle if the group catches on.

For these 24 cards the open numbers represent the edges of the 5 by 5 grid of the puzzle (you can reference the answer cards on page 7 to see how the cards fit together based on the letter identifiers on each card). For example, the first card on page 1, identified with the

letter “J”, is the top left (corner) card of the 25-card solution (and the 16-card solution). When there is only one open number on a card it will be somewhere on the edges of the grid between the corners.

On page 5 (5 of 7) you will see two cards with the identifier letter of “C”. One card is labeled “25 Square Set – Easy Center” and the other “25 Square Set – Difficult Center”. This “C” card is the center of the 25-card set. (Just in case you missed it, the letter on each card is used to identify each different card – cards are identified with the letters “A” through “Y”.)

If you use the open lettered “C” card (for the 25-card set) it is considered the easier of the two puzzles to solve (since this card is different from the other all-solid number cards in the set, groups will be able to identify that it has significance and deduce it is the center of the puzzle – that’s the possibility anyway).

If you choose to use the card with all solid gray numbers it will be the most challenging puzzle since there will be nine cards with all solid grey numbers to work though in order to identify the center-most card. So, when using the 25-card puzzle for Number Squares you will choose one of the “C” cards that is the most appropriate for the challenge level of the group (be sure to hide away the other “C” card so it doesn’t become a distraction during the challenge).

The 16-card Number Squares set will be the easiest puzzle of the three choices (there is less to work with). You’ll notice on pages 5 and 6 there are replacement cards for X, H, W, A, G, E & I. These cards will be the right and bottom edges of the 16-card puzzle (notice these cards have the open gray numbers at the corners and edges. Before adding these cards you will first need to remove the following cards from the 25-card set:

A, D, E, F, G, H, I, K, N, O, Q, R, V, W, X, & Y (Be sure to hide away these cards so they don’t become a distraction during the challenge).

You will also need to keep the “C” card with the all-gray numbers for the 16-card set – there is no “center” card in this set. You’ll notice the replacement cards have open numbers to indicate the corners and the edges of this set.

Finally, on page 7 you will find the answer cards for each puzzle – these cards are a good reference when picking out the cards you need for your puzzle of choice.

PROCEDURE:

Now that you are familiar with your puzzle choices, the first step to Number Squares is to choose one of the three puzzles that will be the most appropriate for your group. At this time I don’t allow any one player to be holding more than two numbered cards, so this might influence the card set you choose. For example, using the 16-card set I would not run the activity with less than eight participants and no more than 16. Using the 25-card set I would not run the activity with less than 13 participants and no more than 25.

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For this write-up let's say we are working with 16 participants using the 25-card set including the open gray lettered "C" card (this is the moderately difficult puzzle, in my opinion). If I have a table to use I'll spread out the puzzle cards, numbers down, on the table (if I don't have a table I simply deal out one card at a time until they are all dispensed). After laying out all the cards on the table I ask each participant to take one card and then I ask for volunteers to take a second card until all the cards are picked up.

When everyone in the group has at least one card (and no more than two), I explain the challenge. The objective is to arrange the numbered cards into a 5 by 5 grid (5 rows & 5 columns) so that all the sides that are touching have matching numbers. Here are the rules of play:

- Participants can talk about their card(s) as much as they want, but they are not allowed to show anyone what is on their card(s).
- Participants can give away or trade cards with someone else as long as they have at least one card left in their possession.
- Participants are not allowed to trade cards with the same person more than once.
- Participants can have up to two cards in their possession at a time (and again, no less than one card).

So far I've asked my groups to configure the grid solution in two different ways. If I have a table I ask the participants, *when they believe they are ready*, to place their cards on the table, number side down, into a 5 by 5 grid pattern so that when the cards are revealed (turned over one-by-one) they are in solution order. Now, this adds a bit of complexity to the task. By turning the cards upside down the group has to be clear about what cards will match when turned right side up (it can get confusing). When all the cards are arranged on the table I will be ready to turn them over – starting with one of the corners.

NOTE: More often than not I like to open up a discussion (processing) with my group about how they believe they did with the task. Processing before revealing the solution tends to hold attention really well. Then, after all the cards are turned over I only inquire about the concepts of success and failure.

The other configuration (when I don't have a table) is having the group stand together in a way that when the cards are turned over each participant is standing next to the people (cards) they connect with. I often just ask one person at a time to put down their number card(s) on the ground/floor (numbers up) in the configuration they believe to be correct. In the end the group is all looking down at their solution to verify if they were successful or not. Then I move into processing the experience.

SAFETY:

Since this is an activity that requires little movement, there is no physical risk. Now, frustration can present itself, so be sure to monitor verbal behaviors and step in to process the situation if there are issues.

FACILITATION:

Beyond providing the directions for the challenge, Number Squares is a very participant-centered activity. So far I spend my observation time reminding participants not to let anyone see their card(s) and listening for verbal interactions that might be cause for a mid-brief discussion.

There is one choice you will need to make as a facilitator – if you will offer help. You could make a few “Help” cards (writing the word “HELP” on a few index cards) and hand these to some of the participants in the group. If the group wants to ask you a question that might help them through a problem they are facing, a Help card is turned in and they can ask the question. Now, there are some questions I will not answer. For example, “What’s the answer?” You can decide what questions your group can ask you. In most cases I only allow questions that I can answer with a “Yes” or “No”.

