



The activities in this packet are part of an academic competition described in ["Think-a-Thon ~ Outdoor Field Day for the End of the Year."](#)

Please read this article in its entirety to get the big picture.

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## Think-a-Thon OUTDOOR EVENTS



## Preparation and Set Up



1. Create outdoor challenge activities that students can solve by working together. Suggested activities are on the following pages. If you include an INDOOR THINK-A-THON event the same day, you may want to limit the activities to three stations (18 - 20 min. each) for a total of about 75 min. which includes time for station rotations. If your stations are widely spread apart, or if you have more than one class participating, you may want to borrow a megaphone to alert teams when it's time to stop and rotate.
2. Map out an area for each station. Check for any safety hazards (e.g. ants, tripping hazards), and be sure students have access to drinking water. Spread the stations far enough apart that students have ample room and won't be aware of what's going on at other stations.
3. Each outdoor station needs to be "manned" by a volunteer. Two teams compete against one another at each station (up to 10 students). If you have 24 – 30 students or fewer, then you only need 3 volunteers, one at each station. In the photo below, you can see that we mapped out 9 stations and had 3 groups rotating through the same 3 stations (95 - 100 students).
4. Prepare what is needed at each station and allow time to set everything out. It takes less than 20 minutes to walk out on your playground or field to set up three stations. Even setting up the 9 stations below took less than 30 minutes!
5. Once you have your directions determined, print them out clearly for your station volunteers, telling them exactly what to say to the students. You may want to create lanyards for them as described in the article. Also, copy the station information (see next page) and put it in a folder for the station volunteer.



## SUGGESTED STATION ACTIVITIES

- ★ **CRACK THE CODE**
- ★ **BUILDING CHALLENGE**
- ★ **MEMORY RELAY**

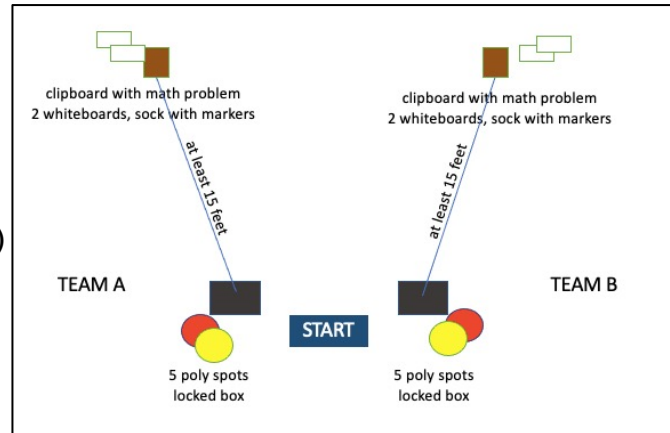
### NOTE

These are suggested activities only. The materials and puzzles you have in your classroom can inspire outdoor challenges.

## STATION ONE: CRACK THE CODE

### NEEDED:

- 10 poly spots (5 per team; borrow from gym)
- 2 clipboards (one for each team)
- 2 math problems (see samples provided)
- 4 small individual whiteboards (2 per team)
- socks with dry-erase markers inside
- 2 pouches or boxes that can be locked
- 2 combination locks
- coded message to place in the box (opt.)



**TO SET UP:** Determine the location for **START**. Place the math problems on clipboards at least 15 feet away from the **START**. Place the two clipboards far enough apart that each team has some space. You can also place obstacles in the path if you choose. Also, place two small whiteboards near each of the clipboards with the markers in a sock. This gives each team something to use to do their figuring.

Teams meet at **START** where a station volunteer reads the directions (see next page). Each team has a locked box or pouch. The lock combinations are determined by the answers to math problems. The math problems are on clipboards several feet away. Students must get to the clipboards, stepping only on poly spots as directed, with at least one hand or foot touching a spot as they cross. Once the entire team has reached the clipboard, they may begin solving the problem, which will result in 3 numbers. These 3 numbers are the numbers in the combination to unlock the lock. However, they are not in any order. So a 6, 5 and 3 could be for several combinations (e.g. 3-6-5 / 5-3-6, etc.). Students must return to **START** in the same way, stepping on and touching the poly spots.

Once back at **START**, the students race to open their locks first. Inside can be coupons for a treat, points, or another task. We usually included a coded message that, if deciphered, earned the team additional points. This additional task ensured that students rarely finished this station with time to spare.

**MAKE SURE STUDENTS LEAVE THE STATION AS THEY FOUND IT, READY FOR THE NEXT GROUP AS TEAMS ROTATE.**

**SAY:**

“THIS is the ‘CRACK THE CODE” CHALLENGE. At this station, your task is to open the locked plastic pouch here at the START. A clue to finding the combination to the lock is over there (*point to clipboards*). However, you won’t just walk over there to get your clues. You must get to them by stepping on colored spots only. The entire team must get to the clipboards by stepping on these spots and the main rule is that someone’s foot or hand must be touching the spots at all times. So as you go forward, you may not place spots ahead of you without a foot or hand touching, and you may not leave spots behind you empty. **AGAIN**, a hand or foot must be touching the spots at all times. The spots must end up in your hands at the end of each crossing. Once you think you have what you need, you will return to **START** *in the same way* to try to open your lock.

One last thing: You cannot begin anything at either side until everyone on your team has crossed.

*Are there any questions? GOOD LUCK!*

# THE CRACK the CODE CHALLENGE



SOLVE THESE PROBLEMS TO FIND THE COMBINATION  
THAT WILL UNLOCK THE POUCH CONTAINING YOUR TOP  
SECRET MESSAGE!

Problem #1:

STAR, TRIANGLE and SQUARE represent the same values in each of these four problems. Find their values.

$$\square + \triangle = \star$$

$$\star + \triangle = 9$$

$$\star - \square = 2$$

$$\square + 1 = \triangle + \triangle + \triangle$$

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Problem #2

Use your answers to figure out the three numbers in your combination. The numbers are not necessarily in order.

$$\square + \triangle$$

$$8(\triangle + 1) \div 4$$

$$2(\star) - (\square + 7)$$

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$$\square + \triangle = \star$$

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Problem #2

Use your answers to figure out the three numbers in your combination. The numbers are not necessarily in order.

$$4(\triangle) - \star$$

$$\star - \triangle$$

$$\square \times 4 - 6(\triangle)$$

## STATION TWO: MEMORY RELAY

This relay race is based on the kinds of logic problems encountered in the game [Chocolate Fix](#). Students need to be taught the format of the game in order to understand how to interpret the clues in this race.

### NEEDED:

2 small cookie sheets (one per team)

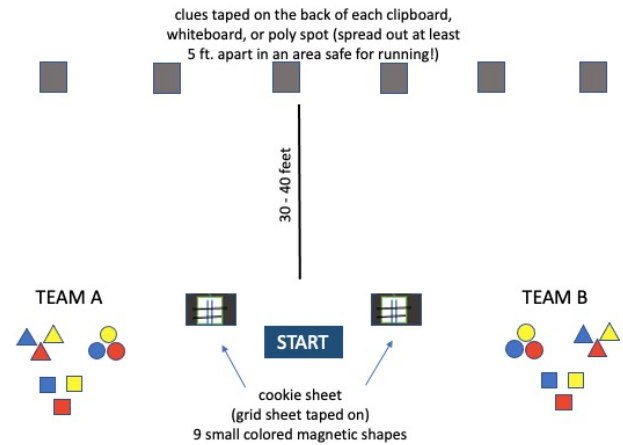
2 towels (optional)

2 sets of 9 magnetic colored shapes

(3 triangles, 3 squares, 3 circles similar to [these](#). We created our own with magnetic tape and attribute blocks)

2 grid sheets- one taped to each cookie sheet

6 clue cards (see pages that follow) - laminated and adhered to the back of something that cannot blow away such as small whiteboards, clipboards, or poly spots. These clue cards use the colors red, yellow, and blue to match attribute blocks, but the clues are based on the game *Chocolate Fix* which uses white, light brown and dark brown colors.)



### TO SET UP:

The two cookie sheets need to be set on two towels several feet apart and the same distance from the clues at the end. Place the nine magnetic shapes around the edges of each cookie sheet (outside the grid area). About 30- 40 feet away, arrange the six clues facing down on the ground.

Student teams race to solve a grid puzzle on the cookie sheet. Clues are hidden and teams send one member at a time to run down to the end, look at a clue, memorize it, then run back to the cookie sheet and add or change the puzzle. Members continue running back, one at a time, to memorize clues. Students may return to the same clues more than once if they choose and adjust the puzzle until all agree it is correct. Impose a penalty (1 minute time-out) for an incorrect answer to encourage each team to be sure they all agree their solution is correct.

### IMPORTANT

At the end of each rotation, have the students get the station ready for the next team by:

- placing the magnetic shapes outside the grid on the cookie sheet
- making sure the first set of clues is still set up again 30 – 40 feet from the cookie sheets.

**SAY:**

**“THIS station is the “GROUP PUZZLE/ MEMORY RELAY CHALLENGE.**

At this station, your team will use six clues to solve a puzzle. The six clues are found under each spot you see down at the end. When I say “Go,” one team member will run to a spot, turn it over, and memorize the clue as quickly as possible. Then that person will turn it back over, run back, and place pieces where he or she thinks they might belong on the cookie sheet. When finished, that person will tag another member who will then run to a spot, look at another clue, come back and add to the puzzle.

When your team believes the puzzle is correctly solved, raise your hands and I will check it. If the solution is incorrect, you must suffer a one-minute penalty before continuing.

**GOOD LUCK!**

# THE MEMORY RELAY CHALLENGE





## Sample Grid Sheet

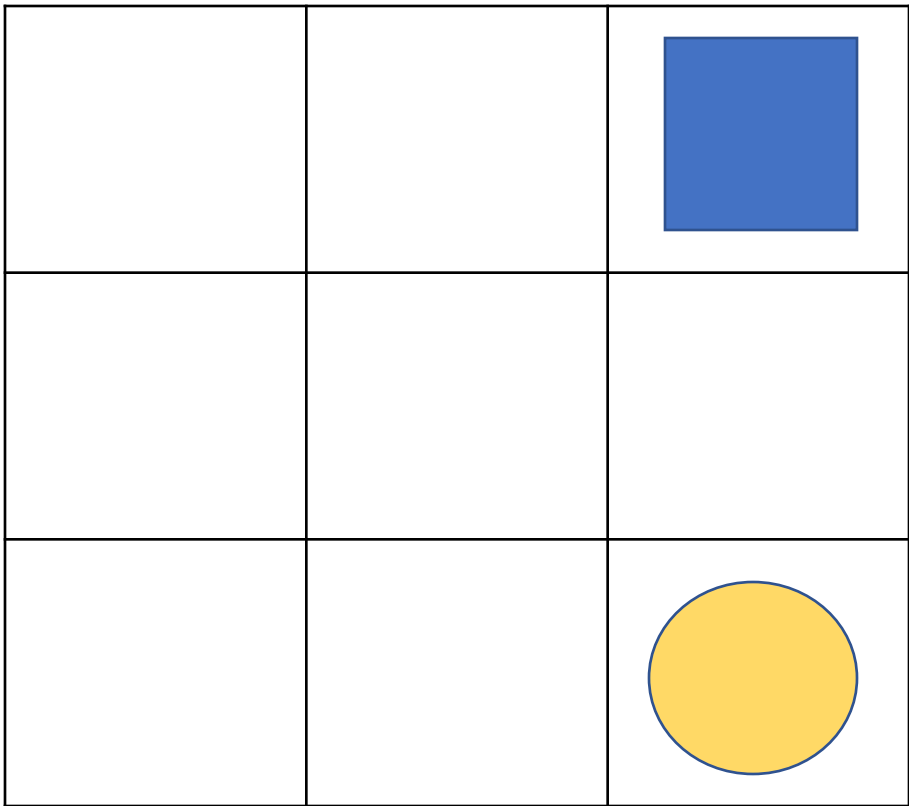
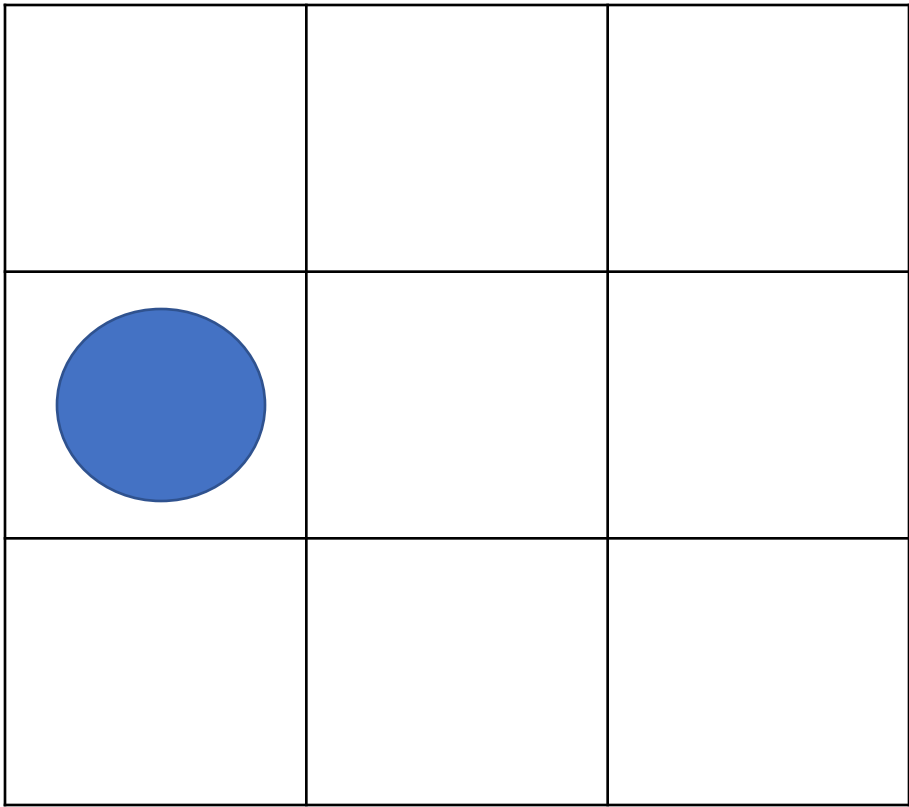
Resize according to the size of the magnetic colored pieces used.

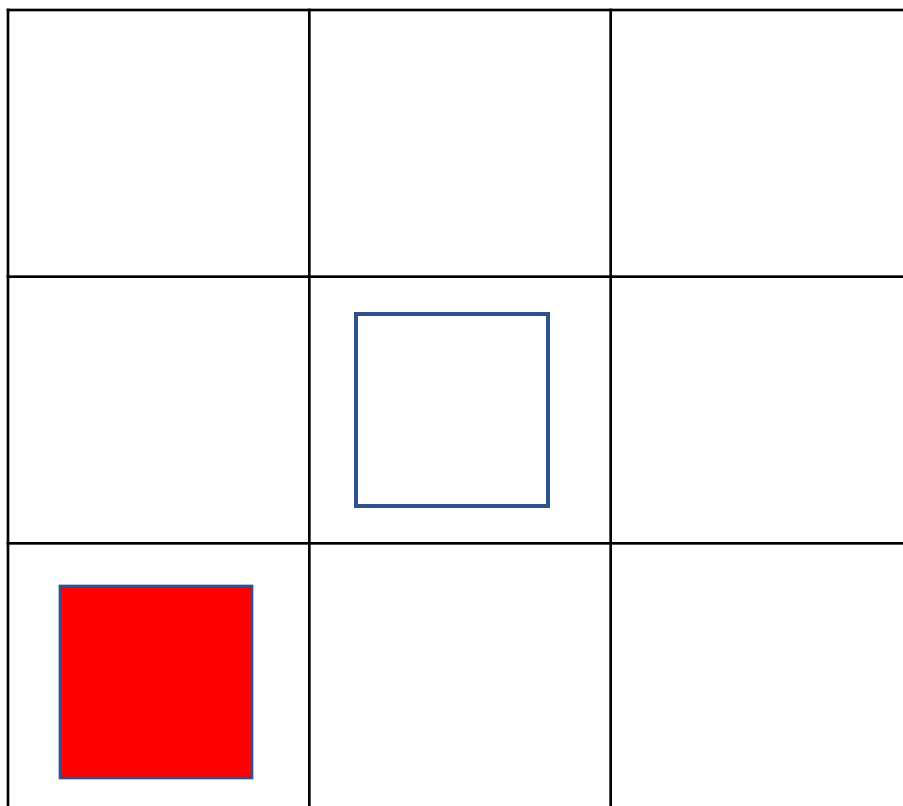
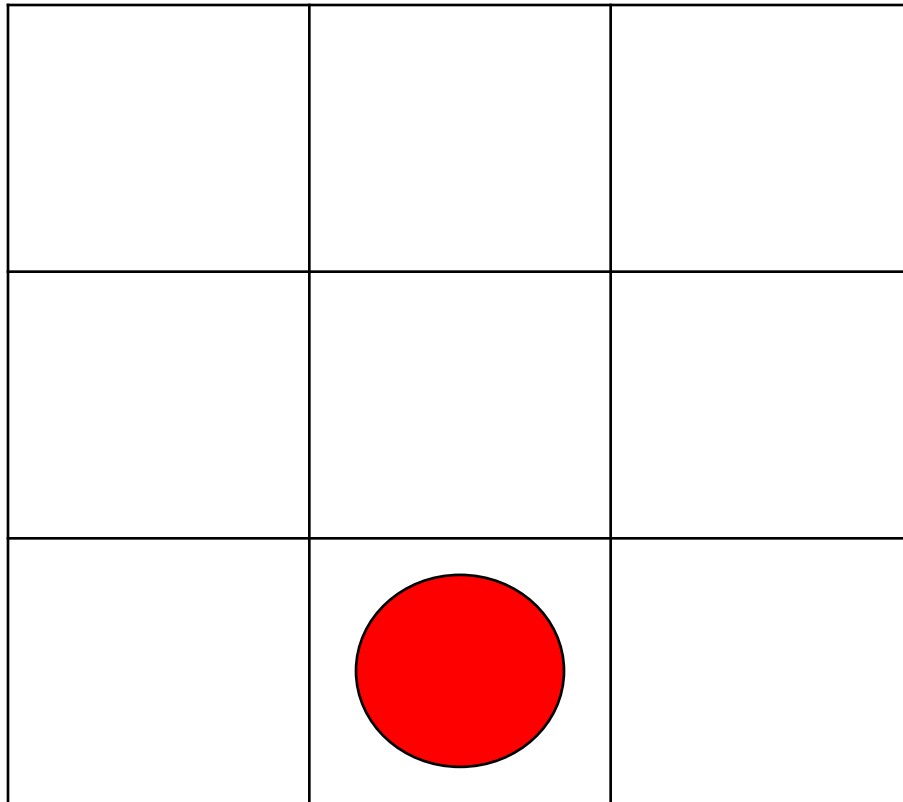

### **CLUE CARDS for MEMORY RELAY**

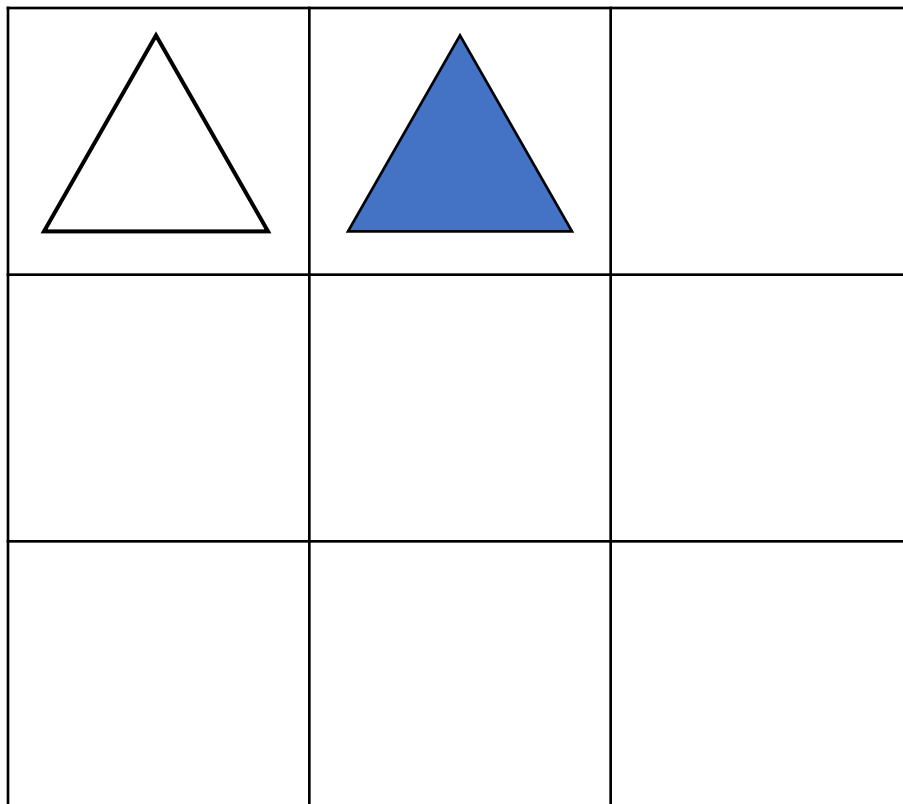
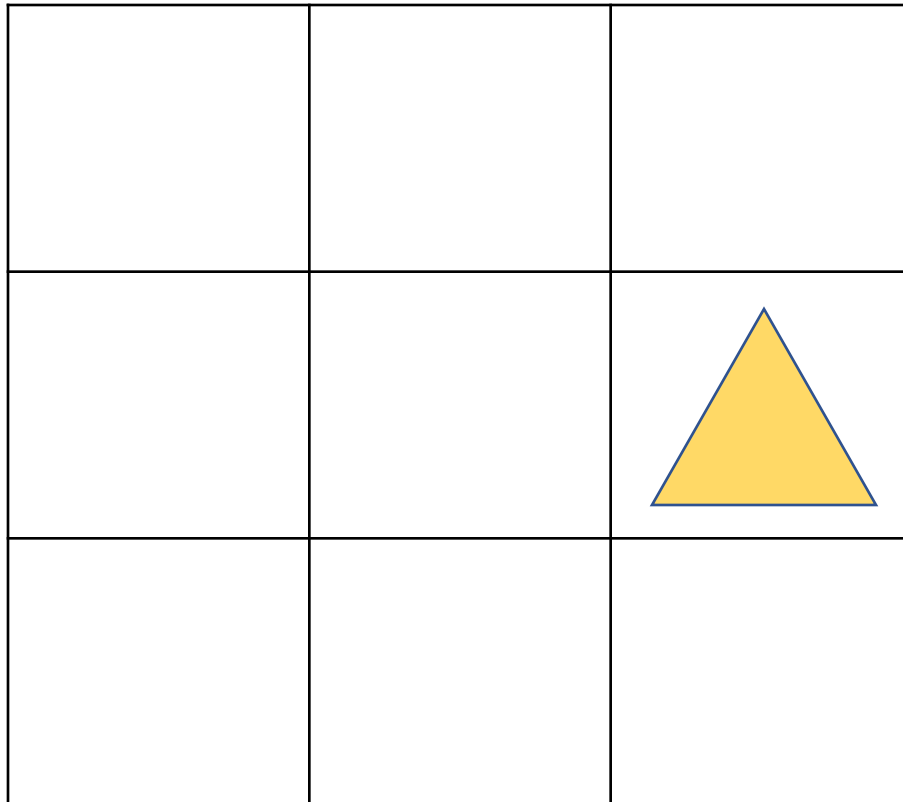
On the following pages are the six clue cards used in this relay race. For the game, the cards will be spread out across the field, face down.

Copy, cut apart, and laminate these cards. Clip or tape each one to something that will not blow around in the wind (e.g. clipboards, individual whiteboards, poly spots, cutting boards, etc.).

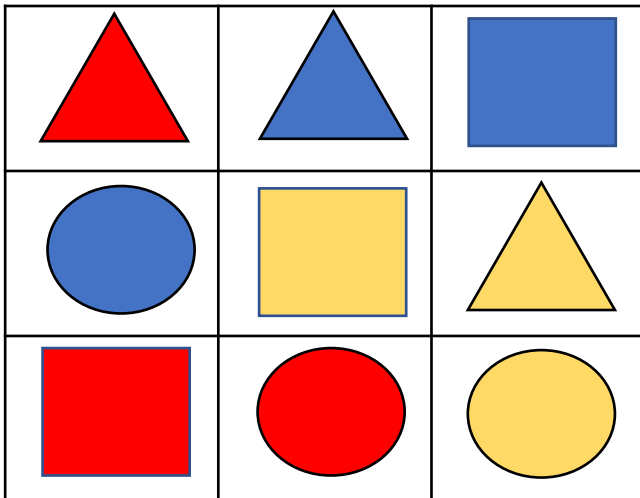
After the Think-a-Thon, remove these from the board or poly spot and file them in a folder!



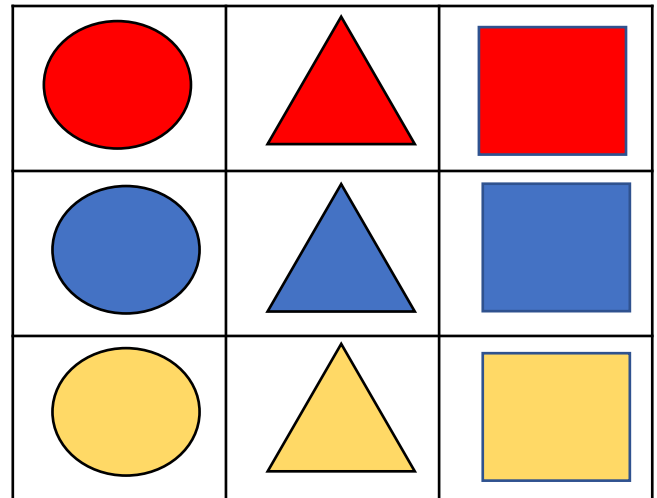




## Answer to Puzzle



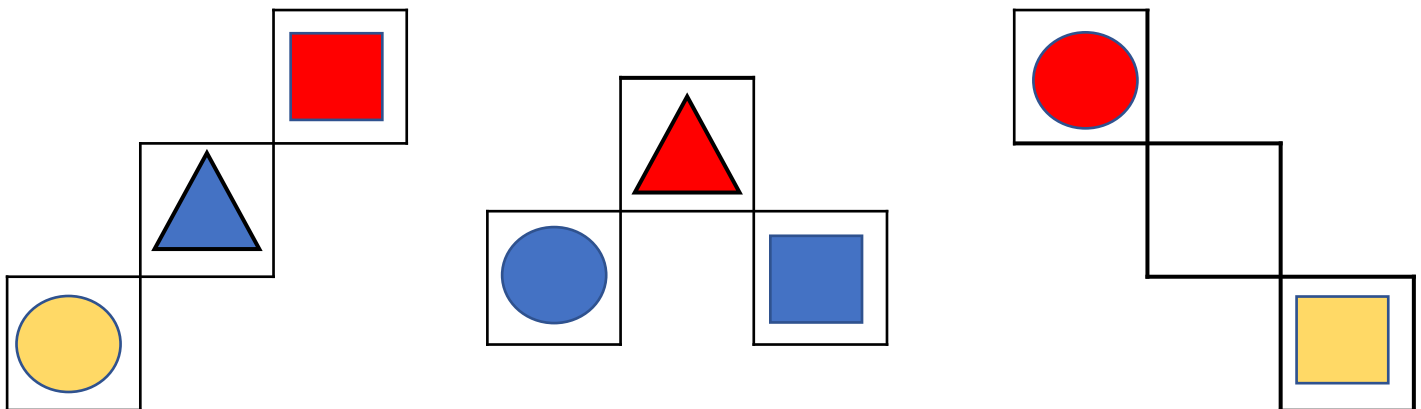
## Answer to Extra Puzzle



The extra puzzle is provided in case the relay race is completed before time is up. Make two copies of this page on cardstock, cut the page in half and laminate for the station volunteer. You can keep the extra copy of the ANSWER KEY on file.

## MEMORY RELAY STATION ~ EXTRA PUZZLE

Your team can earn extra points by completing this second puzzle. Work together to solve it before your time is up!



## STATION THREE: BUILDING CHALLENGE

This station activity is based on the *Build It!* logic problems encountered in the book *Get it Together*. You can find a sample of this type of problem [HERE](#). However, any building challenge in which students must meet criteria will work, and we varied ours from year to year. If you do choose to do a *Build It!* type problem, here are some further instructions.

### NEEDED:

2 small chalkboards or whiteboards – one per team

2 envelopes containing student baggies

(colored blocks and clues in baggies) – one per team

Each baggy contains 1 or 2 colored blocks and one clue card, according to a *Build It!* puzzle. There will be four baggies in each clasp envelope for a total of 8 baggies, enough for both teams.

A white envelope containing clue cards for a second puzzle



### TO SET UP:

Set one small chalkboard at each picnic table or bench so that the two teams will be as far apart from one another as possible. The chalkboard is the team's building surface.

Prepare 4 baggies so that each team member will have a baggy. If there are five team members, ask two team members to share a baggy. In each baggy should be 1 or 2 colored blocks and a clue card. One baggy will be handed to each team member when it's time to begin.

Students build the block structure following the directions ("You may READ your clue to the group, but not show your clue). When a team has successfully solved the puzzle, check against the answer key. Then, hand out the clue cards for Puzzle #2, one or two to each student. The team will use the same blocks – no need to return them to the small baggies until time is up. If time allows, students may attempt Puzzle #3. The same rules apply for solving the second and third puzzles.

### IMPORTANT

At the end of each rotation, have the students get the station ready for the next team by:

- returning the correct blocks to each baggy and placing them back in the envelope
- returning Puzzle #2 clues to the white envelope
- making sure the chalkboard is where they found it when they started.

**SAY:**

“This station is called the “**BUILDING BLOCKS CHALLENGE.**” Here your team will use colored blocks to build structures according to the clues you are given. Each of you will be given a baggy. In the baggy are some colored blocks and a clue. You may not show your clue to anyone else. You are the only one(s) who can read this clue. You may read your clue aloud. You **MAY** take out the blocks as your team attempts to build the structure.

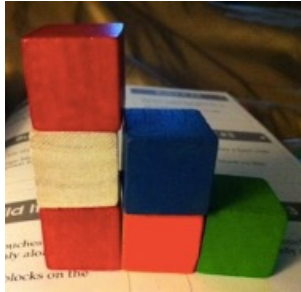
The key is to work together! When everyone agrees that the structure is correctly built, all of you should raise your hands so I can check it.

**GOOD LUCK!**

# THE BUILDING BLOCKS CHALLENGE



## Sample Answer Key ~ Building Blocks Challenge



### Take photos!

If you create a Think-a-Thon event for your school, take lots of photos to share! Parents, administrators, and district personnel would also love to see photos!

### Determining the Think-a-Thon Winner

Station volunteers can keep track of the winning team at each station. You can assign points at each station and then add those to the point totals from the INDOOR STATIONS. Please return to this article to learn more about the INDOOR events.

### Questions? Comments? Want to Share Yours?

[COMMENT HERE](#) so other teachers can benefit or send a [MESSAGE](#).

### Big Ideas for Little Scholars