With Number Squares, at times, I have limited my help to group questions that are asked with letters involved. As noted above, the letters on each card are identifiers – a way to simplify the answer key and offer help. For example, the group could ask, “Are the corner cards J, D, V & O?” And, I can answer, “Yes.” Again, it will be up to you, and the overall objectives of the group, as to how much help you provide.

OBSERVATIONS/QUESTIONS:

- This activity was all about communicating information to each other. How well do you think you communicated during this task? What was good about the way you communicated with each other? What could have been better about the way you communicated with each other? Do you think you are a good communicator? What makes you think so? What are the “behaviors” of good communication?
- What do you believe to be true about listening? How do we know if someone is listening to us – what do they do? Has anyone ever been in a situation where you believed someone did not listen to you because they didn’t do what you told them to do? Could there be another reason why they didn’t do what you ask of them? Who knows what “active” listening is? How might using active listening help you/us?
- Did anyone notice any leadership behaviors going on during the challenge? What did these behaviors look like? What did they sound like? Were all of them good behaviors? Leadership can be a good thing and a bad thing? When is it a good thing for you? When can it be a bad thing for you?
- What does it mean to “look at the big picture”? What was the “big picture” for this last activity? When did you “see” the big picture? Did knowing the big picture help you complete the task? Did not knowing the big picture prevent you from completing the task? Is it always important to know the big picture? What are some examples of when it’s important and when it’s not so important to know about the big picture?
- What does consensus mean to you? When do groups “reach” consensus? What does it take for groups to reach consensus? When is it difficult to reach consensus in a group? Was there any time during the last task where you were in consensus? Was there any time during the last task when it would have been good to reach

consensus? What particular situations in the future will it be a good idea to reach consensus before moving forward?

- Were you successful with the last challenge? What was the indicator of your success? Was there anything else you were successful with during the challenge? What determines success for you? What do you want to be successful with in the future? If you “failed” the challenge, what did you learn from the experience? What do you want to do better with in the future in order to avoid making the same mistakes? If you do fail together in the future, what will be important to remember?

VARIATIONS:

During my beta testing of Number Squares, I offered a couple icebreakers using the cards to “warm up” the group. I thought they worked well together:

- **What You Say** After handing out one card to each of the participants I teach them about the numbers on the cards – “The numbers are in vertical/up & down orientation. There is a number at the top (I have a card and show them what I mean), there is a number on the right side, the left side, and the bottom of each card. There is also a letter in the center of your card that we will use in the next activity. Any questions?” Then, I ask them to put their thumb near one of the numbers (e.g., the number on the right side of the card). The idea in What You Say is to pair up with someone and tell that person things about you equal to the number in play (the one you have your thumb on). For example, if my number is a five, I will tell my partner five things about myself. Then my partner tells me about herself, equal to the number she has. Then, my partner and I switch cards, put a thumb on the number in play, and find a new partner to share with. During the activity you can switch sides (numbers) of the card by saying, “When you change partners, put your thumb on the bottom number – that is how many things you will share until I switch it up again.” About a three-minute time-frame works well for this one.
- **Building Words** After stopping the action in What You Say tell everyone the card they have in hand will be their resource for the next activity. During this activity participants will be using the letter in the center of their cards. For three minutes they are asked to mingle around and become a part of as many words as possible – cards are held up together in the order of a spelled word. Then break this word up, mingle around, and find another word to be a part of. If it fits within the objectives of the group, tell everyone to keep track of how many words they helped to make – more often than not it simply becomes more about working together and making words and not about keeping score.

Be ready for some moans and groans from the people who believe they have a “bad” letter. This is good fuel for some quick processing after the activity. “How did you react to your letter when you found out about the task?” Those of you with vowels? Those of you with those good consonants – like the “S”, right? How about those of you with the “Q” or the “X”? When the activity began, what did you do about your

situation? How did you use your resources (you have more than just your own letter)?" (After some discussion about Building Words I moved into the Number Squares challenge.)

PHYSICAL EDUCATION GRADE LEVEL OUTCOMES:

(www.shapeamerica.org/standards/pe/)

- Middle School: S4.M1 – Exhibits personal and social responsibility – cooperating and demonstrating inclusive behaviors; S4.M5 – Cooperates and problem-solves with a small group of classmates.
- High School: S4.H3 – Uses communication skills and strategies that promote team/group dynamics; S4.H3 – Opportunity for some to assume a leadership role – a collaborative leadership setting. S4.H4 – Solves problems and thinks critically.

21st CENTURY LEARNING:

(www.p21.org)

- Critical Thinking and Problem Solving: Use various types of reasoning; Analyze how parts of the whole interact with each other (How do the different pieces relate to the puzzle?); Effectively analyze and evaluate evidence.
- Communication Collaboration: Listen effectively to decipher meaning; Communicate effectively in diverse environments.
- Social and Cross-Cultural Skills: Know when it is appropriate to listen and when to speak; Conduct themselves in a respectful manner.
- Productivity and Accountability: Participate actively (it is easy for participants to become distracted during this activity as opposed to being “engaged” in the process – more ears will speed up results).
- Leadership and Responsibility: Use interpersonal and problem-solving skills to influence and guide others; Act responsibly with the interest of the larger community in mind.

ADDITIONAL IDEAS: